Evidence-Based Psychotherapies for Children and Adolescents

THIRD EDITION

edited by
John R. Weisz
Alan E. Kazdin

ebook

THE GUILFORD PRESS

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THE GUILFORD PRESS
New York London

A Division of Guilford Publications, Inc.
370 Seventh Avenue, Suite 1200, New York, NY 10001
www.guilford.com

Printed in the United States of America

This book is printed on acid-free paper.

Last digit is print number: 9 8 7 6 5 4 3 2 1

Library of Congress Cataloging-in-Publication Data

Names: Weisz, John R., editor. | Kazdin, Alan E., editor.
Title: Evidence-based psychotherapies for children and adolescents / edited by John R. Weisz, Alan E. Kazdin.
Description: Third edition. | New York : The Guilford Press, [2017] | Includes bibliographical references and index.
Identifiers: LCCN 2017010512 | ISBN 9781462522699 (hardback)
Subjects: LCSH: Child psychotherapy. | Adolescent psychotherapy. | Evidence-based psychiatry. | BISAC: PSYCHOLOGY / Psychotherapy / Child & Adolescent. | MEDICAL / Psychiatry / Child & Adolescent. | SOCIAL SCIENCE / Social Work. | MEDICAL / Nursing / Psychiatric. | PSYCHOLOGY / Clinical Psychology.
Classification: LCC RJ504 .E95 2017 | DDC 618.92/8914—dc23
LC record available at *https://lccn.loc.gov/2017010512*

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Preface

It seems likely that behavioral, emotional, and social problems have always been a part of childhood, and that adults' efforts to help children with these problems are about as old as parenthood. Indeed, some of our most ancient documents include advice to parents on effective practices—for example, "Train a child in the way he should go, and even when he is old he will not turn away from it" (Proverbs 22:6; Spangler, 2011). The deportment of children in need of such training also has a long history. Socrates (fourth century B.C.E.) is said to have commented that "children are now tyrants, not the servants of their households. They no longer rise when elders enter the room. They contradict their parents, chatter before company, gobble up dainties at the table, cross their legs, and tyrannize their teachers" (in Platt, 1989).

Given the long history of child problems and adult helping, it seems remarkable that formal systems of child and adolescent psychotherapy have only taken shape over the past century, and that the scientific study of psychotherapy is barely more than 50 years old. However, once research on child and adolescent psychotherapy began and built some momentum, it accelerated fast. One result has been a burgeoning collection of "evidence-based psychotherapies for children and adolescents." The term refers to an array of psychological interventions that have been tested in studies and have shown evidence of beneficial effects. The studies have been designed in a number of different ways, and the criteria for establishing benefit have differed across the studies, but the commonalities are significant. There is general agreement across variations in specific methods that for a particular psychotherapy to be considered evidence-based, the intervention procedures must be well specified and documented (e.g., in the form of a treatment manual), treatment benefit must have been shown in well-controlled studies that rule out alternative explanations (e.g., showing that improvement could not reflect merely the natural time course of a problem), and beneficial effects must be robust across replication, ideally by investigators other than those who created the treatment program.

A substantial number of current psychotherapies satisfy these criteria, some more extensively than others. In addition, many programs of research now underway are developing psychotherapies, testing their effects, and investigating how, why, and for whom treatment works, what the necessary and sufficient components of intervention are, and how to create and implement treatments that will work well with various population groups and in varied intervention settings. To understand the development, current status, and emerging future of the field, it is important to know about those venerable programs for which extensive support has already been compiled, about other programs for which development and testing are well underway, and about research pushing psychotherapies into new frontiers. This is the perspective that has guided our work shaping the present volume. We want to convey in this book the broad sweep of the field, capturing treatments supported by evidence, illustrating the strategies being used by clinical scientists as they build treatments and enrich the evidence base in diverse ways, and examining critical issues that impinge on treatment development and testing.

There are pressing reasons to present the tapestry of evidence-based psychotherapies and the kinds of work needed to fill in that tapestry. At this writing, national economies are struggling, countries around the world face the challenge of limited resources, and violence and dislocation threaten the mental health of children and families in many regions. Funds for health and mental health care are curtailed in many quarters, at a time when the need has increased and is more evident than ever before. These conditions highlight the need for services that are justifiable because they have been shown to work. The chapters in this book show that such services exist, and the number and array of such services are expanding rapidly. On the other hand, for many of the child- and adolescent-related mental and behavioral disorders noted in the *International Statistical Classification of Diseases and Related Health Problems, 10th Revision* (World Health Organization, 2016), there are still no evidence-based psychotherapies designed specifically for use with young people. Moreover, most training programs in the major mental health professions—clinical psychology, child psychiatry, social work, counseling, and pediatrics—still provide relatively little training in the evidence-based psychotherapies. Each of these conditions is changing, but the changes may be best supported by efforts to identify, describe, and highlight the relevant evidence-based treatments, the evidence supporting them, and the most effective strategies used to build and implement them and disseminate information about them.

This book is designed to be useful to students in psychology, social work, psychiatry, counseling, and other mental health-related fields; to clinical scientists, including those early in their careers launching programs on effective intervention; to clinicians, including practitioners seeking to broaden their array of skills in the best-tested practices and those willing to partner with clinical scientists in testing and improving psychotherapies; and to parents and other caring adults, who seek to navigate a landscape populated with claims and counterclaims about treatment options for their children. To make the book useful to such a diverse readership, we have worked with authors to generate concise, streamlined descriptions of the various psychotherapies, each one encompassing the conceptual basis for treatment, the intervention procedures used, evidence on the effects of treatment, and challenges and directions that need to be pursued in the future.

The discipline of concise chapters made it possible for us to provide rather broad coverage of treatments and issues related to their development and testing. Our chapters encompass interventions for a broad range of difficulties experienced by young people, including depression, anxiety, posttraumatic stress, obsessive–compulsive disorder, conduct problems, delinquency, attention-deficit/hyperactivity disorder, autism spectrum disorder, eating disorders, enuresis and encopresis, substance use disorders, and suicidal and nonsuicidal self-injury. Additional chapters focus on evidence-based psychotherapies in relation to minority group youth, assessment issues, and ethical issues; efforts to link treatment development to developmental science, emerging technology, and neuroscience; and strategies for personalizing evidence-based treatment. Given the importance of spreading effective treatments to young people who need them, we have included chapters on implementation outside the boundaries of a typical study, including statewide, nationwide, and cross-national efforts. Taken together, the chapters capture the nature of the processes involved in creating evidence-based psychotherapies and making them available to young people and their families—beginning with conceptualizing clinical problems and conceiving solutions, progressing into development and documentation of intervention procedures, and moving directly to empirical testing, including, ideally, testing in contexts and with populations more and more like those for which the intervention is ultimately intended, and testing aimed at understanding the change processes through which intervention benefit comes about—now including implementation science (studying how to put a treatment into action in a new setting and make it effective there).

Although we have emphasized the content of the chapters, we should note that the greatest strength of this book is its contributors. We were extremely fortunate to engage prominent investigators and thinkers whose work is rigorous and innovative, and whose contributions to the field are widely recognized. We are grateful to these accomplished authors for the time and care they have taken to convey their psychotherapy and research programs, as well as their valuable ideas about the field, in such clear and compelling ways. We also acknowledge several sources of support for our own research during the preparation of this book. For Alan E. Kazdin, these sources include the Humane Society of America, the Jack Parker Corporation, the Laura J. Niles Foundation, the Morris Animal Foundation, and the National Institute of Mental Health. For John R. Weisz, these sources include the Annie E. Casey Foundation, the Connecticut Health and Development Institute and Department of Children and Families, the Institute of Education Sciences (of the U.S. Department of Education), the National Institute of Mental Health, and the Norlien Foundation. We are both especially indebted to our wise colleagues, postdoctoral fellows, and graduate students, who are continuing sources of intellectual stimulation and sheer fun. We appreciate very much the care, commitment, and tireless good humor shown by Karen O'Connell, who worked with us on virtually every detail of book production to ensure a quality product. One of the editors, who shall go nameless, wishes to acknowledge what a pleasure it has been to work with the other editor, who will also go nameless. Finally, Seymour Weingarten, Editor in Chief of The Guilford Press, played a major role in conceptualizing the first edition of this book, and his support has been unflagging through the second and third editions. We are pleased to have the opportunity to work with him.

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PART I

FOUNDATIONS OF CHILD AND ADOLESCENT PSYCHOTHERAPY RESEARCH

CHAPTER 1

Introduction

Context, Background, and Goals

Alan E. Kazdin and John R. Weisz

The focus of this book is on "psychotherapy," which is defined broadly to include any intervention that is designed to reduce distress or maladaptive behavior or enhance adaptive functioning, and that uses such means as counseling and structured and other planned psychosocial interventions (Garfield, 1980; Waldron-Skinner, 1986). The goals of therapy include improving adjustment and functioning in both intrapersonal and interpersonal spheres, and reducing maladaptive behaviors and various psychological and often physical complaints. The means by which the goals are achieved are primarily interpersonal contact; for most treatments this consists of verbal interaction. In psychotherapy for children and adolescents, the means may include talking, playing, prompting and rewarding new behaviors, fostering problem-solving and coping skills, and rehearsing activities.[1] Also, the persons who carry out these actions may include therapists, parents or guardians, teachers, or peers. A variety of therapeutic aids, such as puppets, games, stories, animals (e.g., dogs, horses), videos, technology, and social media, may be used as the means through which treatment goals are pursued. Given the definition of therapy and our focus, several other treatments that might be used for childhood disorders (e.g., medication, diet) are omitted from the definition.

Psychotherapy has a remarkable history well beyond its formal delineation as a healing enterprise (Freedheim et al., 1992). A defensible place to begin would be with the work of Aristotle (38–22 B.C.E.), who emphasized the role of catharsis in tragic drama, comedy, and the arts more generally in arousing and alleviating emotional states (*Poetics,* 350 B.C.E.; *Politics* VIII, 350 B.C.E.).[2] The paths from Aristotle to psychotherapy could readily be charted by tracing medicine, religion, spiritualism, and complementary remedies that have used practices such as suggestion, hypnosis, and assorted quasi-medical or expectancy-based interventions directed toward the alleviation of stress, maladjustment, and a broad range of maladies (Scott, 2010; Shapiro & Shapiro, 1998; Wampold & Imel, 2015). The formal delineation of psychotherapy as an area of study and clinical work can be traced to the past 100 years or so (Norcross, VandenBos, & Freedheim, 2010). In this context, psychotherapy grew directly from efforts to intervene to address impaired mental (psychiatric) function and problems of adjustment.

Empirical research on child psychotherapy has a relatively brief history. The earliest reviews of the therapy literature identified a small number of studies that included children or adolescents (Levitt, 1957 [18 studies]; 1963 [22 additional studies]). The reviews concluded that psychotherapy did not seem to be more effective than the passage of time without formal intervention (i.e., no therapy). The rate of improvement among children (3–6%) was about the same, whether or not treatment was provided. This conclusion was similar to the one reached by Eysenck (1952) in his pioneering and influential review of the effects of psychotherapy for adults. The conclusions reached in all three of these reviews were based on studies that in most cases were methodologically weak. For example, research included few randomized controlled trials, the samples were small, and the treatments were not well specified. Even so, the reviews had an important influence by showcasing an area and conveying the need for much more and better empirical research.

In the past 6 decades, the quantity of studies on the effects of psychotherapy has greatly increased (Weisz et al., in press). There is no definitive count of all of the studies on the world stage. However, as of 1999, a conservative count of studies within the English language alone estimated 1,500 controlled studies of psychotherapy with children and adolescents (Kazdin, 2000). The quality of research has improved over the years as well. The standards that need to be met for approval to begin a psychotherapy outcome study, to obtain funding to mount the study, and to publish the results have become increasingly demanding. For example, studies must meet special standards of reporting (e.g., Consolidated Standards of Reporting Trials [CONSORT]; *www.consort-statement.org*) that include clear statements about recruitment procedures and inclusion and exclusion criteria, provide treatment in manualized form, codify treatment fidelity, use multiple measures and multiple assessment methods, and assess therapeutic change using criteria beyond statistical significance (e.g., magnitude of effects, clinical significance) (Moher et al., 2010). Investigators complete information to convey exactly what the measures are, what the primary measures will be, and how the measures will be examined. The CONSORT criteria are well in place, adopted by several hundred journals, and span multiple disciplines in which interventions are evaluated (e.g., medicine, rehabilitation).

Beyond CONSORT, there are many additional standards that clinical trials are required or recommended by funding agencies (e.g., National Institutes of Health), international organizations (e.g., World Health Organization) and a consortium of journal editors (the International Committee of Medical Journal Editors). In the United States, the largest clinical trials database (*clinicaltrials.gov*), as of this writing, has registered approximately 280,000 studies; they encompass clinical trials from all 50 states in the United States and 191 countries. The shared goals of the many ways of registering clinical trials are to improve the design, execution, and analyses and specification of critical facets in advance of completion of the study.

Study registration may also improve prospects for uniform reporting of findings, even null and negative findings, thus helping to maximize representativeness of the evidence base.

More often than not, decisions about what is evidence based draw on multiple studies rather than the minimum one or two studies, with a replication by an independent research team. Meta-analytic and narrative reviews are the primary means of synthesizing clinical trials. The development of standards for conducting and reporting individual studies, as highlighted earlier, improved the quality of the studies that can be reviewed, and combined and strengthened the inferences that can be drawn. The standards for the reviews of research have improved as well. Two prominent standards are the Cochrane Collaboration (*www.cochrane.org/about-us*) and the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) Guidelines (*www.prisma-statement.org*). For example, the PRISMA guidelines provides a checklist of several criteria to be met (e.g., specification of criteria for inclusion of studies, how decisions were made for combining measures, whether efforts will be made to assess publication bias).[3] Standards for reporting and carrying out individual studies, as well as for conducting reviews, apply across multiple disciplines in health care and multiple journals, and cross international boundaries. Clinical trials often are multinational, and common criteria for conducting studies and evaluating bodies of work can facilitate integration of knowledge from many sources and communication among investigators.

A FOCUS ON EVIDENCE-BASED PSYCHOTHERAPIES

This book is about evidence-based psychotherapies (EBPs) for children and adolescents. “Evidence-based” has many definitions and meanings in light of a large set of disciplines involved in their delineation, including clinical psychology, psychiatry, internal medicine, social work, public health, dentistry, law, and social policy. EBPs have been delineated by different professional organizations within and among countries (e.g., in the Americas, the European Union). Also, various private and public agencies are defining and delineating treatments that are considered to be evidence based. Perhaps the best-known resource in the United States that encompasses interventions for children, adolescents, and adults is provided by the Substance Abuse and Mental Health Services Administration (*http://nrepp.samhsa.gov/01_landing.aspx*). In relation to treatments for children, updates of evidence-based interventions are provided on a disorder-by-disorder basis as another ongoing resource (*http://explore.tandfonline.com/page/beh/hcap-evidence*). With many different parties, criteria for treatment selection, and resources that enumerate and review treatments, there is no single consensus definition of EBPs.[4]

For the most part, several criteria are commonly invoked to delineate an intervention as evidence based. These include at least two or more studies with the following:

1. Careful specification of the patient population.
2. Random assignment of participants to conditions.
3. Use of treatment manuals that document the procedures.

4. Multiple outcome measures (raters, if used, are naïve to conditions), including, of course, measurement of the problem or disorder targeted in treatment.
5. Statistically significant differences between treatment and a comparison group after treatment.
6. Replication of outcome effects, ideally by an independent investigator or research team.

There is little reason to make “evidence-based” categorical. One might consider evidence-based as a “spectrum,” very much along the lines of the diagnosis of many psychiatric disorders (e.g., depression, conduct disorder, autism) in which a single cut point is difficult to defend. The spectrum feature has been recognized early in developing and revising the criteria for evidence-based treatments with the use of qualifiers such as “promising,” “probably,” and “almost evidence-based or effective” (e.g., Chambless & Hollon, 1998; Chambless & Ollendick, 2001). Even so, the spectrum that is used also varies among different reviews of treatment (e.g., Nathan & Gorman, 2015). As to the empirical literature itself, whereas some of the EBPs have been replicated and supported in scores of trials, others have been so in just a few, so quality and quantity of the evidence could be used as the bases to separate or delineate treatments. In this book we are interested in presenting those treatments with strong empirical support in their behalf rather than drawing a line to classify them as evidence based or making an effort to place them on a spectrum. We present EBPs and feature exemplary programs of research to illustrate the substantive advances and methodological quality of the research on which these advances are based.

OVERVIEW OF ADVANCES FEATURED IN THIS VOLUME

Research on EBPs has made remarkable progress (Weisz et al., in press). In the period since publication of prior editions of this book (2003, 2010), programs of research that were well in place have expanded, new programs have emerged, new ways of administering treatment have been developed, and dissemination and implementation in clinical settings and across national boundaries have expanded enormously. The rich literature now encompasses many findings on processes, mediators, moderators, and outcomes; new applications of existing techniques; and new variations of treatments that might be disseminated more readily. Although this volume encompasses all these features, three characteristics of current research in child and adolescent psychotherapy are particularly noteworthy.

First, treatment research has addressed a wide range of social, emotional, and behavioral problems of childhood and adolescence. These are delineated as problems insofar as they are associated with distress and impairment in daily functioning. The range of such problems children experience is vast. Considering psychiatric diagnoses alone, there are a variety of clinical disorders that emerge in infancy, childhood, or adolescence (e.g., anxiety, depression, attention deficit, and disruptive behavior disorders; American Psychiatric Association, 2013; World

Health Organization, 2010). Indeed, most psychiatric disorders have their onset in childhood and adolescence (Kessler et al., 2005).

As EBPs have expanded, an increasing array of disorders and domains of child functioning have been addressed. The expansion is illustrated nicely in this volume by coverage of multiple problems, including anxiety disorders, mood disorders, attention-deficit/hyperactivity disorder, anorexia nervosa, enuresis, autism spectrum disorder, oppositional defiant disorder, conduct disorder, and substance abuse disorders. Interventions have been developed to evaluate different subtypes (e.g., obsessive–compulsive and posttraumatic stress disorders among the anxiety disorders), different levels of severity for given problems (e.g., oppositional and aggressive behavior among disruptive behavior disorders), and at different points in development (e.g., conduct problems in young children and adolescents). These different foci also draw on different modes of intervention (e.g., with child, parent, family, school, and neighborhood resources) to accommodate the problems that children and adolescents experience.

Second, increased attention has been accorded to developing and evaluating treatments with ethnically and culturally diverse children and families. Interventions are needed that are accessible and effective with diverse groups, not only for groups within our country or continent but as models that can address child and adolescent mental health needs worldwide. In North America (Canada, Mexico, United States), there are hundreds of ethnic and cultural groups; there are thousands when one moves to the world stage (*www.infoplease.com/ipa/a0855617.html*). Ethnicity and culture can influence symptom patterns, diagnosis, and prevalence rates of clinical problems, and diverse facets of treatment delivery (e.g., Chung et al., 2013; Lewis-Fernández & Aggarwal, 2013; Paniagua & Yamada, 2013). Many, but not all, treatments are effective across multiple ethnic groups (Miranda et al., 2005). Consequently, ethnicity and cultural issues need to be built into development and evaluation of evidence-based interventions (Bernal, 2006; Kazdin, 2008).

Advances in developing ethnically and culturally sensitive treatments are nicely illustrated in this volume. We have expanded this by addressing broader issues internationally. Research and the concern for applying evidence-based treatment are multinational. Resources in many countries draw on evidence to recommend techniques to use in clinical practice. A prominent example is the National Institute for Health and Care Excellence (NICE; *www.nice.org.uk*), an agency in the United Kingdom that reviews, selects, and recommends interventions based on the evidence for mental and physical health. The NICE guidelines are implemented nationwide. The globalization of research and use of evidence to guide treatment is more evident now than ever before. Chapters in this volume draw on exemplary research programs from many countries.

Third, research has focused on disseminating and implementing EBPs in clinical practice settings. There are many research questions in developing psychotherapies for children and more problems domains in need of attention. Even so, there are effective treatments available now that could make a difference in patient care and clinical outcomes if they could be extended to clinical training of mental health professionals and to those who are engaged in direct patient care. The challenges of implementation and dissemination are many and include transmitting both information and skills, increasing the scale of applications, and ensuring that disseminated treatments in fact improve clinical outcomes (e.g., Weisz, Krumholz, Santucci, Thomassin, & Ng, 2015; Weisz, Ng, & Bearman, 2014). Progress has been remarkable in implementation and dissemination of treatment, and several advances in the United States and other countries are illustrated in this volume. The implementation efforts reflect a range of treatments and models of dissemination. The topics include critical issues and obstacles to dissemination of effective treatment, guidelines for how treatments can be disseminated, and essential components to sustain treatment quality.

Although main features we have highlighted convey critical components of the book, the research is rich with other findings. For example, as EBPs were emerging, early concerns were voiced: perhaps the treatments could not be applied to children with multiple disorders (comorbidity) or they were not really effective with very severe cases, or severely impaired families might not respond, and other concerns of this ilk. Advances in research have continued to address these concerns empirically. As two among many examples, our own work has shown that factors such as comorbidity of disorders and complexity and stress in the family of clinically referred cases do not impede (or indeed even necessarily moderate) treatment outcome with EBPs (e.g., Doss & Weisz, 2006; Kazdin & Whitley, 2006). Research advances extend well beyond addressing concerns that were voiced when EBPs were delineated. For example, two areas of research covered in this edition are coverage of neuroscience and how that can inform the selection of treatment, and the burgeoning area of the use of technology (e.g., apps, smartphones, the Web, and social media) as a way to deliver treatments. Increasingly, neuroscience and neurobiological bases and correlates of clinical dysfunction are integrated with tests of treatment processes (e.g., Fisher et al., 2016; Kazdin, 2014). In addition, internet and more broadly technology based treatments are proliferating across the developmental spectrum (e.g., Andersson, 2016; Comer, 2015). We anticipate that both of these areas will continue to develop in the coming years.

GOALS OF THIS BOOK

This book presents psychotherapies for children and adolescents that have evidence in their behalf and illustrate the type of research that is needed to place treatment on a strong empirical footing. The chapters encompass many treatments that have been delineated as evidence based. However, as we mentioned earlier, we did not invoke a rigid set of criteria to delineate what would and would not be covered in the book. Rather, we selected interventions and programs of research that we felt would be exemplary and in which palpable progress has been made in controlled studies. As the reader will note, some of the chapters cover treatments that have been very well established in controlled trials and with multiple replications. This book is designed to highlight advances among such EBPs. In addition, we have presented treatments in various stages of development in which programmatic studies are well under way. Although the book is intended to display the rich yield from years of research, the process of programmatic research also is nicely illustrated throughout the chapters. The purpose of this feature of the book is to help researchers who are developing treatment and contemplating careers in intervention research by providing examples of ways to proceed in developing a research program.

The majority of chapters that follow are devoted to specific treatment techniques. For these chapters, contributors were asked to provide an overview of the clinical problem they have been studying, the model or underlying assumptions of treatment, and the goals of treatment. Chapters include details of the intervention, so the reader can discern the content of the treatment sessions, the sequence of material covered in the sessions, and the skills or tasks emphasized in treatment. Such details are not permitted in the usual publication outlets for research, such as journal publication, so we as readers are often persuaded that a given intervention might work but we do not really have a detailed idea of what the intervention entailed. Contributors were encouraged to describe the intervention and discuss how it was implemented, to mention what treatment manuals were used and are available, and to indicate who served as therapists and how they were trained and supervised, as well as other details.

Contributors were also asked to describe the scope of the evidence for their treatment. The contributors are seasoned investigators with extensive programs of research. Consequently, asking them to present the outcome results in a brief space ranges somewhere between cruel and unfair. Even so, contributors met the challenge and provided us with a concise statement of the outcome evidence for the treatment they have covered and the questions that research has addressed in relation to that treatment. The chapters provide a concise statement of what the treatment is, to whom it is applied, the evidence bearing on outcomes of the treatment, and key questions that remain to be researched.

Treatment advances have been complemented by the advances in scope, scale, and models of dissemination and implementation of treatment. Programmatic research on implementation and dissemination has become a high priority, even as further work is needed on developing novel treatments for problems without evidence-based treatments. Challenges and successes at dissemination are covered and raise issues that may well influence considerations to be taken into account at the stage of developing new treatments.

We have attempted to weave the chapters together by placing treatments and dissemination in multiple contexts and in relation to broader issues. Our introductory and concluding chapters, and chapters on development and ethical considerations, convey critical issues in relation to research and practice. Our concluding chapter also points to next steps to help ensure that the trajectory of advances moves to new heights.

We are delighted to note that EBPs, the range of disorders that can be treated, and the scope of dissemination efforts could not be comprehensively covered in this volume. Our delight stems from the fact that scientific progress has been outstanding; separate volumes could easily be justified on EBPs for internalizing or externalizing disorders, interventions with underrepresented groups, or for models of and evidence for dissemination of treatment. This volume draws on extraordinary work from each of these areas and conveys continued progress to place psychotherapies for children and adolescents on strong scientific footing.

NOTES

1. In this chapter, we use the term "children" or "child" to refer collectively to young children through adolescents; elsewhere in the book, the term "youth" is used in similar fashion. More fine-grained age distinctions in the book are made as applicable to specific interventions and investigations.

2. Tracing therapy back to Aristotle is not much of a stretch. Aristotle spoke about emotional states and how people suffering from emotional outbreaks can be cured by cathartic songs (*Politics* VIII 7.1342a4–16). Yet the connection is even more explicit in developing or charting a history of therapy. For example, Jacob Bernays (1824–1881, 1857), a relative of Freud by marriage, drew on Aristotle to note further that the cathartic benefits obtained via tragic drama are similar to a process of psychological healing.

3. The standards both for the reporting of individual studies and reviews of the intervention literature continue to evolve and improve as reflected both in the CONSORT and PRISMA criteria (Gardner et al., 2013; Grant, Mayo-Wilson, Melendez-Torres, & Montgomery, 2013; Moher, Liberati, Tetzlaff, Altman, & PRISMA Group, 2009; Moher et al., 2015). Also, for the first time, guidelines have been developed internationally to standardize the reporting and conduct of single-case research designs that focus on interventions (Tate et al., 2016). The SCRIBE guidelines (Single-Case Reporting Guideline In BEhavioural Interventions) will facilitate integration and review of intervention studies that are omitted from most evaluations of EBPs. For our purposes, the main point to note is that high standards are in place and continue to evolve not only to improve the quality of research but also to develop consistent standards internationally.

4. The effort to identify a uniform list of EBPs is partially obscured by different terms that are used. The two most discrepant terms are "evidence-based psychotherapies" (or "intervention") and "evidence-based practice." EBPs, the focus of our book, refer to the interventions or techniques (e.g., cognitive therapy for depression, exposure therapy for anxiety) that have been evaluated in controlled research trials. "Evidence-based practice" is a broader term that refers to clinical practice that is informed by evidence about interventions but, in addition, relies on clinical expertise and clinicians' views of a patient's needs, values, and preferences and their integration in decision making for the individual case (e.g., American Psychological Association Presidential Task Force on Evidence-Based Practice, 2006; Goodheart, Kazdin, & Sternberg, 2006; Westen & Bradley, 2005). In short, the evidence is based on the interventions; adapting and adopting them in clinical practice as filtered by clinical judgment may or may not produce effects demonstrated in research.

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PART II

TREATMENTS AND PROBLEMS

SECTION A

INTERNALIZING DISORDERS AND PROBLEMS

CHAPTER 2

Child-Focused Treatment for Anxiety

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OVERVIEW OF THE CLINICAL PROBLEM

Anxiety disorders are common in youth, with prevalence rates of 10–20%, and are associated with difficulties in academic achievement, social and peer relations, and future emotional health (Swan & Kendall, in press). Anxiety places children at increased risk for comorbidity and psychopathology in adulthood (Cummings, Caporino, & Kendall, 2014). Given the prevalence of and interference associated with the anxiety disorders, it is important that youth receive efficacious treatment.

One treatment program, *Coping Cat* (Kendall, 1990; Kendall & Hedtke, 2006a, 2006b), was developed at the Child and Adolescent Anxiety Disorders Clinic (CAADC) at Temple University and targets children ages 7–13 years. A teen program, the *C.A.T. Project,* is for adolescents (Kendall, Choudhury, Hudson, & Webb, 2002; by the way, the initials C.A.T. are left undefined, so the teen can create his or her own name). Representative of cognitive-behavioral therapy (CBT), the program has a treatment manual to guide the therapist and a workbook for use by clients. Both are tailored for youth with anxiety problems (e.g., separation anxiety disorder [SAD], generalized anxiety disorder [GAD], or social anxiety disorder [SocAD]) according to the fifth edition of the *Diagnostic and Statistical Manual of Mental Disorders* (DSM-5; American Psychiatric Association, 2013). Although the strategies in the treatment benefit children with a variety of anxiety disorders (e.g., phobias, obsessive–compulsive problems, posttraumatic stress), most evaluations of the protocol have addressed SAD, GAD and SocAD.

Many youth with anxiety disorders have comorbid conditions (e.g., attention-deficit/hyperactivity disorder [ADHD]). The CAADC accepts almost all comorbid conditions (we exclude youth with a psychosis or an IQ less than 80) provided that anxiety is the principal problem. Our assessment process determines whether anxiety is the problem, or whether treatment for another disorder should be recommended instead. Following a phone screen, parents and youth participate in separate in-person structured interviews. We rely on clinician severity ratings (CSRs) of interference and distress to determine the main problem. During treatment, the focus is on anxiety, but therapists adapt the program, within fidelity, to meet individual child needs. Research has indicated beneficial effects on some comorbid conditions in addition to the targeted principal anxiety diagnoses (Kendall, Brady, & Verduin, 2001).

CONCEPTUAL MODEL GUIDING THE TREATMENT PROGRAM

Anxiety is conceptualized as tripartite, involving physiological, cognitive, and behavioral components. Evolutionarily, anxiety is a normal and adaptive emotional response that serves a protective function by indicating when caution is warranted. Anxiety can even enhance performance, for example, by motivating test takers to study harder or athletes to perform better. All youth experience fear and anxiety as part of normal development. It is not uncommon for a young child to be afraid of the dark or to feel mild distress when separating from a parent, and anxiety regarding appearances and peer relationships is normal among teens. Too much anxiety, however, can cause distress and interfere with school, family, and peer relations. Youth who suffer from anxiety tend to perceive the world as an overly dangerous place. They live in near constant worry, which often is accompanied by physical symptoms such as headaches and stomachaches. They avoid situations that make them anxious, therefore reducing their distress temporarily, but this action ultimately serves to reinforce their avoidance and the anxiety.

The Coping Cat program targets the somatic, cognitive, and behavioral aspects of anxiety. Like most CBTs, this program includes psychoeducation, somatic management skills, cognitive restructuring, gradual exposure to feared situations, and relapse prevention plans. During the early stages of treatment, affective awareness is increased and corrective information about anxiety is provided, including normalization of the experience of anxiety. Youth are assisted in identifying different somatic reactions to anxiety (e.g., fast heartbeat, sweaty palms, upset stomach) and when anxious arousal is a false alarm. Somatic management techniques (e.g., relaxation procedures) are introduced as an adaptive response. Cognitive restructuring focuses on identifying and challenging maladaptive thoughts (self-talk) and shifting toward coping-focused thinking. Following the skills-building portion of treatment, graduated and controlled behavioral exposure to feared situations and stimuli is conducted. Exposure tasks comprise at least half of the program. Finally, relapse prevention plans are discussed, with a focus on consolidating and generalizing treatment gains over time.

CHARACTERISTICS OF THE TREATMENT PROGRAM

Coping Cat is a cognitive-behavioral intervention that helps youth with anxiety. The overall goal is not to eliminate all anxiety but to teach youth to recognize signs of anxious arousal and to implement strategies to better cope with the distress in their lives using the "FEAR plan" (discussed below). The program first focuses on skills training and then provides skills practice. For a summary of the sequence and content of specific sessions, see Table 2.1.

In individual treatment (Kendall, 1994; Kendall & Hedtke, 2006a; Kendall et al., 2002; Walkup et al., 2008), the therapist works primarily with the anxious youth (e.g., once a week, typically for 16 weeks) and meets with the parents on two planned occasions (i.e., to address issues regarding parents' response to the youth's anxiety and to inform parents of upcoming features of the treatment), as well as during weekly casual interactions. Meeting with the client individually provides an opportunity for the youth to trust and build a relationship with the therapist. Throughout the program, the therapist serves as a collaborative and supportive coach.

A key component of Coping Cat is practicing the application of anxiety management strategies in real, anxiety-provoking situations (i.e., exposure tasks; challenges). Youth start by applying the FEAR plan in low-anxiety situations, then practice it in higher-anxiety situations in a gradual progression that suits their needs.

The First Half: Building the FEAR Plan

Children learn a four-step "FEAR plan" to organize the psychoeducational content into problem-solving steps that help cope with anxiety. The Coping Cat manual guides the therapist through the sessions teaching the FEAR mnemonic (**F**eeling frightened?; **E**xpecting bad things to happen?; **A**ttitudes and Actions that might help; **R**esults and Rewards), while the *Coping Cat Workbook* parallels the treatment sessions provided by the therapist. The workbook is used by the youth both in and outside of session to facilitate involvement and ownership of the program, to provide fun activities, and to ensure effective communication of the various concepts. Youth are also able to reference the workbook and concepts at home when doing the homework assignments (Show That I Can [STIC] tasks).

Feeling Frightened?

In the first step, youth learn to ask "Am I feeling frightened?" to help them identify the physical symptoms associated with anxious arousal. These symptoms serve as cues to do something to address the anxiety. Relaxation is taught to help youth recognize that they do have control over physical reactions. In relaxation, the body's major muscle groups are sequentially tensed and relaxed to inform youth of states of tension and to use muscle tension as a cue to initiate relaxation. Youth are taught deep breathing in a similar fashion. The somatic sensations that accompany anxiety are specific to each youth, so awareness of the youth's unique responses permits targeting specific muscle groups. Pictures in the workbook, with guidance from the therapist, assist the youth in learning about "Feeling frightened?"

Relaxation is practiced via coping modeling and role plays. The therapist describes anxiety-provoking scenarios and models recognition of anxious feelings and accompanying somatic responses. The therapist demonstrates coping by taking deep breaths and relaxing muscles, describing what is being done step-by-step. The child tags along with the therapist during a similar sequence. Once the child

TABLE 2.1. Overview of the Sequence and Content of the Coping Cat Program for Anxious Children (and C.A.T. Project for Anxious Teens/Adolescents)

Session	Purpose of session
1	Build rapport; provide orientation and overview of the program; encourage the child's participation and verbalizations during sessions; Introduce STIC tasks and rewards; play a "Personal Facts" game; have some fun!
2	Talk about treatment goals; introduce **F** step: **F**eeling frightened? Identify different feelings and somatic responses to anxiety; normalize fear/anxiety; develop hierarchy of anxiety-provoking situations; play "Feelings Charades"; create a "Feelings Dictionary."
3	Review distinguishing anxious feelings from other feelings; learn more about somatic responses to anxiety; identify individual somatic responses to anxiety.
4 (parent session)	Provide information about treatment to the parents; give parents opportunity to discuss concerns and situations in which the child becomes anxious; provide ways in which parents may be involved.
5	Introduce relaxation training; review recognition of somatic cues; make version for child to practice at home; let child show skills to a parent.
6	Review relaxation training. Introduce **E** step: **E**xpecting bad things to happen? Use cartoons to identify self-talk; help child recognize anxious self-talk; help child generate less anxiety-provoking self-talk.
7	Review anxious self-talk and reinforce changing anxious self-talk into coping self-talk. Introduce **A** step: **A**ttitudes and **A**ctions that might help. Introduce cognitive strategies to manage anxiety; review relaxation training.
8	Introduce **R** step: **R**esults and **R**ewards. Introduce self-evaluation; review skills by putting steps together into the FEAR plan. Make a FEAR plan poster and a wallet-sized card with the FEAR mnemonic.
9 (parent session)	Explain second half of treatment; acknowledge that this portion of treatment may provoke greater anxiety; encourage parents to discuss concerns.
10	Practice the four-step coping (FEAR) plan under low anxiety-provoking conditions, both imaginal and *in vivo*.
11	Continue practicing skills for coping with anxiety in low-level imaginal and *in vivo* situations.
12	Practice skills for coping with anxiety in imaginal and *in vivo* scenarios that provoke moderate anxiety.
13	Practice skills for coping with anxiety in *in vivo* situations that produce moderate levels of anxiety.
14	Practice skills for coping with anxiety in imaginal and *in vivo* situations that produce high anxiety; begin planning "commercial."
15	Practice skills for coping with anxiety in situations that produce high anxiety; continue planning "commercial."
16	Final practice of skills for coping with anxiety in *in vivo* situations that produce high levels of anxiety; review and summarize the program; make plans with parents to help the child maintain and generalize newly acquired skills; bring closure to the therapeutic relationship; tape the "commercial"; award the certificate.

has learned some relaxation, parents are invited into the session so the child may teach the parents. For teens, the therapist also serves as a coping model, but this is typically less structured.

Expecting Bad Things to Happen?

A youth learns to ask whether he or she is "Expecting bad things to happen?" The youth's expectations are first identified, then questioned in an effort to reduce faulty beliefs ("cognitive restructuring"). To modify maladaptive expectations ("anxious self-talk"), the therapist helps the youth identify negatively biased self-statements. Together, the youth and therapist evaluate the evidence for and against the anxious self-talk. New expectations are then established using coping self-talk as a framework to replace the anxiety-producing misinterpretations.

Youth are not known for their willingness to tell adults what they are thinking and may not be aware of their thoughts. To assist, the therapist introduces the idea of self-talk using cartoons with empty thought bubbles (included in the workbook). The therapist describes nonstressful situations and asks the youth to provide examples of thoughts that might accompany the events. The youth is then asked to develop different sets of possible thoughts for more ambiguous situations. The youth and therapist fill in the possible thoughts for the different cartoon situations before the youth's own thoughts are targeted for change. The concept of self-talk is expanded to anxiety-provoking situations, progressing from low to high anxiety.

Modeling and role playing help the youth practice the skill of identifying and challenging anxious self-talk. The goal is not to completely eradicate perceptions of stress but rather to teach the youth to recognize and change unfounded perceptions of stress to more realistic perceptions. The emphasis is not on teaching positive self-talk but on identifying and reducing negative self-talk. Cognitive restructuring (i.e., changing self-talk) has been associated with improvements in anxiety (Peris et al., 2015; Kendall & Treadwell, 2007).

Attitudes and Actions That Might Help

The third step—"Attitudes and actions that might help"—is taught as problem solving. The goal is to develop the youth's confidence in his or her ability to meet daily challenges. The therapist points out that it might be helpful to take some action that will help change the anxious situation or the reaction to it. Problems are presented as a part of everyday life, and the therapist encourages the youth not to rely on initial reactions that might be maladaptive. Instead, the youth is asked to define the problem and generate solutions for the problem without initial evaluation. Next, each solution is evaluated for possible outcomes; one is selected and a plan is made to try it out. Throughout this step, the therapist models problem solving and asks the child to tag along. Teens can be granted autonomy in the decision-making process and may not need to tag along. Skills are practiced in session under conditions that involve gradually increasing degrees of anxiety, and the therapist has the youth try out and record (in the workbook) problem solving in situations outside of session.

Results and Rewards

"Results and Rewards" is based on self-monitoring and contingent reinforcement. Approach behavior is strengthened and anxious behavior is reduced through shaping and positive rewards. Some youth with anxiety have self-doubting thoughts, low self-confidence, or exceptionally high standards of achievement and are unforgiving if they fail to meet these standards. The therapist addresses these maladaptive expectations by rewarding the youth for effort (for partial successes). Perfection is not an option and is never expected.

For the young child, the therapist may introduce self-rating and reward by describing a "reward" as something that is given when someone is pleased with work that was done (e.g., parental evaluation and rewards). For adolescents, the therapist introduces self-rating by describing how a teen can decide whether he or she is satisfied with his or her own work. Once self-monitoring/self-rating is understood, the therapist provides opportunities for the youth to practice making self-ratings and rewarding him- or herself for effort. The therapist uses coping modeling and role plays to demonstrate self-rating and self-reward.

The Second Half: Exposures and Practice

The second segment is devoted to the application of the FEAR plan within exposure (imaginal and *in vivo*) to increasingly anxiety-provoking situations. The youth is placed in situations that are fear evoking and cause distress, and is coached to employ coping strategies and become accustomed. The program uses graduated exposure: The youth moves up a hierarchy of anxiety-provoking situations as determined by his or her anxiety level. When the youth experiences anxiety during exposure tasks, it is important that his or her anxiety level not be so high as to facilitate avoidance. For all exposure tasks, the therapist collaborates with the youth to make sure that he or she understands the situation, ways to cope, and the intended goal of the experience. Following the onset of exposure sessions, the youth shows significant improvement in anxiety (Peris et al., 2015).

The design of situations presented to each youth is based on the youth's particular fears/worries (as assessed during sessions and the collaborative development of the hierarchy). Initially, minimally stressful imaginal and/or *in vivo* exposures are used. As the youth increases his or her ability to cope in these situations, future sessions gradually increase the level of anxiety experienced in imaginal and/or *in vivo* experiences. For example, a child with social anxiety initially may merely have to greet a stranger, whereas a later task may require that he or she purchase a chosen snack from a food vendor. Exposure tasks need not be of long duration, and several can be arranged for one session, but it is important for the youth to complete the exposure.

When nearing the completion of the program, the youth creates a product or "commercial" (e.g., video, booklet) summarizing his or her experiences that can help other children and teens manage anxiety. This gives the youth a chance to be the expert, demonstrates what the youth has learned, and provides an opportunity for him or her to share what has been accomplished to reinforce treatment-produced gains.

Parental Involvement

Parental involvement in treatment is integral. Consistent with this, the Coping Cat program has a parent companion book (Kendall, Podell, & Gosch, 2010) that provides an overall description, as well as a session-by-session guide for parents/caregivers. An online parent training program, Child Anxiety Tales (available at *www.copingcatparents.com*), provides modules with activities that help parents reduce anxiety in their child. Although, the Coping Cat program focuses on helping the individual child to think and behave differently, parents nevertheless play a role.

Parental involvement in treatment can vary from being consultants (e.g., provide information), collaborators (e.g., assist with the child's acquisition of coping skills), or co-clients (e.g., learn to manage their own anxiety). Parents are important collaborators in determining accurate diagnoses and in ensuring the child's participation. Therapists also meet individually with the parents for two sessions (i.e., one during the skills-building phase and the other just before beginning exposures), and as needed, to collaborate on treatment plans, maintain cooperation, and discuss concerns. Specific ways that the parents can foster positive outcomes are discussed (e.g., addressing accommodation). Parents of anxious youth often experience anxiety themselves, and many employ less successful parenting techniques. Such parents may require additional coaching to promote brave behavior rather than acting in ways that inadvertently maintains their child's anxiety (e.g., anxious modeling, parental accommodation).

Flexibility within Fidelity

Critics of manual-based treatment often assume that manuals involve a prearranged and rigid approach to treatment, precluding therapist individuality. However, such assumptions are unwarranted: there is a rational middle ground between the complete freedom of an unstructured treatment and rigid adherence to a manual. This middle ground consists of using the manual as a guide, yet allowing treatment to be vibrant and alive. Practitioners are best prepared to achieve flexible applications of manual-based treatments when there is an understanding of the treatment on multiple levels, including the model on which the treatment is based and the elements involved in implementation.

The Coping Cat program can be used with necessary fidelity and desired flexibility. The model/strategy (cognitive change and behavioral exposure tasks) drives the treatment, not specific sentences or exact techniques. However, affective and educational factors affect the therapeutic relationship and the child's involvement in treatment (a variable that is influenced by a lively, flexible manual and an engaging therapist), which are associated with overall progress (Chu & Kendall, 2004; Podell et al., 2013). We assign a key role to child involvement, and encourage therapists to adapt the treatment goals to the needs/interests of the child. There are many opportunities for such flexibility within fidelity (see Kendall, Gosch, Furr, & Sood, 2008, for descriptions of flexible applications). A child may modify the acronym FEAR to his or her own liking. One child completing the program transformed the FEAR plan into a military-inspired "scouting, intelligence, battle, and recon" plan. Flexibility can also include schedule adjustments and tailoring the treatment (e.g., length, parental involvement, session content, delivery method; described below).

EVIDENCE ON THE EFFECTS OF TREATMENT

We summarize the results of research evaluating the Coping Cat program with anxious youth. Drawing on the foundations provided by the American Psychological Association Task Force on Psychological Intervention guidelines, a scheme was created to determine when a psychological treatment for a specific problem or disorder may be considered to be efficacious or possibly efficacious. According to their system, a treatment may be considered efficacious (i.e., established) or possibly efficacious (i.e., promising but in need of replication) if it has been shown to be more effective than no treatment, a placebo, or an alternative treatment across multiple trials conducted by different investigative teams. Treatments that meet these criteria, except for replication or independent replication, are designated as probably efficacious. According to recent reviews (e.g., Hollon & Beck, 2013), the Coping Cat program has been deemed efficacious.

Randomized Clinical Trials

Since the initial evaluation of the Coping Cat program (Kane & Kendall, 1989), several randomized controlled trials (RCTs) have been conducted (Kendall, 1994; Kendall et al., 1997; Kendall, Hudson, Gosch, Flannery-Schroeder, & Suveg, 2008; Walkup et al., 2008). Initial evaluations compared 16 weeks of Coping Cat to wait-list control conditions (Kendall, 1994; Kendall et al., 1997). In the first (Kendall, 1994), youth who received treatment evidenced greater improvement from pre- to posttreatment than the wait-list control. Additionally, 64% no longer met criteria for their principal anxiety diagnosis (i.e., DSM-III [American Psychiatric Association, 1980] criteria for overanxious disorder [OAD] or avoidant disorder [AD]), compared to only 5% of youth in the wait-list control group. Treatment gains were maintained over a 1-year (Kendall, 1994) to 3.5-year follow-up (Kendall & Southam-Gerow, 1996). The second RCT (Kendall et al., 1997) replicated these findings: 50% of treated patients were free from their principal anxiety disorder at posttreatment, and those who were not showed significant reductions in anxiety severity. Gains were again maintained at 1-year follow-up (Kendall et al., 1997), over a 7.4-year follow-up (Kendall, Safford, Flannery-Schroeder, & Webb, 2004), and at 16.2-year follow-up (Benjamin, Harrison, Settipani, Brodman, & Kendall, 2013). A 7- to 19-year follow-up found that successfully treated youth had significantly less suicidal ideation than treatment nonresponders (Wolk, Kendall, & Beidas, 2015).

The Child–Adolescent Anxiety Multimodal Study (CAMS; Walkup et al., 2008) compared Coping Cat (CBT), medication (sertraline [SRT]), their combination (COMB), and pill placebo (PBO). This multisite trial included 488 children (ages 7–17 years) with principal anxiety disorders (i.e., GAD, SAD, social phobia [SP]). Results indicated that 80% of youth who received COMB were found to be much or very much improved at posttreatment, which was greater than the monotherapies. Both Coping Cat (60%) and medication (55%) were also significantly better than placebo (24%). It is possible that the synergistic effects of the COMB treatment could account for the increased efficacy, but the authors report that there was also greater contact time in the COMB therapy, which cannot be ruled out as a possibility for greater response.

Modifications to Coping Cat

A family-based Coping Cat (Howard, Chu, Krain, Marrs-Garcia, & Kendall, 2000) increases parental involvement. The family-based treatment (family CBT [FCBT]) used the same protocol as the child-focused treatment (individual CBT [ICBT]) except that all sessions included the parents. One trial compared ICBT, FCBT, and a family-based education–support–attention (FESA) condition in youth less than 3 years old with a principal anxiety diagnosis (SAD, GAD, SP; Kendall, Hudson, et al., 2008). Although children across conditions evidenced treatment gains, results indicated that the ICBT and FCBT conditions outperformed the FESA condition in reducing the youth's anxiety. ICBT outperformed both family treatments on teacher reports of child anxiety, whereas FCBT outperformed ICBT on child reports of anxiety when both parents had an anxiety disorder. Treatment gains were maintained at l-year follow-up.

A group Coping Cat (group CBT [GCBT]) was compared to ICBT and wait-list control (Flannery-Schroeder & Kendall, 2000). When diagnostic status was considered, GCBT and ICBT demonstrated greater remission rates of principal anxiety diagnosis (50 and 73%, respectively) than wait-list control (8%), and they did not different from each other. However, only children receiving ICBT showed significant improvements on self-report measures of anxious distress. At 3-month follow-up assessment, treatment gains were maintained.

In emotion-focused Coping Cat (emotion-focused CBT [ECBT]; Kendall & Suveg, 2005), emotion recognition, emotion understanding, and emotion regulation regarding anxiety and other emotions were integrated into the psychoeducation sessions. Additionally, exposure tasks included exposure to situations that elicit other emotions (e.g., sadness, guilt), as well as anxiety. A pilot study examined the outcomes of six children (ages 7–13 years) with principal anxiety disorders (i.e., GAD, SAD, or SP) who received ECBT (Suveg, Kendall, Comer, & Robin, 2006). At posttreatment, all children showed a decrease in anxiety severity, 83% evidenced an increase in their awareness of emotional experiences, use of emotion-related language, and understanding of hiding and changing emotions, and all demonstrated a decrease in their emotional inflexibility and dysregulated negative affect (Suveg et al., 2006). When comparing ECBT to standard Coping Cat in youth with SAD (Afshari, Neshat-Doost, Maracy, Ahmady, & Amiri, 2014), the two treatments showed equal improvement in anxiety severity. ECBT showed improved anger regulation and coping. ECBT showed improved sadness regulation at posttreatment, but both treatments were comparably effective at 3-month follow-up (Afshari et al., 2014).

Coping Cat has been modified into a brief, eight-session version (brief CBT [BCBT]; Beidas, Mychailyszyn, Podell, & Kendall, 2013; Crawley et al., 2013). In BCBT, components of psychoeducation deemed nonessential (e.g., relaxation training) were removed. The first three sessions (and half of the fourth session) teach psychoeducation (recognizing somatic symptoms, identifying and challenging anxious self-talk, problem solving, and self-evaluation/rewards) and the remaining four and a half sessions focus on exposure tasks (Beidas et al., 2013). In the initial study, BCBT was efficacious in reducing anxiety, with gains maintained, and even improved, at 1-year follow-up. The treatment was perceived as acceptable and feasible by clinicians and families (Crawley et al., 2013).

A computer-assisted version of the Coping Cat program is for youth ages 7–13 years (*Camp Cope-A-Lot* [CCAL]; Kendall & Khanna, 2008a, 2008b). Computer-assisted CBT offers an efficient, cost-effective, and community-friendly method of service delivery (Khanna & Kendall, 2007). CCAL combines the empirically supported CBT protocol with interactive computer-based training with audio, animations, photographs, video, schematics, and a built-in reward system. CCAL (*www.workbookpublishing.com*) is a 12-level program designed to be completed over 12 weeks, with the participant completing one level per week. The first six levels, which the user completes independently or with a "coach," are skills building, as in Coping Cat; the remaining six levels, completed with the assistance of a "coach," consist of exposure tasks in anxiety-provoking situations. CCAL is geared for a variety of mental health professionals who work in a range of community settings (i.e., schools, training programs, community clinics).

Several trials have evaluated CCAL. Khanna and Kendall (2010) compared CCAL, ICBT, and computer-linked education, support, and attention (CESA). At posttreatment and at 3-month follow-up, CCAL and ICBT showed similar, significant improvements in anxiety; they did not differ from each other and were significantly better than CESA (Khanna & Kendall, 2010). CCAL was evaluated in community mental health centers and demonstrated efficacy (Crawford et al., 2013; Storch et al., 2015). When compared to treatment as usual, CCAL showed greater reductions in anxiety severity and gains that were maintained at 1-month follow-up (Storch et al., 2015). Additionally, CCAL was found to be acceptable and feasible to families, clinicians, and community center administrators (Salloum, Crawford, Lewin, & Storch, 2015).

Variables That Potentially Affect Treatment Outcome

Research findings have established Coping Cat, and its associated programs, as efficacious treatment for youth anxiety. Despite the high response rate, not all youth experience sufficient improvement, and there is interest in identifying variables that may be associated with differential outcomes.

Child Factors

DEMOGRAPHIC VARIABLES

Research has not found demographics (e.g., gender, ethnicity, age) to be significant predictors of differential outcomes. A study by Kendall, Hudson, Gosch, Flannery-Schroeder, and Suve (2008) found no gender differences between ICBT, FCBT, and a control condition. Though few studies have examined the role of race in treatment outcome, those that have found that race did not predict response rate (e.g., Compton et al., 2014; Southam-Gerow, Kendall, & Weersing, 2001; Treadwell, Flannery-Schroder, & Kendall, 1995). Similarly, a recent review found no difference in treatment outcome between children and adolescents (Kendall & Peterman, 2015). One study comparing treatment completers to those who dropped out or refused treatment found that noncompleters were more likely to live in a single-parent household, be members of an ethnic-minority group, and have less anxious symptomatology per child report than treatment completers.

SYMPTOM SEVERITY

Research indicates that youth with higher anxiety severity ratings at pretreatment experience similar gains in treatment to youth with lower pretreatment anxiety severity (e.g., Walkup et al., 2008). Though some data indicate that youth with more severe anxiety experience higher levels of posttreatment anxiety (e.g., Garcia et al., 2010), other data indicate that youth with higher levels of pretreatment social anxiety report greater posttreatment reductions (Kley, Heinrichs, Bender, & Tuschen-Caffier, 2012).

COMORBIDITY

Though a number of studies indicate that the presence of comorbid diagnoses in general does not affect treatment gains (e.g., Rapee, 2003), research suggests that the presence of certain comorbidities may play a role. Youth with a comorbid non-anxiety disorders have higher posttreatment anxiety than those without a comorbid anxiety disorder (Liber et al., 2010). Anxious youth with higher parent-rated autism spectrum symptoms have been found to be less engaged in ICBT compared to FCBT (Puleo & Kendall, 2011), which suggests that certain comorbid disorders may require increased parental involvement. Several studies have found that anxious youth with and without comorbid behavioral disorders make similar gains in treatment (e.g., Rapee, 2003), though youth with comorbid ADHD have been reported to have reduced maintenance of treatment gains (Halldorsdottir et al., 2013). Findings on the influence of comorbid depression are mixed, though one study indicated that youth with comorbid depression *diagnoses* demonstrated similar treatment response to those without a comorbid diagnosis, whereas *symptoms* of depression on a self-rated continuous measure did predict reduced treatment outcomes (O'Neil & Kendall, 2012).

Parent Factors

PARENTAL INVOLVEMENT

Studies have examined the role of parental involvement in treatment—with mixed results. Some data suggest that including parents as co-clients in treatment sessions is not essential for positive gains for anxious youth. A review of nine outcome studies of CBT for anxious youth found effect sizes to be comparable regardless of parental involvement (Barmish & Kendall, 2005), and a meta-analysis found that CBT with an added parental component did not outperform ICBT (Spielmans, Pasek, & McFall, 2006; see also Manassis et al., 2014). However, Bodden et al. (2008) found that more youth responded to treatment in ICBT (53%) compared to FCBT (28%), though differences abated by 3-month follow-up. The Coping Cat includes parents, so the benefits of increased parent involvement may vary based on the specific additional treatment. The added benefit may accrue when the specific parental factors that contribute to or maintain the child's anxiety are the target (Wei & Kendall, 2014).

PARENTAL PSYCHOPATHOLOGY

Parental psychopathology has been implicated in treatment outcomes. Parents with an anxiety disorder may benefit from increased involvement in treatment, because it may provide an opportunity to directly address factors that are maintaining the youth's anxiety. However, results supporting this hypothesis have been mixed. Although one study found FCBT to outperform ICBT in reducing youth anxiety in families with two anxious parents (Kendall, Hudson, et al., 2008), another study found FCBT to be significantly more likely to benefit youth with nonanxious parents (Bodden et al., 2008). Some evidence suggests that the inconsistencies may be due to a differential effect of parental psychopathology across development: Parents' symptoms may impact treatment for younger children but not adolescents (e.g., Bodden et al., 2008; Berman, Weems, Silverman, & Kurtines, 2000). However, others have found the reverse, with treatment response moderated by parental symptoms only in adolescents (Legerstee et al., 2008).

FAMILY FACTORS

Some researchers reported that family dysfunction, parental frustration, and parenting stress at baseline predicted reduced treatment response (e.g., Crawford & Manassis, 2001; Victor, Bernat, Bernstein, & Layne, 2007), though it is unclear whether this holds true for both individual and family treatment. In CAMS, parent-rated family dysfunction improved significantly from pre- to posttreatment for all treatment responders regardless of condition, but this change in dysfunction had no moderating effect on treatment outcome (Compton et al., 2014). Given the limited number of studies, it is still unclear exactly what role family factors may play in treatment outcome.

In-Session Variables

Within the treatment of anxiety in children and adolescents, Subjective Units of Distress Scale (SUDS) ratings are frequently used, especially during exposure tasks (e.g., Kendall & Hedtke, 2006a). The magnitude of change in SUDS ratings as reported by youth during exposure tasks has been associated with treatment outcome, with those showing greater reductions in SUDS over the course of the exposure having better outcomes. The SUDS scores, on average, were halved over the course of the exposure (Benjamin, O'Neil, Crawley, Beidas, Coles, et al., 2010).

The therapeutic relationship, or alliance, has been associated with treatment outcome, with a better therapeutic relationship predicting better outcomes

(Cummings et al., 2013). Of note, although it has been suggested that exposure tasks may negatively impact the therapeutic alliance, the data do not support this belief. When the patterns of alliance ratings for treatments, with and without exposure tasks, were compared, results did not indicate a rupture in therapeutic alliance. Indeed, therapist, child, and parent ratings indicated significant growth in alliance regardless of the use of exposure tasks (Kendall et al., 2009). Therapist style has been shown to influence alliance and treatment outcomes: Youth who have a therapist who shows greater collaboration (e.g., showing warmth and making collaborative goals) demonstrate greater treatment outcomes (Podell et al., 2013). On the other hand, youth with therapists who show more of a directive, "teacher" style and who "push the youth to talk too soon" do not do as well (Creed & Kendall, 2005).

Youth behaviors within-session may be linked to outcomes. For instance, youth demonstrating greater involvement and engagement during sessions show improved outcomes (Chu & Kendall, 2004), especially when they show greater engagement during the exposure sessions (Crawford, Kendall, Gosch, Compton, Olino, et al., 2016). Additionally, youth showing safety-seeking and avoidance of therapy tasks and topics during sessions show less robust outcomes (Hedke, Kendall, & Tiwari, 2009). A youth's negative self-talk (but not positive self-talk) significantly predicted anxiety level, and changes in self-talk predicted improvement in anxiety (Treadwell & Kendall, 1996; Kendall & Treadwell, 2007). The finding that treatment-produced gains were mediated by reductions in the children's negative self-talk underscores the power of non-negative thinking. In addition, changing a youth's sense of self-efficacy (the belief "I can handle it") has been found to mediate treatment gains (Kendall et al., 2016).

FUTURE DIRECTIONS

The development and evaluation of the treatment reported herein began in 1984. Much has been accomplished, but we have a way to go. The CAADC continues to examine (1) the factors that facilitate the transportability of Coping Cat into the community, (2) the efficacy and effectiveness of computer-assisted adaptations (i.e., CCAL) and brief versions of Coping Cat, (3) the specific components of treatment that are most associated with positive outcomes, (4) the long-term functional outcomes for successfully treated youth, (5) the optimal role of parents, and (6) the role of medications in the overall treatment of anxiety disorders in youth.

Once an intervention has been found to have efficacy with regard to outcomes (see also Silverman, Pina, & Viswesvaran, 2008), it is fruitful to consider how best to help those youth who do not respond favorably. Advances may be found in (1) the addition of booster sessions and further contacts, (2) considering developmental factors (cognitive, social, emotional) that may help to individually tailor treatment, and (3) getting to know more about how nonanxious youth manage their unwanted distress. Some of the processes involved in normal adjustment to anxious arousal may contribute meaningfully to the further refining of our current program.

CONCLUDING COMMENTS

Anxiety disorders in youth are interfering, detrimental, and prevalent forms of psychological distress. Using appropriate methodologies, CBT has been found to have a favorable record of success in treating anxious youth, including those youth who have a high incidence of comorbid conditions.

The Coping Cat program and its adaptations build a positive therapeutic alliance and educate children/teens and their parents about the normality of anxiety. the signs of anxiety, anxious and coping self-talk, skills to reduce anxious arousal, and problem solving. The second half of this treatment relies on the hierarchical use of exposure tasks to address anxious distress. The main features of the educational phase are summarized with a four-step FEAR plan, which is implemented and practiced during exposures. The therapist is active, and serves as a coping model who appropriately self-discloses and arranges challenging *in vivo* exposure tasks for the youth. Roughly two-thirds of those children and adolescents treated, including youth of both genders, various ethnicities, and those with several principal anxiety disorders, experience meaningful benefits.

Additional scientific investigations are needed to improve the treatment for those who, to date, have not been positive treatment responders. This may include how to better tailor treatment to individual needs (e.g., in-session factors). Finally, there is a need for a greater understanding of the role of developmental factors (e.g., cognitive, social, emotional) in the nature and treatment of anxiety disorders in children and youth. The CAADC and other sites will continue their research in these efforts to alleviate anxiety disorders in youth.

ACKNOWLEDGMENTS

The research reported in this chapter was supported by grants from the National Institutes of Health (Nos. MH63747, MH59087, MH64484, MH067481, and MH086438).

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CHAPTER 3

Treating Pediatric Obsessive–Compulsive Disorder in Children

Using Exposure-Based Cognitive-Behavioral Therapy

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OVERVIEW OF THE CLINICAL PROBLEM

At any given time, up to 1 in 100 children and adolescents suffer from clinically significant obsessive–compulsive disorder (OCD; e.g., Flament et al., 1988), and up to one-half of adults with OCD developed the disorder during childhood or adolescence (Rasmussen & Eisen, 1990). OCD is defined by the presence of obsessions and/or compulsions that interfere with daily functioning (American Psychiatric Association, 2013). "Obsessions" are recurrent thoughts, urges, or images that are experienced as intrusive and cause significant distress. Common examples of obsessions are intrusive thoughts of harming a loved one or worries that touching a doorknob will lead to becoming contaminated with dangerous germs, although obsessions can be related to any type of subject matter. "Compulsions" are repetitive behaviors or mental acts completed in response to an obsession in an attempt to prevent or reduce associated distress. Asking for reassurance that one will not harm a family member or washing one's hands repeatedly after touching a door knob would be examples of possible compulsions related to the previously mentioned obsessions.

OCD in children and adolescents is associated with impaired functioning within home, school, and social settings (Piacentini, Bergman, Keller, & McCracken, 2003). Left untreated, OCD often continues until adulthood and is associated with negative consequences, including additional psychiatric diagnoses and poorer quality of life (Micali et al., 2010). Thus, besides reducing morbidity and functional impairment associated with pediatric OCD in childhood, improvements in treatment and in making empirically supported treatments more readily available have the potential to reduce OCD symptoms and related dysfunction into adulthood.

CONCEPTUAL MODEL GUIDING THE TREATMENT PROGRAM

Exposure and Ritual Prevention

As applied to OCD, the exposure principle relies on the fact that anxiety usually attenuates after sufficient duration of contact with a feared stimulus that is not inherently dangerous. Thus, a child with fear of germs must confront fear-evoking but objectively low-risk situations and allow his or her anxiety to decrease naturally over time. Repeated exposure is associated with decreased anxiety across exposure trials (between-session habituation), with anxiety reduction largely specific to the domain of exposure, until the child no longer fears contact with specifically targeted phobic stimuli. Adequate exposure depends on blocking the negative reinforcement effect of rituals or other avoidance behavior, a process termed "response or ritual prevention." For example, a child with germ worries must not only touch "germy things" but must also refrain from ritualized washing until his or her anxiety diminishes substantially. Exposure and ritual prevention (ERP) is typically implemented in a gradual fashion (sometimes termed "graded exposure"), with exposure targets developed in an interactive process between patient and therapist. Intensive approaches may be especially useful for treatment-resistant OCD or for patients who desire a very rapid response (Franklin et al., 1998; Storch, Geffken, Merlo, Mann, et al., 2007).

Cognitive Techniques

A variety of cognitive interventions have been used to provide the child with a "toolkit" to facilitate compliance with ERP. The goals of such interventions, which may be more or less useful or necessary depending on the child and the nature of his or her symptoms, typically include increasing a sense of personal efficacy, predictability, controllability, and self-attributed likelihood of a positive outcome within ERP tasks. Specific interventions include (1) constructive self-talk and "bossing back OCD," and (2) cultivating nonattachment or, stated differently, simply learning to notice obsessions, then allow them to come and go of their own accord instead of engaging in inherently futile thought suppression attempts. Each of these discussions must be individualized to match the specific OCD symptoms that afflict the child, and must mesh with the child's cognitive abilities, developmental stage, and individual differences in preference among the two techniques. Such methods are routinely incorporated into ERP programs, wherein cognitive procedures are used to support and complement ERP rather than to replace it (Franklin & Foa, 2008).

Of critical importance is emphasizing the futility of thought suppression efforts of any kind, including distraction, since these efforts yield negative reinforcement and are therefore likely to provide only temporary relief, while simultaneously strengthening the connection between obsession and compulsion. In trying to underscore this point in a developmentally sensitive manner, we tell our pediatric patients that we want them to change their approach to their obsessions by learning how to "let them go away instead of trying to make them go away." We have an expectation based on outcome studies and experimental data that by eliminating efforts to make bad thoughts and anxiety go away, a reduction in the frequency and intensity of these obsessions will likely follow eventually. However, we take care to deemphasize in treatment the goal of living "obsession-free," and instead emphasize the importance of refraining from rituals and avoidance behaviors when obsessions do arise. We teach our patients, and their families, that the *response* to the obsession is far more relevant than whether or not an obsession is present; responding by "leaning into" the fear rather than away is associated with better functioning, weakening of OCD, and, more likely than not, a reduction in the frequency and intensity of obsessions and associated distress in the long run.

Ritual Prevention

Because blocking rituals or avoidance behaviors remove the negative reinforcement effect of the rituals or avoidance, ritual prevention technically is an extinction procedure. By convention, however, "extinction" is usually defined as the elimination of OCD-related behaviors through removal of parental positive reinforcement for rituals. For example, for a child with reassurance-seeking rituals, the therapist may ask parents to refrain from providing the child with reassurance in response to an OCD-specific question. Extinction frequently produces rapid effects but can be difficult to implement when the child's behavior is bizarre (e.g., screaming out "God forgive me!" in response to obsessional thoughts about the devil, regardless of the social context) or occurs very frequently (e.g., asking "Am I OK?" repeatedly). In addition, nonconsensual extinction procedures often produce unmanageable distress on the part of the child, disrupt the therapeutic alliance, miss important ERP targets that are not amenable to extinction procedures and, most importantly, fail to help the child internalize a strategy for resisting OCD. Thus, as with the rest of the ERP plan, placing the extinction of reassurance under the child's control leads to increased compliance and improved outcomes, and we provide ample coaching and role-playing examples in session to teach parents and children how to weaken OCD by depriving it of this important source of fuel.

Operant Procedures

Clinically, positive reinforcement seems not to alter OCD symptoms directly, but rather helps to encourage compliance with ERP procedures and thereby produces a noticeable, if indirect, clinical benefit. In contrast, "punishment" (defined as imposition of an aversive event) and "response–cost" (defined as removal of a positive event) procedures have shown themselves to be unhelpful in the treatment of OCD. Most cognitive-behavioral therapy (CBT) programs use liberal positive reinforcement for compliance with ERP tasks and proscribe aversive contingency management procedures unless targeting disruptive behavior outside the domain of OCD. Since OCD itself is a powerful aversive stimulus, successful ERP promotes willingness to engage in further ERP via negative reinforcement (e.g., reduction of OCD symptoms boosts compliance with ERP) as manifested by unscheduled generalization to new ERP targets as treatment proceeds.

Involvement of the Family in OCD, and in Treatment

Family psychopathology is neither necessary nor sufficient for the onset of OCD; nonetheless, families affect and are affected by the disorder. More specifically, it appears that family accommodation to the child's OCD symptoms is the norm (Merlo, Lehmkuhl, Geffken, & Storch, 2009; Peris et al., 2008; Storch, Geffken, Merlo, Jacob, et al., 2007), and that family conflict and comorbid externalizing symptoms are worse when families attempt to refrain from accommodation (Peris et al., 2008). Hence, although dismantling studies in pediatric OCD have yet to indicate clearly the optimal amount of family involvement necessary for robust and durable symptom reduction, clinical observation suggests that some combination of individual and family sessions is best for most patients ages 9 or older. In our protocol we include several sessions that involved the whole family, and typically include the family at the end of each session in order to ensure that the parent and child both understood the ERP homework assignment and their respective roles in implementing it. Some investigators have emphasized family work even more in the development of their CBT protocols (e.g., Peris & Piacentini, 2013; Piacentini, Bergman, Jacobs, McCracken, & Kretchman, 2002; Piacentini et al., 2011) and, in one study, group family CBT was as effective as individual CBT at reducing OCD symptoms (Barrett, Healy-Farrell, & March, 2004). With younger patients, the role of the family in the OCD process and in treatment is larger; our work with very young children with OCD includes parents as part of every session and essentially teaches parents to conduct ERP with their children (Freeman et al., 2007, 2008, 2014; Freeman & Garcia, 2008).

CHARACTERISTICS OF THE TREATMENT PROGRAM

Assessment

Treatment of OCD in youth should begin with proper assessment, including (1) a comprehensive evaluation of current and past OCD symptoms; (2) current OCD symptom severity and associated functional impairment; and (3) comorbid psychopathology. In documenting OCD symptoms and severity, it is important to determine whether the child should be interviewed with or without the parent present. The decision can be informed by discussing the alternatives with the parent in advance, observing the child and family's behavior in the waiting area, and even during the interview itself, if necessary. For example, if it becomes clear that a patient is reluctant to discuss certain symptoms with a parent present (e.g., sexual or extremely violent obsessions), the clinician can save time at the end of the interview to revisit these potentially sensitive issues alone with the patient.

Prior to initiating the formal assessment, the evaluator should define obsessions and compulsions, using specific examples if the child and/or the parent has difficulty grasping the key concepts. We also let family members know about the prevalence, nature, and treatment of OCD, which may increase their willingness to disclose specific symptoms once the semistructured interview begins. Children may be particularly vulnerable to feeling as if they are the only ones suffering from certain obsessive fears, such as intrusive images of hurting a loved one, so prefacing examples with “I once met a kid who . . .” to allay this concern right away may improve the quality of the assessment.

Five Phases of Treatment

Our pediatric OCD treatment protocol (Franklin, Foa, & March, 2003; Freeman & Garcia, 2008; Pediatric OCD Treatment Study Team, 2004), used in the Pediatric OCD Treatment Studies (see full description below), which is fairly typical of a gradual exposure regimen (March & Mulle, 1998), consists of 14 visits over 12 weeks spread across five phases: (1) psychoeducation, (2), cognitive training, (3) mapping OCD, (4), ERP, and (5) relapse prevention and generalization training. With the exception of the first 2 weeks, in which patients visit twice weekly, all visits are administered once per week, last 1 hour, and include one betweenvisit 10-minute telephone contact scheduled during Weeks 3–12. Psychoeducation, defining OCD as the identified problem, cognitive training, and development of a stimulus hierarchy (mapping OCD) take place during the first four visits; ERP takes up the fifth through 12th visits, with the last two sessions incorporating generalization training and relapse prevention. Each session includes a statement of goals, review of the previous week, provision of new information, therapistassisted practice, homework for the coming week, and monitoring procedures.

Parent Involvement

Parents are centrally involved at Sessions 1, 7, and 11, with the latter two sessions devoted to guiding the parents in their central role of assisting their child to accomplish the homework assignments. Sessions 13 and 14 are devoted to relapse prevention and celebration of accomplishments in treatment, and also require significant parental input. Parents check in with the therapist at each of the other sessions, and the therapist provides feedback describing the goals of each session and the child’s progress in treatment. The therapist assists parents in refraining from suggesting inappropriate ERP tasks. It is common for parents (and sometimes children as well) to have expectations of moving up the hierarchy too quickly and expecting behavioral change that is much too difficult for a given point in treatment. This sometimes comes from frustration with lack of progress, but it may also come from excitement about initial success (e.g., parents see that the child has one symptom under control and expect him or her to be able to face all of his or her symptoms). In some cases, extensive family involvement in rituals and/or the developmental level of the child require that family members play a more central role in treatment, as is the case with younger children (Freeman et al., 2007) and children with developmental disabilities. It is important to note that the CBT protocol provides sufficient flexibility to accommodate variations in family involvement dictated by the OCD symptom picture and the developmental level of the child.

Developmental Appropriateness and Flexibility

Critical to the success of any CBT protocol for children and adolescents is the delivery of treatment in a developmentally appropriate fashion. We promote developmental appropriateness by allowing flexibility in CBT within the constraints of fixed session goals, which has been termed "flexibility within fidelity" by Kendall, Gosch, Furr, and Sood (2008). More specifically, the therapist adjusts the level of discourse to the cognitive functioning, social maturity, and capacity for sustained attention of each patient. Younger patients require more redirection and activities in order to sustain attention and motivation. Adolescents are generally more sensitive to the effects of OCD on peer interactions, which in turn require more discussion. Cognitive interventions in particular require adjustment to the developmental level of the patient so, for example, adolescents are less likely than younger children to appreciate giving OCD a "nasty nickname." Developmentally appropriate metaphors relevant to the child's areas of interest and knowledge are also used to promote active involvement in the treatment process.

EVIDENCE ON THE EFFECTS OF TREATMENT

The building of the CBT outcome literature in pediatric OCD began with age-downward extension of protocols found efficacious with adults, then publication of single-case studies, case series, and open clinical trials involving these protocols. Collectively, the published uncontrolled evaluations (e.g., Franklin et al., 1998; March, Mulle, & Herbel, 1994; Piacentini et al., 2002) yielded remarkably similar and encouraging findings across settings and cultures: At posttreatment, the vast majority of patients were responders, with significant symptom reductions. This pilot work set the stage for randomized studies evaluating the efficacy of CBT, one of which was published in the late 1990s (deHaan, Hoogduin, Buitelaar, & Keijsers, 1998), and several published more recently (Barrett et al., 2004; Bolton et al., 2011; Bolton & Perrin, 2008; Franklin et al., 2011; Freeman et al., 2014; Pediatric OCD Treatment Study Team, 2004; Piacentini et al., 2011; Storch, Geffken, Merlo, Mann, et al., 2007; Storch et al., 2011; Williams et al., 2010). Below we review the designs and some of the key findings from studies completed by our team.

The Pediatric OCD Treatment Studies: Multisite Comparative Treatment Trials

CBT, Medication, and Their Combination: POTS I

The initial Pediatric OCD Treatment Study (POTS I; Pediatric OCD Treatment Team, 2004) was the first randomized trial in pediatric OCD to directly compare the efficacy of an established medication (sertraline; SER), OCD-specific CBT, and their combination (COMB) to a control condition, pill placebo (PBO), in the acute treatment of pediatric OCD.

A volunteer sample of 112 subjects between ages 7 and 17 inclusive with a primary DSM-IV diagnosis of OCD entered the study; the sample was evenly split between males and females, and approximately equal with respect to adolescents ages 12–17 and younger children ages 7–11. Consistent with an intent-to-treat (ITT) analytic model, all patients, regardless of responder status, returned for all scheduled assessments, with the main dependent variables assessed by an independent evaluator. Specifically, in Stage I (12 weeks), patients were assessed at baseline, weeks 4, 8, and 12; in Stage II, patients were evaluated at Weeks 16, 20, 24, and 28. Results of our ITT analyses indicated a significant advantage for all three active treatments—COMB, CBT, and SRT—compared to placebo (Pediatric OCD Treatment Team, 2004). With respect to comparisons of active treatments, overall, COMB treatment was particularly effective; it proved superior to CBT and to SRT, which did not differ from one another. Approximately 54% of the patients who received COMB treatment and 39% of those who received CBT alone achieved OCD symptom remission, in comparison to approximately 21% of those who received SRT and 3% who received PBO.

Based on these results, we recommended that youth with OCD begin treatment with either the combination of CBT plus a selective serotonin reuptake inhibitor (SSRI), or with CBT alone. The addition of medication to CBT alone may be particularly important when CBT is attenuated for some reason or if the child has comorbid tic disorder (March et al., 2007).

Augmentation of SSRI Partial Response with CBT: POTS II

Despite the growing evidence base for CBT, for most OCD pediatric patients treated in the community, the first-line treatment remains monotherapy with an SSRI. Unfortunately, recommended doses of these medications leave the great majority of patients with clinically significant residual symptoms (Freeman & Garcia, 2008) and the chances for excellent response (as defined earlier) are lower with medication alone—for example, POTS I indicated that the rate of excellent response in children treated with SRT was just 21%. Accordingly, our next phase of research was designed to address the issue of treatment augmentation (adding an additional treatment to a current treatment), as well as “treatment transportability” (developing a treatment in a research setting specifically for use in community clinical settings). In the POTS II study, Franklin et al. (2011) compared the relative efficacy of augmentation of (1) medication management (MM) provided by a study psychiatrist (MM only); (2) medication management plus OCD-specific CBT as delivered by a study psychologist (MM+CBT); and (3) MM + instructions in CBT (MM+I-CBT) as delivered by the study psychiatrist assigned to provide MM.

The study sample comprised 124 youth (ages 7–17) with a primary DSM-IV diagnosis of OCD. Inclusion criteria required that patients already be on an adequate dose of serotonergic medication (either an SSRI or clomipramine) for OCD yet still experience clinically significant OCD symptoms. Like POTS I, participants were recruited from three collaborating academic sites: University of Pennsylvania, Duke University, and Brown University. Participants were randomly assigned to one of three treatment conditions (MM, MM+CBT, or MM+I-CBT) and were evenly distributed across these groups. The acute treatment phase was 12 weeks for all treatment groups; however, CBT in the MM+CBT condition followed the 14-session, hour-long session protocol used in POTS I, whereas the MM+I-CBT condition involved seven brief sessions and did not include in-session exposure.

Results indicated that MM+CBT was superior to MM alone and to MM+I-CBT. Contrary to study hypotheses, MM+I-CBT and MM alone failed to separate statistically from one another (69% response for MM+CBT vs. 34% for MM+I-CBT and

30% for MM alone). Response was defined as a 30% reduction in baseline Child Yale–Brown Obsessive Compulsive Scale (CY-BOCS) score at Week 12.

POTS II therefore provided further evidence for the efficacy of combined treatment, in this case administered sequentially rather than simultaneously. Interestingly, results on the continuous CY-BOCS outcomes for MM+CBT were somewhat attenuated relative to outcomes following combined treatment in POTS I, which may reflect sample difference, sequencing effects, or the possible influence of partial response to initial treatment on subsequent outcomes. The study also highlighted the potential need for using the "full dose" of CBT rather than relying on a brief form of CBT integrated into medication management in order to achieve optimal outcomes. Reasons for the lack discernable effect of MM+I-CBT may include lower intensity of treatment, less contact time with the mental health clinician compared with MM+CBT, omission of key CBT components (i.e., in-session exposure), or some combination of these factors.

Family-Based Treatment of Early Childhood OCD: POTS Jr

Recent work also supports the success of family-based CBT for young children (ages 5–8) with OCD as compared to a family-based relaxation training (RT; Freeman et al., 2008; Freeman et al., 2014). In POTS Jr (Freeman et al., 2014), inclusion and exclusion criteria were identical to the other POTS trials described earlier except for the age range and the requirement that at least one parent participate in every session. Both treatment protocols (CBT and RT) consisted of 12 sessions delivered over the course of 14 weeks. This family-based CBT program draws on extant approaches for older children but contains novel elements that have been tailored to young children with OCD. These elements include (1) attention to developmental stage and concomitant levels of cognitive and socioemotional skills, (2) awareness of a child's involvement in and dependence on a family system, and (3) the incorporation of parent training and behavior management techniques.

Like POTS I and II, POTS Jr was conducted at three academic medical centers (Penn, Duke, and Brown). The sample comprised 127 participants randomly assigned to family-based CBT or family-based RT. Results indicated that CBT was superior to RT on both primary outcome measures (Clinical Global Impression—Improvement scale [CGI-I) and CY-BOCS). The percentages of children who were rated as *very much improved* or *much improved* on the CGI-I at 14 weeks were 72% for CBT and 41% for RT. The effect size difference between CBT and RT on the CY-BOCS at Week 14 was 0.84 (95% confidence interval = 0.062–1.06). These findings indicate that with parental support, young children with OCD who are treated with CBT can make significant gains beyond those which can be achieved through RT. Outcomes from POTS Jr also show that even at a young age, OCD can be significantly impairing and warrants more than a "watch and wait" approach.

Implementation of Exposure-Based CBT for OCD: NordLOTS

Although experts have recommended CBT as a first-line treatment for OCD in children and adolescents (Geller & March, 2012), barriers continue to limit its widespread use. Few therapists have extensive experience with CBT for pediatric OCD;

thus, CBT may not be accessible outside the major medical centers associated with its development and empirical evaluation. A recently completed trial, the first step in the Nordic Long-Term OCD Treatment Study (NordLOTS), a long-term implementation study in Denmark, Sweden, and Norway, examined the acute effectiveness of manualized exposure-based CBT with a family-based treatment as an initial treatment (Torp, Dahl, Skarphedinsson, Thomsen, et al., 2015). Treatment was delivered in public community mental health clinics by clinicians who were not experts in pediatric OCD. The 269 participants (ages 7–17) received 14 weekly sessions of manualized CBT, making up the largest sample studied in any pediatric OCD open treatment trial or RCT. Findings indicated both statistically significant and clinically meaningful reductions in OCD and related symptoms at the end of acute treatment. The estimated within-group effect size between baseline and posttreatment was 1.58 (95% confidence interval = 1.37–1.80). The outcomes were comparable to several previous open trials conducted at expert sites (Franklin et al., 1998, March et al., 1994; Storch et al., 2010). Findings indicated that CBT can be disseminated beyond the academic context and hence be transported to the clinical settings where most families who have a child with OCD will be able to access care.

In addition to examining acute outcomes, researchers from the NordLOTS trial investigated the effectiveness of sertraline (SRT) versus continued CBT in youth who did not respond to an initial course of CBT (Skarphedinsson, Weidle, et al., 2015). Although expert guidelines currently recommend the addition of SSRIs when CBT is not effective (American Academy of Child and Adolescent Psychiatry, 2012), this recommendation is not supported by empirical data. Fifty-four youth classified as nonresponders to initial CBT were randomized to SRT or continued CBT for 16 weeks. There were no significant differences between SRT or continued CBT ($t(119) = -0.94$, $p = .351$). However, within-group effect sizes (considering the beginning of this second phase of treatment as baseline) were large and significant (CBT: 1.04, 95% confidence interval = 0.047–1.61; SRT: 1.19, 95% confidence interval = 0.54–1.83). These results indicate that improvement can still be achieved with continued treatment despite nonresponse during initial treatment with CBT for pediatric OCD. Furthermore, CBT and SRT both have significant response rates as continued treatments following initial CBT.

Moderators of CBT Response

Although many have suggested that the presence of comorbidity, especially with the tic disorders, lack of motivation or insight, and the presence of family psychopathology, might predict a poor outcome in children undergoing CBT, there is as yet little empirical basis on which to predict treatment outcome in children undergoing psychosocial treatment. Ginsburg, Kingery, Drake, and Grados (2008) reviewed the data on prediction or moderation of outcome in pediatric OCD and identified baseline OCD symptom severity and family psychopathology as predictors of poorer response to CBT. Analyses from the NordLOTS trial indicated that older youth with more severe OCD, greater functional impairment, higher rates of internalizing and externalizing symptoms, and higher levels of depression and anxiety symptoms before treatment had significantly poorer outcomes after 14 weeks of treatment (Torp, Dahl, Skarphedinsson, Compton, et al., 2015). In POTS

I we found that comorbid tic diagnosis predicted response to medication but not to CBT (March et al., 2007). In contrast, in the NordLOTS trial, participants with a comorbid tic disorder who were nonresponders to initial CBT were more likely to benefit from an SSRI than from continued CBT (Skarphedinsson, Compton, et al., 2015).

A more comprehensive examination of the POTS I dataset that was published after Ginsburg et al.'s (2008) systematic review identified several predictors of response to all treatments: lower OCD symptom severity, less OCD-related impairment, greater insight, fewer comorbid externalizing symptoms, and lower levels of family accommodation were associated with better outcomes. With respect to predicting response to specific treatments, only a family history of OCD emerged as a moderator: Those with a family history of OCD had a sixfold decrease in effect size for CBT monotherapy compared to those without such a history (Garcia et al., 2010). The mechanism for this moderation is not yet clear. Genetic predisposition is an obvious candidate; however, findings from Peris et al.'s (2012) examination of data from Piacentini et al.'s (2011) randomized controlled trial (RCT) also point to family environment as an important clinical factor: In this study, families with lower levels of parental blame and family conflict, as well as high levels of family cohesion at baseline, were more likely to have a child who responded to family-focused CBT. On the other hand, Torp, Dahl, Skarphedinsson, Compton, et al. (2015) did not identify family as a predictor of outcome in the NordLOTS pediatric OCD study, although this may have been related to the high family involvement in the treatment provided in this study. Taken together, the research does suggest that family environment and family history of OCD are important considerations to take into account clinically when treating OCD.

FUTURE DIRECTIONS

Using the research base described here as a stepping-stone, current research efforts in the field of pediatric OCD now (or shortly will) focus on the following key areas: (1) more controlled trials comparing medications, CBT, and combination treatment to determine whether medications and CBT are synergistic or additive in their effects on symptom reduction; (2) comparisons of individual- and family-based treatments to determine which is more effective in which children and to examine whether family interventions that are more focused on identified predictors of CBT outcome (e.g., accommodation) yield more robust and durable treatment response; (3) examination of the relative contribution of behavioral and cognitive procedures to outcome, especially while taking into account patient subtype (e.g., not just right OCD concerns vs. consequence-driven compulsions); (4) development of innovative treatment for OCD subtypes, such as obsessional slowness or hoarding, that may not respond well to ERP; (5) development of treatment innovations to target specific factors, such as family dysfunction and externalizing comorbidity, that constrain the application of CBT to patients with OCD; (6) once past initial treatment, the management of partial response, treatment resistance, treatment maintenance, and discontinuation; and (7) continuation of efforts to export research treatments to divergent clinical settings and patient populations in order to judge the acceptability and effectiveness of CBT as a treatment for pediatric OCD in real-world settings. We are truly excited by the new possibilities that these and other initiatives will yield, and look forward to another decade's worth of progress in identifying and treating OCD in young people before the illness disrupts developmental trajectories that are difficult to get back on track.

CONCLUDING COMMENTS

CBT for pediatric OCD has blossomed in the last 15 years into an empirically supported treatment for this often disabling condition, with randomized studies from around the world attesting to its efficacy relative to various comparison conditions and to active medication. As is the case in treatment studies for adults suffering from OCD, the effects of CBT for youth appear to be both robust and durable, with the follow-up studies we have available indicating that the effects of treatment last for up to 9 months after treatment has ended. Approximately 12–14 weekly treatments appear to be sufficient for most patients, although future studies should examine whether symptom severity, comorbidity, readiness for change, and case complexity (e.g., family problems) necessitate more intensive approaches. The degree of family involvement and the degree to which this involvement needs to target specific family predictors of poorer response (e.g., accommodation) also remains an issue in need of more study.

Both alone and in combination with SSRIs, CBT provides a viable treatment alternative to SSRIs alone, although the paucity of therapists trained in its use makes it difficult in some regions to heed the expert consensus guidelines recommendation to begin treatment with CBT alone or with COMB. Dissemination of CBT for pediatric OCD thus remains a pressing challenge to the field, although there are now encouraging data that suggest implementation of CBT for pediatric OCD in community mental health settings can yield impressive results that are comparable to what have been achieved in the academic medical settings that developed the use of the CBT protocol with children and adolescents. A modified CBT protocol that centrally involves parents in the treatment of young children ages 5–8 with OCD has now been developed and its efficacy evaluated in a multisite RCT; findings from that trial indicate that the treatment can be delivered effectively to this population as well, which might encourage earlier intervention for those whose symptoms are already evident in young childhood.

ACKNOWLEDGMENTS

Funding for this research was provided by grants from the National Institute of Mental Health (Nos. R01-MH55121; R01-MH55126; 2R01-MH055126-08A2; 2R01-MH055121-062A; 1R01-MH064188-01A2; R01-MH079377; R01-MH079154; and R01-MH79217). Sertraline and matching placebo were provided to the POTS under an independent educational grant from Pfizer Inc. to John S. March.

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CHAPTER 4

Cognitive-Behavioral Treatment for Adolescent Depression

Paul Rohde

OVERVIEW OF THE CLINICAL PROBLEM

Among adolescents, major depressive disorder (MDD) is one of the most prevalent mental disorders, with approximately 15–20% of adolescents experiencing an episode of depression during the teenage years (e.g., Merikangas et al., 2010). Early-onset MDD is often marked by a recurrent course and psychiatric comorbidity, with increased risk for academic failure, teen childbearing, impaired marital and parental functioning, poor work performance, and increased risk of numerous physical disorders and early mortality (Kessler, 2012).

Our research in adolescent depression treatment has been influenced by findings from a longitudinal epidemiological study that happened concurrently. The Oregon Adolescent Depression Project (OADP; Lewinsohn, Hops, Roberts, Seeley, & Andrews, 1993) began as a large, randomly selected cohort of high school students assessed twice over the course of one year. A subset of participants completed a third assessment after their 24th birthday, and a fourth assessment occurred after participants turned 30 years of age. One of the most surprising OADP findings was the high prevalence of MDD: 3% reported current MDD at the first two assessments, but one in four (24%) reported lifetime MDD by the second assessment, which occurred around 18 years of age. By age 30, the cumulative MDD incidence was 51% (Rohde, Lewinsohn, Klein, Seeley, & Gau, 2013). The apparent ubiquity of early MDD was concerning, but it emphasized the need to develop effective interventions for this age group. Adolescent MDD had a mean duration of 6 months, but longer episodes were associated with earlier onset, suicidal ideation, or treatment receipt (Lewinsohn, Clarke, Seeley, & Rohde, 1994).

The experience of MDD impacts adolescent functioning in almost all domains we examined, including depression-related cognitions, self-consciousness, excessive emotional reliance on others, major life events and hassles, coping skills, social support from family and friends, social competence, interpersonal conflict, poor health, and smoking (Lewinsohn, Clarke, et al., 1994). Formerly depressed adolescents continued to differ from their never-depressed peers on many of these psychosocial variables. Many of the depression-related measures also acted as risk factors for future depression, especially past depression, other mental disorders, suicide attempt, and physical symptoms. The diversity of associated deficits suggested that there probably is not a single cause or maintaining factor, which led to our cognitive-behavioral therapy (CBT) program having a "smorgasbord" of skills.

Another striking feature of adolescent MDD in the OADP was the high occurrence of comorbid psychopathology, with almost half of depressed adolescents (43%) having a lifetime co-occurring disorder (significantly higher rates for anxiety disorders, alcohol and drug use disorders, conduct disorder; Rohde, Lewinsohn, & Seeley, 1991). Adolescent comorbidity rates appear higher compared to depressed adults. When comorbidity was present, depression tended to occur after rather than before the other psychiatric condition, though we also found that adolescent MDD increased the risk for future non-mood disorders. Comorbidity was associated with greater suicidality and treatment seeking. The high rates of adolescent comorbidity strongly influenced the direction of our treatment research.

CONCEPTUAL MODEL GUIDING THE TREATMENT PROGRAM

CBT for adolescent depression is based on cognitive and behavioral treatment interventions initially developed and evaluated with depressed adults. The cognitive vulnerability model (Beck, 1967) posits that individuals at risk for depression (and those currently depressed) selectively attend to, and have stronger recall for, negative rather than positive stimuli. The primary goal of cognitive-based treatment is to help people become aware of pessimistic thoughts, depressotypic beliefs, and causal attributions in which they blame themselves for failures but do not take credit for successes. Once these depressotypic thinking patterns are recognized, individuals are taught to develop and substitute more realistic cognitions for these counterproductive ones.

Behavioral theories of depression (Lewinsohn, 1974) emphasize the role that maladaptive actions play in the onset and maintenance of depression, positing that depressive symptoms develop (and persist) as the result of decreased environmental reward, reductions in positively reinforced behaviors, and reinforcement of depressive behaviors. The primary goal of behavior-based treatment is to increase engagement in activities that are personally reinforcing.

CBT combines cognitive and behavioral strategies aimed at ameliorating the types of problems common among depressed individuals. CBT for depression shares elements found in CBT treatments for other disorders, such as the focus on specific and current actions and cognitions, structured sessions, repeated skills practice in and out of session, the use of rewards and contracts, homework assignments, and a relatively small number of sessions. Our version of CBT rests on an underlying model that assumes that multiple causal factors contribute to depression, none of which is necessary or sufficient. CBT is therefore based on the premise that teaching adolescents a variety of coping strategies will allow them to counteract the diverse factors that contribute to their depression and deal more effectively with problems posed by their environment.

CHARACTERISTICS OF THE TREATMENT PROGRAM

Our program of research revolves around the Adolescent Coping With Depression course (CWD-A; Clarke, Lewinsohn, & Hops, 1990), a group-based CBT intervention. The CWD-A was adapted for adolescents from an adult version by simplifying the in-session material and homework, enhancing experiential learning opportunities (e.g., adding role plays), and adding modules to improve communication and problem-solving skills. The CWD-A comprises 16 two-hour sessions conducted over 8 weeks for mixed-gender groups of up to 10 adolescents.

The CWD-A comprises eight core components:

1. Treatment begins with the CBT model of depression, which provides a treatment rationale.
2. Participants monitor their mood daily throughout treatment to provide baseline data, see that their mood does change, and identify mood changes that occur as a result of new skills practice.
3. Increasing pleasant activities is provided as a form of behavioral activation and includes baselining current activity level, setting realistic goals to increase frequency and/or variety of activities, developing a change plan, and self-reinforcing goal achievement.
4. Social skills training includes practice in basic conversation techniques, planning social activities, and strategies for making friends.
5. Given the frequent co-occurrence of anxiety, relaxation training with progressive muscle relaxation and deep-breathing techniques are taught.
6. A significant portion of the CWD-A focuses on reducing depressogenic cognitions, using simplified versions of interventions developed by Beck and colleagues for identifying, challenging, and changing negative thoughts and irrational beliefs. Cartoon strips (e.g., Garfield the cat) are initially used to illustrate depressotypic thoughts and generate alternative positive thoughts, followed by repeated application of these skills to personal triggers.
7. The next component is improved communication (active listening, expressing negative and positive thoughts) and problem solving (defining problem, brainstorming, evaluating options, specifying an agreement).
8. The intervention concludes with relapse prevention, which involves skills integration, anticipation of future problems, and development of a life plan.

Given that parents are an integral part of the adolescent's social system and may contribute to the onset and maintenance of depression, a parallel parent group intervention was developed (Lewinsohn, Rohde, Hops, & Clarke, 1991). The parent course has two goals: (1) to inform parents of the CBT material their children are learning to encourage support and reinforcement of the adolescent's use of skills, and (2) to teach parents the communication and problem-solving skills that are being taught to their child. Parents meet with a separate therapist weekly for 2-hour sessions conducted at the same time as the teen group. Two joint sessions are held in the seventh week, during which the adolescent and parent groups come together to practice these skills on issues salient to each family.

EVIDENCE ON THE EFFECTS OF TREATMENT

The CWD-A as a group treatment intervention has been evaluated in five randomized controlled trials (RCTs). In addition, individual treatment interventions based on the CWD-A have been evaluated in two RCTs, and the program has formed the basis for an impressive body of research on depression prevention for at-risk adolescents. An overview of our research program is shown in Figure 4.1, and information about each RCT appears in Table 4.1.

Initial Efficacy Trial

Our first RCT involved 59 depressed adolescents who were randomized to (1) the CWD-A group for adolescents only; (2) the CWD-A group for adolescents with a separate parent group; or (3) the wait-list condition, and followed for 24-months posttreatment (Lewinsohn, Clarke, Hops, & Andrews, 1990). Planned comparisons indicated that all improvements were accounted for by the two active treatments compared to wait-list control. Contrary to expectation, differences between the Adolescent-Only and Adolescent + Parent conditions on diagnostic outcomes were nonsignificant. Forty-six percent of the treated adolescents no longer met depression criteria by the end of treatment compared with 5% of wait-list participants. By 6-months posttreatment, the rate of recovery for treated adolescents increased to 83%. Gains were maintained for the adolescents in the two active interventions, with very few teenagers experiencing recurrence.

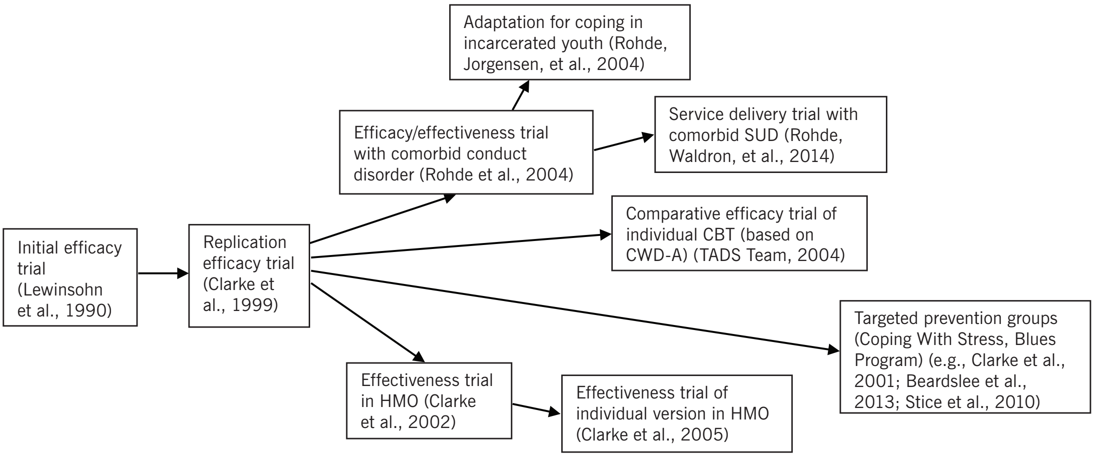

FIGURE 4.1. Program of research involving the Adolescent Coping With Depression course (CWD-A).

TABLE 4.1. Description of Treatment RCTs Conducted in Our Program of Research

Study	Study design	Sample	Outcome rates	Notes
Lewinsohn et al. (1990)	Three conditions: (1) CWD-A (adolescent only; 14 2-hr sessions) vs. (2) CWD-A (adolescent + parent) vs. (3) WL	*N* = 59 with depression (MDD, minor, intermittent depression)	Posttreatment remission: 43% Adolescent Only vs. 46% Adolescent + Parent vs. 5% WL; sig difference active vs. WL	Remission for active tx ~70% by 1-mo follow-up
Clarke et al. (1999)	Three conditions same as Lewinsohn et al. (1990) but CWD-A increased to 16 sessions	*N* = 96 with depression (MDD, dysthymia)	Posttreatment remission: 65% Adolescent only vs. 69% Adolescent + Parent vs. 48% in WL; sig difference active tx vs. WL	Recurrence by 2-yr follow-up = 22%
Rohde, Clarke, et al. (2004)	Two conditions: (1) CWD-A (adolescent only) vs. (2) life skills/tutoring (matched on duration, modality)	*N* = 93 with MDD and conduct disorder	Posttreatment MDD recovery: 39% vs. 19% (sig difference)	MDD recovery rates at 12-mo follow-up 63% vs. 63% (ns)
Rohde, Waldron, et al. (2014)	Three conditions: (1) CWD-A (12 2-hr sessions) then functional family therapy (FFT) vs. (2) FFT then CWD-A vs. (3) coordinated CWD-A + FFT	*N* = 170 (MDD, dysthymia, D-NOS) and substance use disorder	Posttreatment depression remission: 45% CWD-A/FFT vs. 44% FFT/CWD-A vs. 52% coordinated tx (ns)	60% depression remission across conditions by 1-yr follow-up (ns)
Clarke et al. (2002)	Two conditions: (1) CWD-A + usual care vs. (2) usual care	*N* = 88 (MDD, dysthymia) with depressed parent receiving tx	Posttreatment remission: 58 vs. 53% Posttreatment recovery: 32% vs. 30% (both ns)	Recovery at 2-yr follow-up 90% vs. 92% (ns)
Clarke et al. (2005)	Two conditions: (1) individual CWD-A (5–9 sessions) + usual care SSRI vs. (2) usual care SSRI	*N* = 152 with MDD (who had received SSRI medications)	Remission 6-wk follow-up: 57% vs. 43% Remission 12-wk follow-up: 77% vs. 72% Remission 52-wk follow-up: 89% vs. 94% (all ns)	Recurrence by 1-year follow-up = 24%
TADS (2004, 2007)	Four conditions: (1) CBT (no. of sessions: 15 acute, 3–6 continuation, 3 maintenance) vs. (2) fluoxetine vs. (3) combination CBT/fluoxetine vs. (4) pill placebo	*N* = 439 adolescents with MDD	12-week response: 43% vs. 61% vs. 71% vs. 35% 12-week remission: 16% vs. 23% vs. 37% vs. 17% (combination superior to other conditions, which were ns)	Remission by end of tx (36-wk) ~60% (ns) for active conditions

Note. Response, significant reduction in symptoms; Remission, depression resolution (symptom-free) or nearly symptom-free; Recovery, remission that is maintained (generally 8 weeks or longer); Recurrence, new episode of depression after achieving recovery. CWD-A, Adolescent Coping With Depression course; WL, wait list; MDD, major depressive disorder; tx, treatment; sig, statistically significant; D-NOS, depression not otherwise specified; wk, week; mo, month; yr, year.

Replication Efficacy Trial

Our primary goal in the second RCT was to replicate the initial findings with a larger sample. A total of 96 depression adolescents were randomized to the same three conditions and followed for 2 years (Clarke, Rohde, Lewinsohn, Hops, & Seeley, 1999). Our secondary goal in this RCT was to evaluate a booster protocol aimed to enhancing the maintenance of treatment gains. At the end of group treatment, clients in the two treatment conditions were randomized to (1) individual booster sessions (and assessments) every 4 months, (2) assessments every 4 months, or (3) assessments once a year.

As in the first RCT, posttreatment diagnostic recovery rates for the two active treatments were superior to wait-list condition, but recovery rates for the two CWD-A versions did not differ. Both treatments also showed comparable improvements in depression continuous measures and functioning scores that were superior to the wait-list condition. The two active treatments also did not differ in 2-year recovery rates.

We found no evidence to support the hypothesis that boosters reduced the risk of recurrence; instead, their main effect appeared to be facilitating recovery among adolescents who were still depressed at the end of the group. Thus, the boosters may be better described as "continuation" treatment rather than "depression recurrence prevention." Based on these results, we propose that booster sessions be provided only to adolescents who are still experiencing depressive symptoms at the end of acute treatment, and perhaps that boosters occur more frequently initially, reducing in frequency as the adolescent improves. Given the lack of support for boosters in this RCT, we have not continued to evaluate them as a part of the CWD-A (though they are retained in the individual CBT provided in the Treatment for Adolescents with Depression Study [TADS]).

Both the initial and replication RCTs found no evidence that parental involvement significantly enhanced CWD-A outcomes. These results were inconsistent with widely held clinical beliefs (including our own!) that parental involvement is necessary in the treatment of adolescent depression. Parental attendance (especially for fathers) in both trials was less than ideal, and both studies examined only one method of involving parents in treatment. I address the issue of parents in CBT later in this chapter when discussing important unresolved issues.

Hybrid Efficacy–Effectiveness Trial with Comorbid Adolescents

A secondary analysis of data from the first two RCTs found that depressed adolescents with substance use disorders had a slower time to depression recovery and those with disruptive behavior disorders were more likely to experience MDD recurrence (Rohde, Clarke, Lewinsohn, Seeley, & Kaufman, 2001). Given these negative outcomes, in combination with the high rates of comorbidity, our treatment research next shifted into evaluating the CWD-A among depressed adolescents with significant comorbidity, specifically conduct disorder (CD). Our next RCT evaluated effectiveness of the CWD-A for depression among 93 adolescents with current MDD/CD. Participants were recruited from the local juvenile justice department and randomized to the CWD-A or a life skills/tutoring control group matched on duration and modality (Rohde, Clarke, Mace, Jorgensen, & Seeley, 2004). MDD recovery rates posttreatment were significantly greater in the CWD-A compared to life skills group, and CWD-A participants reported greater reductions on both self-report (d = 0.48) and interviewer-based (d = 0.44) depression measures. However, MDD recovery rate were comparable at both 6- and 12-month follow-up.

This study was the first RCT of a psychosocial intervention with depressed adolescents with significant comorbidity. Although the CWD-A appeared to be an effective depression treatment in multidisordered adolescents (in addition to MDD and CD, 26% had concurrent attention-deficit/hyperactivity disorder [ADHD] and 72% had one or more diagnoses of substance abuse/dependence), the overall response rates were much lower than the earlier trials, highlighting the challenges of treating adolescents with co-occurring disorders and emphasizing the need to improve long-term outcomes for comorbid depressed adolescents. In addition, we found no evidence that the CWD-A intervention had any impact on the course of CD, suggesting that interventions for comorbid populations focus directly on each disorder, which we would do in our next treatment RCT.

Pilot Study Adaptation of the CWD-A as a General Coping Skills Intervention for Incarcerated Youth

During the time of our third treatment RCT, we also piloted a modification of the CWD-A for all (male) adolescents who were incarcerated in the Oregon youth correctional system (Rohde, Jorgensen, Seeley, & Mace, 2004). The goal of this group (entitled the Coping Course, based on the CWD-A) was to enhance general coping and problem-solving skills among incarcerated youth. Male adolescents incarcerated at a youth correctional facility were assessed by questionnaire and randomized to the Coping Course (n = 46) or usual care (n = 30), repeating the survey after the program; a second correctional facility provided additional control group data (n = 62). We found significant changes for reduced suicide proneness and externalizing problems, increased self-esteem, and increased sharing of feelings with staff.

Second RCT with Comorbid Adolescents: Evaluation of Service Delivery Models

Given that our first RCT with comorbid adolescents found no effects from CBT on depression or the comorbid condition, we next examined different methods of delivering two treatment interventions, each focused on one disorder. We focused on depression and substance use disorders (SUDs), as both are highly prevalent and frequently co-occur. We evaluated three methods of integrating the CWD-A with functional family therapy (FFT; Alexander & Parsons, 1982), an evidence-based treatment of externalizing problems and substance abuse, randomizing 170 adolescents with depressive disorder and an SUD to (1) treating the SUD first, (2) treating the depression first, or (3) treating both disorders simultaneously. Depressive symptom reductions occurred early in all three treatment sequences, with no evidence that one sequence resulted in more rapid depression recovery (Rohde, Waldron, Turner, Brody, & Jorgensen, 2014). Approximately half of the adolescents achieved depression remission during treatment, which rose to 60% one year later. Regarding substance use outcomes, among adolescents with depression at the level of MDD (54% of the sample), providing CWD-A first resulted in greater substance use reductions. Conversely, if the adolescent's depression was not at the level of MDD, the three treatment sequences had a similar pattern of substance use outcomes.

To our knowledge, this was the first RCT to evaluate the effectiveness of psychosocial treatments for depression and SUDs. Most relevant to clinical recommendations, no treatment sequence resulted in more rapid depression recovery. In addition to changes in depression and substance use outcomes, we examined the degree to which adolescents across treatment sequences attended therapy, as substance abusing adolescents are notoriously difficult to engage and retain in therapy. For youth in either sequenced condition, there was significantly lower engagement for the second modality, suggesting a fairly narrow "window of opportunity" for engaging adolescents in sequential treatment.

Contrary to expectation, coordinated treatment failed to be superior to either sequenced condition for depression or SUD. One potential explanation is that coordinated care failed to create a coherent change model; a second possibility is that working on two separate problems concurrently was overly demanding. Also, adolescents in coordinated treatment had different therapists for each treatment, which may have impacted the alliance with each provider. Many of these same issues apply to individual CBT delivered in combination with antidepressants, which I discuss later.

Effectiveness Trial in a Health Maintenance Organization Setting

As my colleagues and I at Oregon Research Institute (ORI) were evaluating the CWD-A with different comorbid populations, Greg Clarke was evaluating methods to integrate versions of the CWD-A into standard care. In the only evaluation, to my knowledge, of a group-based adolescent depression treatment in usual care, Clarke et al. (2002) identified depressed adolescents who had a depressed parent receiving treatment in a health maintenance organization (HMO) and randomized teens to CWD-A plus usual care versus usual care alone, following participants up to 24-months posttreatment. Survival analyses predicting depression recovery or remission found no advantage for CWD-A at posttreatment compared to usual care. Similar nonsignificant recovery differences were reported at 12- and 24-month follow-ups. Differences on continuous measures of depression and functioning were also nonsignificant. Thus, CWD-A group treatment did not incrementally benefit depressed adolescents who were receiving the usual type and amount of care provided in this HMO setting. One possibly significant factor was that depressed adolescents were selected on the basis of having a depressed parent (later depression prevention work conducted by Clarke and colleagues (e.g., Beardslee et al., 2013) suggests that parental depression may be a contraindication for CBT prevention).

HMO Effectiveness Trial Using an Individualized CWD-A

There are significant logistical difficulties in conducting group-based treatments in usual care settings. Given these practical concerns, Clarke et al. (2006) developed a streamlined version of individual CBT, based on the CWD-A, that targets cognitive restructuring or behavioral activation training. Treatment comprised five to nine individual sessions, followed by 1 year of periodic telephone check-ins. During acute treatment, the adolescent and therapist collaboratively chose one of two approaches to try for four sessions. After completing this module, they could jointly decide to implement the other module. The intervention was delivered in conjunction with antidepressant treatment and the program includes material to encourage medication adherence. This new collaborative care CBT program adjunctive to selective serotonin reuptake inhibitor (SSRI) treatment was evaluated in HMO pediatric primary care, identifying adolescents who had recently received SSRI medication (Clarke et al., 2005). Adolescents were randomized to the individual CBT plus usual care versus usual care. Although a marginal trend (p = .07) favored CBT augmentation on a continuous depression measure, no differences were found on the primary dichotomous outcome of MDD recovery. As in the first HMO effectiveness trial, results suggested that CBT does not markedly improve outcomes to well-delivery usual care. Worthy of note, however, is that usual care in this study achieved high and rapid recovery rates.

Comparative Effectiveness Trial of Individual CBT and/or Antidepressant Medication: The Treatment of Adolescents with Depression Study

Early evaluations of CBT for adolescent depression generally found it to be more efficacious that alternative treatments, including relaxation training, supportive therapy, and traditional counseling (e.g., Brent et al., 1997; Wood, Harrington, & Moore, 1996), but CBT had not been systematically evaluated in comparison to, or in combination with, antidepressant medications. The comparison of CBT versus antidepressants and the impact of combined CBT/medication were evaluated in greatest detail in the Treatment of Adolescents with Depression Study (TADS; TADS Team, 2003). TADS compared individual CBT, fluoxetine, combination CBT/fluoxetine, and a pill placebo with clinical management in 439 depressed adolescents. Treatment was delivered in three stages (acute, continuation, and maintenance therapy), followed by a 1-year follow-up.

CBT in TADS reflects a synthesis of the group-based CWD-A and a version of individual CBT developed by David Brent, which had achieved superior response rates compared to both systemic behavior family therapy and individual nondirective supportive therapy (60% for CBT compared to 39% for supportive therapy and 38% for family therapy; Brent et al., 1997). The 12-week acute CBT treatment focused on alliance building, goal setting, and skills building, starting with basic core skills, followed by more individually tailored skills. Eight core skills were required for all clients (i.e., treatment rationale, mood monitoring, goal setting, increasing pleasant activities, problem solving, automatic thoughts/cognitive distortions, realistic counterthoughts, relapse prevention); five additional skills were optional depending on client need (i.e., social interactions, assertion, communication/compromise, relaxation, affect regulation). Acute treatment included two parent-only psychoeducation sessions and at least one conjoint family session.

The continuation phase (i.e., Weeks 12–18) focused on relapse prevention for adolescents who had fully responded, and continued skill practice (with optional new skills) for partial responders (nonresponders were referred out). The maintenance phase (i.e., Weeks 18–36) consisted of three sessions, once every 6 weeks, focusing on skills consolidation, maintenance of gains, and relapse prevention. The structure and content of the continuation and maintenance sessions resembled the booster sessions evaluated in Clarke et al. (1999) but were conceptualized as ongoing treatment for the index MDD rather than relapse/recurrence prevention, which is consistent with their function in Clarke et al.

It is fair to say that the poor outcomes for CBT at the end of acute therapy were shocking to TADS CBT researchers. At the end of 12 weeks, a continuous measure of depression severity indicated that only combination treatment achieved significantly greater reductions than placebo (TADS Team, 2004). Combined treatment was also superior to both monotherapies; however, fluoxetine alone was also superior to CBT alone. Furthermore, using a dichotomous measure of recovery by 12 weeks, the two treatment conditions involving fluoxetine were superior to either CBT alone or placebo, which did not differ. Across conditions, only 23% of adolescents reached the most stringent threshold of remission by 12 weeks, with significantly higher rates for combination therapy relative to the other treatment modalities, which did not differ (Kennard et al., 2006).

Although the initial TADS results were very disappointing for CBT monotherapy, by the end of 18 weeks, CBT outcomes were comparable to fluoxetine, and by 36 weeks (i.e., end of treatment), the three active treatments were comparable. One difficulty in evaluating treatments in TADS is that the double-blind was broken after 12 weeks, and those adolescents who had not responded to placebo were given the treatment of their choice. Thus, we do not know whether MDD simply ran its course for the majority of adolescents irrespective of treatment intervention(s), but the consensus from TADS was that CBT "worked" but took more time than either combination treatment or fluoxetine alone (TADS Team, 2007). It should be noted that the two versions of CBT that were combined to form the treatment in TADS were considerably more intensive than 12 weekly sessions (i.e., Brent's CBT lasted 16 weeks, the CWD-A consists of 32 hours of group intervention). Other explanations for the poor results of CBT in TADS were that the intervention was a hybrid CBT that had not been tested previously and that contained too many components (Hollon, Garber, & Shelton, 2005). In hindsight, both of these concerns are reasonable, especially the suggestion that TADS CBT was overly structured and complex.

Promising New Approaches

Four emerging trends in CBT intervention appear to have especially strong potential for clinical impact, widespread implementation, or both. These include (1) shifting the CBT focus from treatment to prevention; (2) using CBT to augment (either failed or successful) medication treatment; (3) embedding CBT within standard medical care; and (4) using eMental Health approaches, either as a stand-alone treatment or a supplement to traditional CBT.

Shifting CBT from Treatment to Prevention

Applying the cognitive-behavioral (CB) model of depression intervention to prevention in adolescents is not new, but it remains an active area of research, and one that holds future promise. Greg Clarke modified the CWD-A to create a relatively brief (14–15 sessions) targeted prevention group intervention (called "Coping with Stress") for adolescents with either elevated depressive symptoms and/or depressed parent. The program significantly reduced MDD onset rates compared to usual care over 2-year follow-up in the initial efficacy trial (MDD onset rates were approximately 20 vs. 32%, respectively; Clarke et al., 2001) and more recently, in a large four-site study (37 vs. 48%, respectively; Beardslee et al., 2013). Before he joined me at ORI, Eric Stice developed a briefer (four- to six-session) group intervention ("Blues Program") that further simplified the intervention content, and found that it significantly reduced depression onset rates relative to assessment control over 2-year follow-up (14 vs. 23%, respectively; Stice, Rohde, Gau, & Wade, 2010). To my knowledge, six RCTs have collected diagnostic data over 2-year follow-up to evaluate CB adolescent depression prevention interventions to either assessment only, minimal intervention, or "usual care," with 17–58% lower MDD onset rates in the CB condition. Though not all studies had statistically significant differences, the consistent pattern of results appears clinically meaningful and important. Two factors that may encourage the use of CB prevention programs are that (1) pharmacotherapy is not recommended as an adolescent depression prevention intervention, and (2) most of these prevention programs are group-based, which may be a preferable method of delivering CBT (discussed below).

Using CBT to Augment Medication Treatment

The Treatment of SSRI-Resistant Depression in Adolescents (TORDIA) study was an RCT of 334 depressed adolescents who failed to respond to SSRI treatment. Participants were randomized to four conditions, two of which involved medications only, and two of which involved medications plus CBT (which was partially based on TADS CBT). At the end of 12-week augmentation therapy, the combination of CBT plus either medication resulted in significantly higher response than did either medication alone (55 vs. 40%; Brent et al., 2008). Betsy Kennard has built on the idea that the most efficacious treatment may initially provide antidepressants to achieve symptom response/remission, followed by CBT to build on this positive response and reduce recurrence. This continuation CBT (labeled relapse prevention CBT) significantly reduced relapse over 30 weeks in those treated with 6 weeks of antidepressants followed by relapse prevention CBT compared to those treated with medication only (9 vs. 26%; Kennard et al., 2014).

Collaborative Care Models to Deliver CBT Embedded in Medical Care

Given that the vast majority of depressed young people (60–80%) do not receive treatment (Cummings & Druss, 2011), researchers are focusing on improving the quality of depression treatment in the primary care setting, using a team-based collaborative care approach. Richardson et al. (2014) evaluated 101 depressed adolescents in primary care, randomized to a collaborative care intervention or usual care. Collaborative care consisted of a depression care manager conducting an initial engagement session in which adolescents chose either brief CBT (selected by 38%), medication (4%), or combination therapies (54%), with regular follow-up over 12 months. After 1 year, adolescents in the collaborative care, compared to usual care, had a significantly higher response (68 vs. 39%) and remission (50 and 21%, respectively) rates. These approaches appear to be cost-effective and practical, as the large majority of adolescents have a regular primary care provider.

Using Other Modalities to Deliver CBT

As noted, few depressed adolescents (or adults) seek or are able to find treatment, due to therapist shortages, long waiting lists, lack of therapists trained in evidence-based practice, costs, and possibly stigma. Bibliotherapy offers a low-cost and readily available alternative intervention that has achieved a strong level of support for both depression treatment and prevention in adults (e.g., Gregory, Schwer Canning, Lee, & Wise, 2004). Even more appealing to adolescents are Internet-delivered CBT procedures, given increases in access and the greater potential for engaging interactive content. A meta-analytic review has found that, compared to wait-list control, Internet-delivered CBT for adults with mild/moderate depression achieved large between-group differences on self-report measures ($d = 0.83$; Arnberg, Linton, Hultcrantz, Heintz, & Jonsson, 2014). Interestingly, almost all of this research is happening outside of the United States (e.g., 88% of trials in Arnberg et al. had been conducted in Australia or Sweden). Very little research on either bibliotherapy or Internet-based intervention has examined depression treatment with adolescents, although computerized stand-alone CBT has been found to achieve higher remission rates for adolescents seeking depression treatment, but only among those who complete a minimum amount of homework (Merry et al., 2012).

FUTURE DIRECTIONS

Future directions in the area of CBT for adolescent depression are closely linked to significant unresolved issues. The first of these concerns the value of CBT relative to other approaches to adolescent depression treatment. It seems unlikely that CBT will be significantly superior to adequate doses of other evidence-based treatment (either psychosocial or pharmacological). Therefore, how do we personalize treatment delivery, providing an evidence-based match. Potential moderators include depression severity (especially when combination therapy is recommended), patient (adolescent or parent) preference, and possibly current parental depression (which negatively impacted the effectiveness of adolescent depression prevention [Beardslee et al., 2013]; does it also impact CBT treatment?). CBT for adult depression appears to reduce the risk of recurrence. Is that same outcome achieved for adolescent depression treatment? If not, can we figure out why?

A second major unresolved issue is how can CBT for adolescent depression achieve stronger effects. I see three areas for potential improvement. First, I agree with Hollon et al. (2005) that adolescent depression CBT may be too complicated, trying to address too many components without sufficient depth. Can we eliminate certain components without losing effects? When is a predominantly cognitive focus optimal, and when is a predominantly behavioral focus best? Many years ago, Rude and Rehm (1991) articulated two models of change, labeled “capitalization” (clients are most responsive to treatments that build on their strengths) and "compensation" (treatment is most effective when it specifically focuses on areas of greatest deficit). Depression treatments generally assume a compensation model, and some evidence supports this approach, but, to my knowledge, no RCT of adolescent depression treatment has specifically matched clients to CBT based on their strengths or deficits.

A third potential way of improving the impact of adolescent depression CBT is to clarify when and how parents should be involved. The current model consists of fairly limited parental involvement, mainly focused on psychoeducation and some targeted skills practice (e.g., communication and problem solving), but early evaluations found no evidence that parental involvement improved outcomes. Understanding the optimal level of parental involvement in CBT for depressed adolescents is complicated by the fact that high levels of parental involvement may be helpful in some cases (i.e., some parents are clearly strong and positive advocates) but be ineffective or even iatrogenic in others (i.e., parental involvement appears to exacerbate existing conflicts without adequate time/effort to resolve problems/teach new skills, "opening a can of worms"). At times, treatment seems best aimed at helping the adolescent more quickly individuate from the parents. Clarifying the circumstances in which to involve parents in CBT would be a valuable step toward the broader goal of personalizing interventions to achieve greater efficacy.

A fourth possible way to increase the effects might be to reexamine group-based CBT. The delivery of group-based CBT for treatment seems to have stalled, and there are clear logistical problems in conducting closed groups, such as the CWD-A. However, I wonder if groups might more easily deliver a thorough "dose" of CBT skills practice compared to individual care. Might adolescents in group therapy better tolerate the large amount of CBT skills practice that is needed to "overlearn" a skill, so it can be used in a time of emotional upset?

The fifth major unresolved area is how does CBT actually work, and what are the mechanisms of change? It is surprising how few studies have examined the mediators of response to CBT for adolescent depression. The available studies, which have almost exclusively relied on self-report questionnaire measures at the beginning and end of treatment, provide only limited support for mediation factors specifically proposed by CBT. Self-report measures are plagued with demand characteristics, so we need more objective measures, starting with the primary theorized treatment mechanisms of cognitive and behavioral change. Cognitive change could be measured by observational data on the speed and effectiveness of cognitive restructuring (can the teen do this in the lab?) or implicit tests, or some measure of the duration of emotional upset following an activating event. We need objective measures of behavioral change, perhaps including observational data of interactions with peers and parents, and measures of physical activity. I suggest we try to objectively measure both an increase in the diversity of pleasant/mastery behaviors and behavioral engagement as a distraction activity (the original Lewinsohn model of depression etiology hypothesized that increased self-focus led to increased dysphoria). Another potential mechanism of change may be the sense of hopefulness and self-efficacy that is provided by the CBT model. We know that change often happens very early in CBT, and it seems possible that the CBT change model itself, which is provided in the first session, makes strong intuitive sense, providing hope and structure. Last, researchers are beginning to incorporate neuroscience measures and have found that pretreatment brain functioning (i.e., reward-related brain function) may predict treatment response for depressed adolescents receiving CBT or CBT/antidepressant combination therapy (Forbes et al., 2010); these types of indices should also be examined to understand change in CBT.

The sixth important area for future CBT research involves how and when to use computer technology in its various forms ("eMental Health") in the treatment of adolescent depression. By its nature and focus, CBT may be more easily translated to a computerized format than other forms of talk therapy. Computer-based interventions can function as either stand-alone interventions or a supplement to more standard treatment; we need to examine both. Regarding stand-alone interventions, the two main questions seem to be (1) how to encourage engagement to complete the intervention, and (2) how to ensure sufficient safety monitoring. It will be easier to incorporate computers, the Internet, and smartphone methodology to supplement standard CBT, using the electronic technology to provide reminders of skills usage/homework practice, conduct more frequent assessments, and to allow clients to find answers to questions if confused and to have more frequent interactions with the therapist (a week can be a very long time in an adolescent's life). The most powerful method for incorporating computer technology into current CBT is yet unknown.

CONCLUDING COMMENTS

Adolescent depression continues to be extremely prevalent, debilitating, associated with high suicidality and increased psychiatric comorbidity. The CBT approach for treating adolescent depression has received a great deal of attention—the most attention of any psychosocial treatment and, I believe, the only talk therapy to be compared to antidepressant medication for depressed adolescents. Initially, results were very encouraging, but the control condition was often a wait list or a general intervention not directly focused on depression. In addition, the samples were often noncomorbid and of mild/moderate (rather than severe) depression levels. CBT is clearly better than nothing and probably better than usual psychosocial care, but it is not clearly superior to usual care involving antidepressant medications. We do not need another horse race comparing CBT to well-delivered forms of other treatments—it is unlikely to "beat" them. Rather, we need to identify which subset of depressed adolescents contains the best candidates for a CBT approach. Also, we need to focus on areas in which effective alternatives are less available (e.g., prevention, patients who have failed antidepressant treatment).

I believe CBT researchers also need to backtrack a bit and redesign CBT interventions so they achieve stronger effects for depressed adolescents. I have offered several suggestions (e.g., simplifying/focusing CBT, understanding how best to include the range of parents, using formats other than individual therapy) but there are undoubtedly other, equally valid avenues that should be considered. This revamping of CBT is likely to be most beneficial if it is grounded in more rigorous testing of what actually changes during the treatment process, compared to both other forms of psychosocial treatment and to pharmacotherapy. We need to look at the effects (and limitations) of CBT objectively, but we also need to creatively consider how the CBT approach can effectively treat a broader range of depressed young people.

ACKNOWLEDGMENTS

Our program of adolescent depression research has been funded by numerous grants from multiple sources. My research in this area has been funded by Grant Nos. MH41278 (Peter Lewinsohn, Principal Investigator), MH56238 (Paul Rohde, Principal Investigator), National Institute of Mental Health Contract No. N01MH8008 (TADS), the U.S. Department of Justice Grant No. 2000-JN-FX-003 (Paul Rohde, Principal Investigator), and the National Institute on Drug Abuse Grant No. DA21357 (Paul Rohde, Principal Investigator).

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CHAPTER 5

Treating Adolescent Depression Using Interpersonal Psychotherapy

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OVERVIEW OF THE CLINICAL PROBLEM

Adolescent depression is a prevalent and serious disorder that carries with it substantial impairment across several domains of functioning, including academic, social, and physical aspects of one's life. As described in the fifth edition of the *Diagnostic and Statistical Manual of Mental Disorders* (DSM-5; American Psychiatric Association, 2013), adolescent depression is characterized by depressed and/or irritable mood, loss of interest in school and recreational activities, feelings of boredom, sleep and appetite changes, low self-esteem, hopelessness, and, in some cases, thoughts of suicide and/or engagement in self-injurious behaviors. In contrast to adult depression, adolescent depression is often marked by mood swings, with periods of relative euthymia interspersed with periods of dysphoric mood, in the form of depression or irritability. Adolescent depression can interrupt developmental processes and lead to social dysfunction.

While a full review of the etiology of depression is beyond the scope of this chapter (see Thapar, Collishaw, Pine, & Thapar, 2012), it is important to note that depression likely results from the combination of biological vulnerabilities and environmental stressors. More specifically, several studies suggest that genetic polymorphisms related to the serotonin system interact with interpersonal stressors to result in depression among adolescents and adults (e.g., Caspi et al., 2003; Karg, Burmeister, Shedden, & Sen, 2011; Vrshek-Schallhorn et al., 2015). Research also indicates that interpersonal conflict and problematic peer relationships play a significant role in adolescent depression, thereby supporting the idea that intervention at the interpersonal level is likely to be beneficial (Allen et al., 2006; Sheeber, Davis, Leve, Hops, & Tildsley, 2007).

CONCEPTUAL MODEL GUIDING THE TREATMENT PROGRAM

Interpersonal psychotherapy for depressed adolescents (IPT-A; Mufson, Dorta, Moreau, & Weissman, 2004) was adapted from interpersonal psychotherapy (IPT; Klerman, Weissman, Rounsaville, & Chevron, 1984; Weissman, Markowitz, & Klerman, 2007) for depressed adults. The underlying concept of depression in IPT has its roots in the interpersonal theory of depression by Sullivan and Bowlby's attachment theory. Sullivan (1953) believed that mental health is dependent on experiencing positive interpersonal relationships, and that a lack of positive relationships can have a negative impact on mental well-being. Bowlby (1978) contended that humans have an innate drive to form interpersonal bonds, and interruptions or problems within those bonds give rise to emotional distress, including depression. Adolescence is a time during which interpersonal bonds are typically changing as teens desire increased autonomy from parents and become more connected to peers. Teens and parents need to learn to negotiate the tension between increasing independence and maintaining intimacy with one another. Problems within these transitions can lead to conflict and isolation, and eventually, depression. IPT-A has been adapted from the adult model to address more specifically the interpersonal issues unique to adolescence, including negotiating peer relationships and peer pressure, first romantic relationships, and parental separation and divorce.

The theoretical basis of IPT-A is that clinical depression takes place within an interpersonal context. Specifically, the onset and course of depression are influenced by the adolescent's interpersonal relationships with significant others. Intervening with specific interpersonal relationships during a depressive episode can change the course and treatment outcome. Depression is conceptualized as having three components: symptom formation, social functioning, and personality. IPT-A is a brief treatment that focuses predominantly on the present, and the therapist intervenes with only the first two components: symptom formation and social functioning. Depression is viewed as being caused by both biological predisposition and interpersonal experience. Although acknowledging the role biological factors may play, the assumption of IPT-A is that improvement in mood can be achieved with intervention at the interpersonal level. Specifically, IPT-A aims to decrease depressive symptoms and improve interpersonal relationships through psychoeducation and interpersonal skills building, and by creating a supportive therapeutic relationship that encourages the understanding and expression of affect.

Concurrent treatment with medication may be recommended when there is a lack of improvement after the initial phase or when the adolescent appears unable to make use of the therapy given the severity of symptoms. For example, antidepressant medication may be necessary if the adolescent's symptoms are not improving by the beginning of the middle phase. Adolescents with severe neurovegetative symptoms (e.g., lethargy and anhedonia) may warrant medication to increase their energy and motivation to engage in and therefore learn from psychotherapy. To date, there are no published clinical trials testing the efficacy of the combined use of medication and IPT-A.

The interpersonal content in IPT-A is focused on the problematic relationship that seems most closely related to the depressive symptoms. A primary interpersonal problem area is identified, for which the interpersonal skills are tailored with the intention that those skills will generalize to the adolescent's other relationships. For some adolescents, a secondary area may be identified, and the therapist facilitates generalization of interpersonal skills to the secondary problem area. There are four problem areas: interpersonal role dispute, role transition, interpersonal deficits, and grief (to be discussed in more detail below). In general, IPT-A is a time-limited outpatient treatment that is practical and didactic in nature and aims to highlight the interpersonal context of depression.

CHARACTERISTICS OF THE TREATMENT PROGRAM

Indications for IPT-A

IPT-A was initially developed as an individual outpatient treatment for clinical depression, with circumscribed but flexible inclusion of parents, for adolescents between ages 12 and 18 years. It is typically delivered over the course of 12 weeks, with a total of 12–15 sessions, depending on additional parent sessions that may or may not occur (Mufson, Dorta, Moreau, et al., 2004). It has been adapted to be delivered in school-based health clinics with 12 sessions delivered over 12–16 weeks: The first eight sessions are delivered weekly and the remaining four sessions are scheduled flexibly over the final 8 weeks. This enables the clinician to shift to a continuation model if the student is doing well, or to adapt to the school calendar. As in the adult model, when possible, monthly maintenance sessions are recommended to prevent relapse and recurrence, but formal study of the maintenance sessions with adolescents is needed.

IPT-A has been adapted for use as a group treatment for depressed adolescents (Mufson, Gallagher, Dorta, & Young, 2004) and as a group-based prevention program for adolescents at risk for depression due to subsyndromal symptoms (Young, Mufson, & Davies, 2006a; Young, Mufson, & Gallop, 2010; Young et al., 2016). We focus in this chapter on the original IPT-A protocol for individual treatment of depressed teens. IPT-A is commonly used with adolescents with comorbidities including anxiety disorders, attention deficit disorder, and oppositional defiant disorder. Based on clinical experience, IPT-A requires strong verbal skills, capacity for insight, and the ability to be seen once weekly as an outpatient. Thus, in its original form, it is not indicated for actively suicidal or psychotic adolescents, or for those who have bipolar disorder, are mentally retarded, and/or are actively abusing substances. Adaptations for specific populations (e.g., suicidal and bipolar adolescents) are being explored.

Content of Treatment: General Overview

The three primary components of IPT-A include education, affect identification, and interpersonal skills building. At the start of treatment and throughout, psychoeducation plays an important role. First, a thorough diagnostic assessment of depression is conducted and psychoeducation about depression, the limited sick role, and the adolescent's and the parents' roles in treatment is provided. In each subsequent session, the adolescent's symptoms of depression are reviewed so that he or she has a clear understanding of his or her treatment progress.

Affect identification is an essential part of IPT-A, because many depressed adolescents have difficulty labeling and expressing their feelings. Depressed adolescents typically engage in one of two extreme forms of affect expression, both of which can be problematic: the tendency to keep feelings (especially negative ones) to oneself and the tendency to express feelings in an impulsive or negative manner, which can exacerbate the problem. For some adolescents, affect identification may be simple, but linking specific emotions to an event may be more difficult. Others may be able to identify problematic relationships but do not see the connection to their emotions. IPT-A therapists assist adolescents with labeling their emotions, facilitate their expression of emotions with significant others, and help them to monitor their emotions and link their feelings to problematic relationships. Successful treatment allows the adolescent to have an improved understanding of the subtleties of different emotions, the types of interpersonal situations that may lead to positive and negative feelings, and how best to communicate his or her feelings.

Directly linked to affect identification is interpersonal skills building, which occurs in session and uses the adolescent–therapist relationship. The therapists model appropriate interpersonal skills and gives feedback to adolescents regarding their style of communication. In addition, specific didactic and experiential techniques are used throughout the course of treatment and are indicated for use with the majority of depressed adolescents, regardless of the specific problem area. These techniques include communication analysis, decision analysis, perspective taking, interpersonal problem solving, and role playing. Finally, more general strategies of IPT-A include involvement of parents, telephone contact between sessions to maintain therapeutic work, and consultation with the school as needed.

The structure of the IPT-A includes three phases: initial (Weeks 1–4), middle (Weeks 5–9), and termination phase (Weeks 10–12). The initial and termination phases of IPT-A are similar across adolescents, as their specific steps are followed in sequence. However, the middle phase is tailored to the specific problem area being addressed, and the individual techniques for the middle phase are used when indicated, based on the specific case. In this way, the IPT-A manual is fairly flexible and guideline-based.

Initial Phase

The initial phase (Weeks 1–4) includes several components: (1) identification and diagnosis of symptoms, (2) psychoeducation about depression, (3) assignment of the limited sick role, (4) completion of the interpersonal inventory, (5) identification of the problem area, (6) explanation of the theory and goals of IPT-A, and (7) setting of the treatment contract. To confirm a diagnosis of depression it is helpful to use a formal rating scale as a guide. A thorough review of depressive symptoms is completed in the first session and a review of the previously endorsed symptoms, in addition to suicidal ideation and behavior, should be completed in each subsequent session. In Session 2 and thereafter, the symptom review includes mood ratings (on a scale of 1 to 10), consisting of the average, best, and worst mood rating for the week. Therapist and client work to identify the specific events that coincided with the moments of feeling good and bad to improve insight into the link between events and emotions.

Psychoeducation about depression in adolescents may include information about the rates of depression in teens, common symptoms and co-occurring impairments, impact on functioning, and effective treatment strategies. Following psychoeducation, therapist explains and assigns the “limited sick role,” which refers to the notion that depression is similar to an illness such as pneumonia that affects the way adolescents function in their daily activities and that, when recovering, they will gradually start their activities and build back up to their baseline level of performance. Therefore, when depressed, adolescents should not be expected to complete their responsibilities as well as they did before. However, adolescents are encouraged to continue to engage in all activities to the best of their ability, because withdrawal from normal activities can worsen depression and/or hamper recovery. The goal is to remove blame from the depressed person and place it onto the illness itself. Parents also are encouraged to blame the illness and be less critical of their adolescents' functioning while depressed, and to recognize that it will improve as the depression remits.

The next step in the initial phase is to complete the interpersonal inventory over two to three sessions so that the appropriate problem area can be identified. Therapists ask adolescents to identify the most important people in their lives, especially in the story of their depression. This is done using the "closeness circle," a visual diagram of four concentric circles (see Figure 5.1). Adolescents are in the

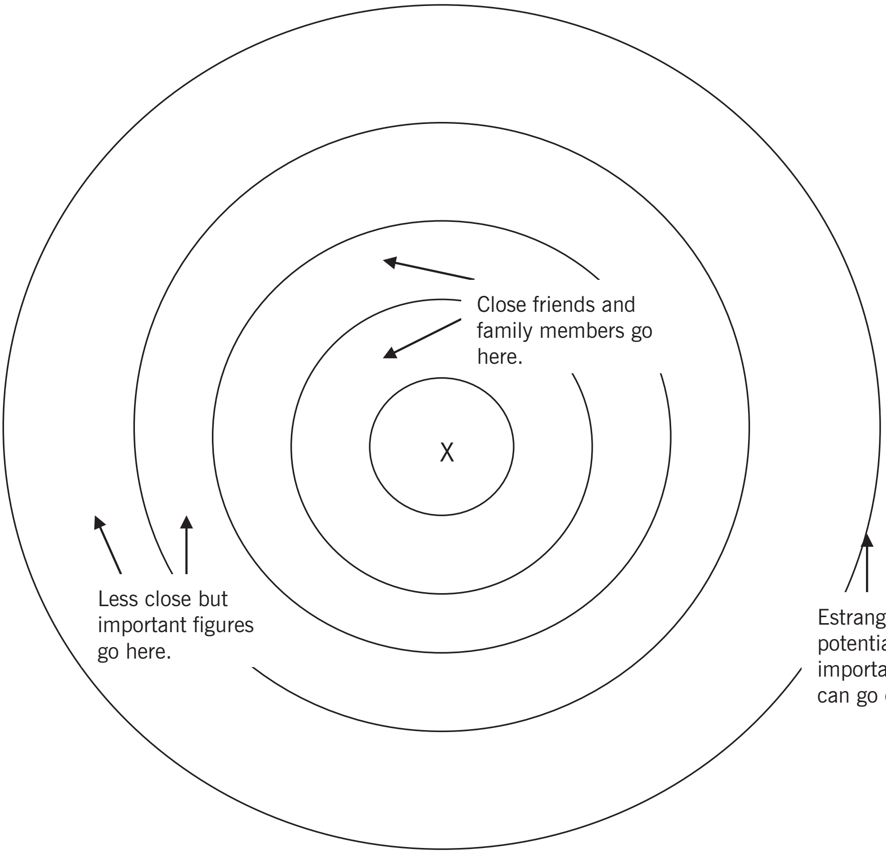

FIGURE 5.1. The closeness circle. The circle is completed by the therapist and adolescent during the interpersonal inventory and allows for a visual depiction of the adolescent's relationship structure.

center circle and place people within the different rings depending on how close they feel to them. Feelings of closeness are not necessarily always positive; a relationship can be seen as very important to the teen but currently is problematic due to conflict. Therapists ask adolescents to discuss four or five people who seem most related to the current depression to understand the following components of each relationship: nature of interactions, expectations, positive and negative qualities, desired changes in the relationship, and the depression's impact on the relationship and vice versa. It is important to ask questions about feelings and events linked to each relationship. With this information, one of the four problem areas (grief, role transition, interpersonal role dispute, or interpersonal deficit) is identified as an appropriate focus of treatment. See Table 5.1.

If two problem areas seem appropriate, the one that appears most primary is the initial focus with the possibility of addressing a secondary area if easily linked

TABLE 5.1. Interpersonal Problem Areas

Problem area	Definition	Goals
Grief	• When teens have experienced the death of a loved one • When that loss is associated with the onset or persistence of depressive symptoms • Depression may not have immediately followed the death	• Assist in mourning appropriately • Help reestablish relationships and interests to substitute for those lost • Help teens find ways to meet new people and develop new social relationships
Role transition	• When the adolescents experience difficulties linked to adjusting to a new situation • For example, transitioning to new developmental phase, gaining a new sibling or parent, becoming a caregiver, starting a new school • May lead to depression or exacerbate an already existing depression	• Find a way to accept and move into the new role with less difficulty • Develop new social skills • Develop new attachments and social support in the new role • Recognize and accept the positive aspects of the new role
Interpersonal role dispute	• When teens and significant others have different expectations for their relationship, leading to conflict • Common issues: sexuality, independence, money, intimacy • May precipitate or exacerbate depression • Irritability and withdrawal may intensify the dispute	• Identify the stage of dispute: renegotiation, impasse, or dissolution • Reach a resolution regarding the dispute • Improve social skills to engage in new relationships in the future
Interpersonal deficits	• When teens find themselves lonely and socially isolated due in part to a lack of social and communication skills • Lack of interpersonal skills contributes to the paucity of relationships and concomitant depression • Onset of depression often increases social withdrawal, hindering social relationships	• Improve social skills • Strengthen current relationships • Make new connections • Increase social support network

to the primary problem. For example, if an adolescent loses her mother after a battle with cancer and is having difficulty transitioning to living with her father, both grief and role transition may be relevant. Time may be spent first discussing the mother's death to allow for proper mourning, then shift to a discussion about how that loss has led to changes in her relationship with her father and the current specific difficulties she is experiencing with him.

During the final session of the initial phase, the therapists discuss the case conceptualization in relation to the identified problem area, amending it as necessary, based on adolescents' feedback. Adolescents are asked to summarize the problem formulation in their own words to ensure that they understand it and agree with the treatment goals.

Middle Phase

The structure of each session during the middle and termination phases should follow a similar pattern. The session typically begins with a brief check-in regarding depressive symptoms, the mood ratings, and a cursory review of the week's activities (with a focus on interpersonal events). The middle part of each session includes a review of adolescents' "work at home" and/or discussion of a particular interpersonal event from the past week, and practice of specific skills. Therapists assist adolescents in seeing continuity across sessions by placing content discussed in the context of the problem area formulation. Finally, therapists summarize what was discussed during the session, and "work at home" for the upcoming week is planned.

Several techniques are used in IPT-A across each of the problem areas: affect identification and expression (through directive and exploratory techniques), communication analysis, decision analysis, role playing, and "work at home."

Affect Identification

Therapists make an effort to assist adolescents in linking interpersonal experiences to changes in their mood and to understand their communication style, with the goal of improving interpersonal interactions and consequently their mood. Therapists help adolescents to identify their feelings by educating them about different emotions and their manifestation in behaviors and communication style, as well as the triggers for these emotions.

Communication Analysis

Communication analysis is indicated for use in many IPT-A cases, most commonly in the interpersonal role disputes problem area. The goal of communication analysis, which is a "play-by-play" review of a specific conversation between the teens and the other person involved in the problematic relationship, is to help the adolescents to understand the following: (1) the impact of their words on others; (2) the feelings they convey with verbal and nonverbal communications; (3) the feelings that generated the exchange; and (4) their ability to modify such exchanges, as well as the affect associated with the relationship and, consequently, their general mood. After the adolescents relate the conversation and the therapists intermittently link statements to feelings, therapists discuss how adolescents might have responded differently and therefore change the outcome and affect associated with the interaction. They then practice that revised conversation or plan a new one using specific communication skills that have been delineated for the adolescents on an information sheet, "Teen Tips" (see Table 5.2), which are the basic skills that therapists practice with the adolescents as needed in session, and encourage adolescents to use during "work at home" between sessions.

TABLE 5.2. Teen Tips: Communication and Problem-Solving Strategies

- **Aim for good timing.**
  1. Make "appointments" with people you need to talk to.
  2. Avoid times when those people are tired, upset, and so forth.

     Example: "Mom, I know you are pretty tired from working so hard today. There's something I want to talk to you about. Can we talk on Saturday after we clean?"
  3. Strike when the iron is *cold*–wait until you feel calm to have a discussion about the problem or conflict.

- **Give to get—start with a positive statement that shows you understand how they feel.**
  1. "Dad, I know how much you love me and want nothing to ever happen to me, but . . ."
  2. "Mom, I know you worked really hard today and you are probably pretty tired. I understand that but can I ask you a quick question. . . . Can I use the phone for 20 minutes?"

- **Use "I" statements.**
  1. Say how *you* feel about what they do.

     Example: "I feel frustrated and angry when you insist on my being home by 7 P.M. on Saturday nights because it seems like you don't trust *me* to be on my own with my friends."
  2. People cannot read your mind no matter how it seems. Put it in words! Start with "I."

     Example: "Mom, I feel sad when you . . ."; "Dad, I feel you don't trust me . . ."

- **Have a few solutions in mind.**
  1. If you want to work something out, do a little prep work! Come up with 3 or 4 compromises to whatever you are arguing about.

     Example: "Dad, I know you how much you worry about me when I go out after 7 P.M. on Saturday nights. But I feel really angry when you call me every five minutes on my cell phone. I love you, and I don't want to feel this way. Can we talk about some ideas that may make you feel better if I go out?

     Possible solutions:
     a. "How about if I call you every hour (every 2 hours)?"
     b. "How about if I let you speak with my friend's parents when I go to her house, and that I call you if I leave there so you know where I am?"
     c. "How about if I call you when we get to the movies, and then again when we leave, so you will know when to expect me at home? I promise I will call you immediately if we change plans."

- **Don't give up!**
  1. Remember, it takes a *long* time to teach someone to do something differently. Your parents/friends are used to handling things the way they have for *years. Keep trying!*

Note. Teen tips are introduced during the middle phase of treatment and are used during communication analysis, decision analysis, and role playing, and are prescribed for use in "work at home."

Decision Analysis

Decision analysis is used when adolescents are experiencing conflict. The goal of decision analysis is to teach basic problem-solving skills, including compromise and negotiation. The steps are similar to other therapies' problem-solving steps: (1) Identify the interpersonal problem, (2) generate many possible solutions, (3) evaluate the pros and cons of each possible solution, and (4) choose one solution to try over the next week. The execution of the solution is discussed and rehearsed in detail in the session before the adolescents try to implement it during the upcoming week. Therapists deemphasize the notion of the attempt succeeding or failing, instead referring to it as an experiment to provide more data about what may or may not be helpful for this relationship problem.

Role Playing

Role playing, a technique common to several therapies, is used frequently in IPT-A. Role playing is engaged in with three goals in mind: (1) to give adolescents a safe place to practice newly acquired interpersonal communication skills, (2) to provide an opportunity to receive constructive feedback before testing out a new skill in "real life," and (3) to increase teens' social confidence. It is effective to choose a more benign and specific situation to rehearse first to increase the likelihood of a successful experience. As the adolescents gain confidence in trying new skills, more difficult problems or interactions may be addressed.

Work at Home

Finally, "work at home" is used throughout the middle phase of treatment to assist with the reinforcement and generalization of the skills rehearsed in session. The specific "work at home" assignments should develop naturally out of the material discussed during the sessions. It is important when developing "work at home" to pick a circumscribed problem or interaction to change, something with a good likelihood of successful outcome. By starting small with encouraging results, adolescents will have the confidence to attempt to use these skills in more challenging situations. Consistent use of "work at home" allows the teens to internalize the new skills, gain a sense of mastery independent of their therapists, and, of course, improve important relationships.

Specific Strategies of Each Problem Area

The techniques we have described are used across the problem areas. In addition, there are specific strategies used to accomplish the goals of the targeted problem areas (see Table 5.1 for the goals).

1. *Grief.* Specific strategies include encouraging adolescents to speak about the loss in great detail; discussing events prior to, during, and after the death and the associated feelings; and helping teens find ways to meet new people and develop new social relationships to fill the void created by the loss.

2. *Role disputes.* First, one of three specific stages of the dispute is identified. The "renegotiation" stage is identified when adolescents and their significant others are still in communication with one another and both are willing to attempt to pursue conflict resolution. In the "impasse" stage, adolescent and significant others have stopped talking completely but resolution remains a possibility. The "dissolution" stage is identified when the adolescents and significant others have determined that they are unable to resolve the conflict and they have chosen to dissolve the relationship. For all three stages of role disputes, the techniques of affect identification, communication analysis, decision analysis, and role play are especially helpful. These techniques enable adolescents to better link their emotions to problematic events, understand their communication patterns, identify solutions to the conflict, and practice communication strategies that allow for effective negotiation and resolution of the conflict.

3. *Role transition.* Strategies include fostering an understanding of what the change means to adolescents, identifying the demands of the new role that are problematic, assessing what will be gained and what will be lost (from the old role), and mastering new interpersonal skills that will ease the transition. Comunication analysis is helpful in planning conversations that may be integral to accepting the new role, and role playing is an effective way to practice skills to help ease the transition.

4. *Interpersonal deficits.* IPT-A therapists relate adolescents' depressive symptoms to the problem of social isolation, review in detail past and current relationships to assist in identifying problematic and positive communication patterns, and rehearse new social skills for the formation of new relationships and deepening of existing ones. Role playing helps adolescents practice new skills in a safe, nonthreatening environment while therapists provide interpersonal feedback to the adolescents in a sensitive manner.

Termination Phase

In the final phase of IPT-A, Sessions 10–12, the goal is to assist adolescents in transitioning away from reliance on their relationship with the therapists to independent use of interpersonal skills. To accomplish this, therapists nurture a sense of competence to deal with future problems by discussing adolescents' feelings about the conclusion of treatment, reviewing skills learned and goals accomplished, identifying warning signs of depression and potential future challenges, and reviewing how the strategies can be used to more effectively handle these upcoming situations. At least one of the final sessions should include the parents, so that adolescents can explain to the parents the effective skills that have been acquired, potential future challenges, and warning signs of relapse. In addition, therapists should seek input from the parents regarding impact of the treatment on family functioning.

Further treatment is indicated if many symptoms of depression remain and/or impairment in functioning is still evident. Even if depressive symptoms have remitted, further treatment may be necessary for adolescents to address other, accompanying problems such as a history of sexual abuse or other trauma, or coping with a chaotic, unstable family environment. Therapists should discuss these options and the possible benefits of additional treatment with the adolescents and parents, and assist them in pursuing more treatment if desired.

Manuals and Training

Therapists interested in learning IPT-A can easily obtain the second edition of the treatment manual, *Interpersonal Psychotherapy for Depressed Adolescents* (Mufson, Dorta, Moreau, et al., 2004), which is available at bookstores and online. To become a formally trained IPT-A therapist, clinicians must attend a training workshop and receive supervision by an IPT-A expert on the treatment of several cases using audiotapes or videotapes to assess adherence and competence. Training workshops are offered biyearly by the International Society of Interpersonal Psychotherapy conferences, as well as by IPT experts at other times and upon request.

EVIDENCE ON THE EFFECTS OF TREATMENT

Several distinct research groups have examined the efficacy and effectiveness of individual IPT-A, and concluded that IPT-A is more efficacious than treatment as usual (TAU), clinical monitoring, and wait list, and as efficacious as cognitive-behavioral therapy (CBT) (Mufson, Dorta, Wickramaratne, et al., 2004; Mufson, Weissman, Moreau, & Garfinkel, 1999; O'Shea, Spence, & Donovan, 2015; Rosselló & Bernal, 1999; Rosselló, Bernal, & Rivera-Medina, 2008). The initial efficacy study completed by Mufson and colleagues (1999) compared 12 weeks of individual IPT-A to clinical monitoring (which included one or two 30-minute meetings with a supportive therapist each month) in a randomized clinical trial of 48 clinic-referred adolescents who met criteria for major depressive disorder (MDD). The majority of the participants in this study were Hispanic, female, and living in single-parent homes. Results indicated an average effect size of 0.54; 75% of those receiving IPT-A compared to 46% in the control group were recovered, with a score of ≤ 6 on the Hamilton Rating Scale for Depression (HRSD) at Week 12. Both the Beck Depression Inventory (BDI) and the HRSD scores were lower at Week 12 (after the authors controlled for baselines scores) for IPT-A compared to the clinical monitoring. The dropout rate in the control condition was greater than that in the treatment condition. Furthermore, at Week 12, those in IPT-A reported significantly greater improvement in social functioning than those in the control condition, with authors controlling for baseline scores. Those in IPT-A reported greater improvement in Positive Problem-Solving Orientation and Rational Problem-Solving scales on the Interpersonal Problem-solving Inventory than those in the clinical monitoring group at Week 12, whereas no differences were noted on the other subscales.

Rosselló and Bernal (1999) conducted an efficacy study of IPT using their own adaptation of the original IPT manual (Klerman et al., 1984) for Puerto Rican adolescents. This randomized controlled trial included 71 depressed adolescents (54% female, ages 12–17 years) randomly assigned to three conditions: 12 weeks of IPT, 12 weeks of CBT, or wait-list control. Results indicated that both IPT and CBT were superior to the wait list in the reduction of depressive symptoms measured by the

Children's Depression Inventory (CDI). Based on the CDI scores, the effect size of IPT compared to the wait list was 0.73 and that for CBT compared to the wait list the effect size was 0.43. Furthermore, 82% of those who received IPT and 59% of those who received CBT were deemed "functional" (indicated by a score of ≤ 17 on the CDI) at Week 12. Notably, those in IPT, but not CBT, improved on self-esteem and social adaptation significantly more than those in the wait-list group. There were no significant differences between CBT and IPT at 3-month follow-up.

In light of the positive findings regarding the efficacy of IPT-A, Mufson, Dorta, Wickramaratne, et al. (2004) completed an effectiveness study comparing IPT-A to TAU in school-based mental health clinics to determine whether IPT-A could be effectively disseminated in school-based settings. Sixty four adolescents (84% female, 71% Hispanic, ages 12–18 years) who met study inclusion criteria (HRSD score of ≤ 10, Children's Global Assessment Scale (C-GAS) score of ≤ 65, and a diagnosis of adjustment disorder with depressed mood, depression disorder not otherwise specified, major depression, or dysthymia), were randomized to IPT-A (12 sessions over a 12- to 16-week period) or TAU. IPT-A was delivered by school-based clinic mental health clinicians (*N* = 7) trained and supervised in IPT-A by treatment experts. TAU was also delivered by school-based clinic mental health counselors (*N* = 6) and included mainly individual supportive psychotherapy. Results indicated an average effect size of 0.50 for IPT-A over TAU. At Week 12, adolescents in IPT-A reported significantly greater decreases in depressive symptoms than those in TAU. Fifty percent of those in IPT-A and 34% of those in TAU met the HRSD recovery criteria of ≤ 6. Differences on depression indicators between the two groups emerged at Week 8. Adolescents in IPT-A also experienced significantly greater overall improvement in functioning as measured by the C-GAS than did those in TAU. Social functioning on the Social Adjustment Scale—Self-Report (SAS-SR) was higher at Week 12 for IPT-A than for TAU groups. Two moderators were identified: age and depression severity. Specifically, IPT-A was more effective compared to TAU in older (15–18 years) and more severely depressed adolescents. In addition, depressed adolescents with comorbid anxiety who received IPT-A had a better treatment outcome than those who were treated with TAU (Young, Mufson & Davies, 2006b). IPT-A was also particularly effective for adolescents with high levels of parent–adolescent conflict (Gunlicks-Stoessel, Mufson, Jekal, & Turner, 2010). While those in IPT-A received more therapy hours than those in TAU, secondary analyses indicated that the difference in dose did not account for the significant differences in depression in the two conditions (Mufson, Gallagher, et al., 2004).

The results of this study are encouraging regarding the ability to disseminate IPT-A to settings other than research institutions. The study also demonstrates that IPT-A can be effectively taught to school social workers, using a fairly low-intensity training program (i.e., reading the IPT-A manual, 1 day of didactics, and weekly supervision). The parsimony of the IPT-A model may be one reason for the success of the effectiveness study.

Rosselló and colleagues (2008) conducted an additional efficacy study of IPT-A, this time comparing group IPT-A with individual IPT-A, individual CBT and group CBT. One hundred twelve adolescents (ages 12–18 years, 55% female; 100% Hispanic) were randomly assigned to one of the four treatment conditions and received 12 weeks of treatment. Those in the individual formats met with a therapist once per week for 1 hour, and those in the groups met once per week for 2 hours. Results indicated that all formats led to significant decreases in depressive symptoms. Analyses of clinical significance suggested that 62% of the participants in CBT and 57% in IPT were functioning in the nonclinical range of depression at posttreatment. A greater proportion of CBT compared to IPT-A participants moved from a clinical range to a normative range of depression symptoms. Results suggested that there was little difference in overall efficacy between group and individual treatment formats (Rosselló et al., 2008).

An additional group of researchers compared individual IPT-A with a group IPT-A format among 39 adolescents (85% female, ages 13–19 years) diagnosed with MDD (O'Shea et al., 2015). Results indicated that in both conditions, participants displayed significant decreases in depressive and anxious symptoms and increases in overall functioning that were maintained at 12-month follow-up. Subsequent analyses demonstrated that the adolescents who showed greater decreases in depressive symptoms showed greater increases in social skills, and greater improvement in quality of parent–child relationships and attachment style compared to those whose depressive symptoms were not as improved (Spence, O'Shea, & Donovan, 2016). This suggests that positive changes in interpersonal functioning may account for the decrease in depressive symptoms. Further research with larger samples is needed to examine more formally the potential mediating relationships.

Overall, IPT-A has demonstrated a moderate to moderately large effect size for effectively improving depression and overall functioning compared to clinical monitoring, wait-list control, and TAU (Mufson et al., 1999; Mufson, Dorta, Wickramaratne, et al., 2004; Rosselló & Bernal, 1999; Rosselló et al., 2008; Spence et al., 2016). The effect sizes reported for IPT-A, which range from 0.50 to 0.73, are comparable to other empirically supported treatments for depression in adolescents, such as CBT, with the exception of one CBT treatment that involved parents (McCarty & Weisz, 2007). One limitation in the support for IPT-A is the small number of studies that have been conducted. The evidence base would be strengthened by additional studies with larger, more ethnically and gender-diverse populations. It is possible that methods of recruitment have resulted in disproportionately female samples. Additional research also should include long-term follow-up to assess the durability of the effectiveness of IPT-A, as well as studies that compare the use of medication alone or in combination with IPT-A, and that allow for further examination of mediators and moderators of outcomes.

FUTURE DIRECTIONS

Several adaptations of IPT-A have been evaluated. IPT-A has been adapted for use with groups of depressed adolescents (Mufson, Gallagher, et al., 2004). In addition, IPT-A has been adapted as a preventive intervention for adolescents with subthreshold symptoms. Interpersonal psychotherapy–adolescent skills training (IPT-AST; Young et al., 2006a) is a predominately group-based intervention that teaches communication and interpersonal problem-solving strategies to improve relationships and prevent the development of depression in adolescents. IPT-AST has been shown to be effective in decreasing depression and anxious symptoms, improving overall functioning, and preventing the onset of depression diagnoses as compared to individual school counseling in two studies (Young et al., 2006a, 2010, 2012). A recently completed study of adolescents (mean age = 14.0 years, 67% female, 38% Hispanic, 32% racial minority) compared IPT-AST to groups delivered by school counselors and found significantly greater rates of improvement in depressive symptoms and overall functioning in IPT-AST youth in the first 6 months following the programs. However, there were no significant differences in rates of depression diagnoses between the two conditions (Young et al., 2016). Taken together, these studies support the efficacy of IPT-AST as a depression prevention program for youth with elevated depressive symptoms.

IPT also was adapted as an intervention for prepubertal depressed youth, family-based interpersonal psychotherapy (FB-IPT) for depressed preadolescents. FB-IPT involves parents in weekly sessions to directly address parent–child conflict and interpersonal impairment (Dietz, Mufson, Irvine, & Brent, 2008). In a randomized controlled clinical trial comparing FB-IPT to child-centered therapy (CCT), preadolescents (ages 7–12 years, 67% female) receiving FB-IPT had higher rates of remission; fewer depressive symptoms; a greater decrease in depressive symptoms from pre- to posttreatment; as well as greater reduction in anxiety symptoms and interpersonal impairment at posttreatment by clinician interview and parent- and child-reported measures than those receiving CCT (Dietz, Weinberg, Brent, & Mufson, 2015). The results suggest that FB-IPT is an efficacious psychosocial intervention for achieving remission from depression and decreasing preadolescents' anxiety and interpersonal impairment. Larger studies are needed to further test the effectiveness and transportability of the model to community settings.

In an attempt to further increase access to care for depressed adolescents, a pilot study was conducted to examine the feasibility and acceptability of delivering a stepped care model of IPT-A (SCIPT-A) compared to usual care for depressed adolescents (ages 13–20 years, 79% female, 96% Hispanic) in pediatric primary care (Mufson, Rynn, Yanes-Lukin, Choo, & Wall, 2014). The SCIPT-A model includes eight 8 weekly sessions of a brief version of IPT-A in the first phase, followed by maintenance treatment if the adolescent responded, or treatment was "stepped up" to combined IPT-A plus medication (if the adolescent did not respond sufficiently by Week 8) in the second phase of treatment. Adolescents demonstrated good attendance at sessions, as well as good adherence to the treatment, including compliance with medication treatment when recommended. The results suggest that SCIPT-A is an acceptable and feasible model for treating adolescent depression in a primary care setting, specifically one serving Latino youth and families. Further research is needed to assess the efficacy of SCIPT-A and to better understand the integration of stepped collaborative care models for depression treatment in primary care to ensure the greatest access to services for adolescents.

Finally, IPT-A was adapted for use with Taiwanese adolescents who reported depressive symptoms and indicated suicide risk based on a clinical interview following a positive response on initial screening questionnaires (Tang, Jou, Ko, Huang, & Yen, 2009). Participants were randomly assigned to receive TAU ($n = 38$) or intensive IPT-A (IPT-A-IN; *n* = 35), both of which were delivered in the school. In IPT-A-IN, depression and suicidal ideation were linked as both being due to interpersonal conflict. Psychoeducation about depression and suicide was provided, and interpersonal skills were taught to decrease the depressive symptoms and suicidal ideation. TAU comprised general supportive therapy and psychoeducation. Treatment was two times per week for 6 weeks in the IPT-A-IN arm and once or twice per week in the TAU arm. Results indicated that those in the IPT-A-IN group displayed greater reductions on all outcome measures, including depression, anxiety, suicidal ideation, and hopelessness, than those adolescents receiving TAU. The study provides additional support for the use of IPT-A with depressed adolescents reporting suicidal ideation without intent or plan.

CONCLUDING COMMENTS

Adolescent depression is a prevalent and impairing disorder. The need for effective and feasible psychosocial interventions for the treatment of this disorder is clear. IPT-A is a brief empirically supported psychotherapy that can be effectively administered by clinicians of varying levels of expertise. IPT-A demonstrates that the course of a depressive episode can be changed with intervention at the interpersonal level. The main components of IPT-A include psychoeducation, affect identification, and interpersonal skills building. A problem area—grief, role transition, interpersonal role dispute, or interpersonal deficit—is identified as the treatment focus. Specific skills taught over the course of treatment are tailored to the individual. These skills focus on improving communication, perspective taking, problem solving, and expression of affect.

Several studies have assessed the efficacy and effectiveness of IPT-A and more are under way examining various adaptations of the IPT-A model. Research supports the inclusion of IPT-A as a recommended treatment in the American Academy of Child and Adolescent Psychiatry's Practice Parameters for the Treatment of Adolescent Depression (Birmaher, Brent, & AACAP Workgroup on Quality Issues, 2007). IPT-A is included as an efficacious treatment in the Substance Abuse and Mental Health Services Administration's National Registry of Evidence-Based Programs and Practices, and meets the American Psychological Association's criteria for a "well-established" psychotherapy for youth depression (David-Ferdon & Kaslow, 2008). Most importantly, IPT-A can be learned and delivered by community clinicians with reasonable adherence and competence to get effective results.

ACKNOWLEDGMENTS

The research reported in this chapter was supported by grants from the National Institutes of Health (Nos. MH087481, MH071320, MH091320, MH079353, MH60570, and MH48715), the Substance Abuse and Mental Health Services Administration (No. SM52671), and the National Association for Research on Schizophrenia and Depression Young Investigator Award (Jami F. Young).

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SECTION B

EXTERNALIZING DISORDERS AND PROBLEMS

CHAPTER 6

The Evolution of the Oregon Model of Parent Management Training

An Intervention for Antisocial Behavior in Children and Adolescents

Marion S. Forgatch and Abigail H. Gewirtz

The era of efficacy trials has morphed into a phase of effectiveness trials and implementation studies. Several efficacious programs have been identified, with the specifics of their credentials listed on clearinghouses. Efficacy trials test their programs within narrow constraints; when they are transported into real-world conditions, their effect sizes tend to shrink significantly (Weisz, Ng, & Bearman, 2014). Nevertheless, many programs sustain their credentials following the transfer of programs from carefully controlled conditions to community service agencies. This chapter describes the Generation Parent Management Training—Oregon (GenerationPMTO) program, which was previously known as the Parent Management Training—Oregon Model (PMTO®). We describe the intervention and adaptations that have been carried out and tested as the program has traveled from Oregon to different contexts, cultures, and countries.

OVERVIEW OF THE CLINICAL PROBLEM

GenerationPMTO, an evidence-based parenting program (EBPP) that addresses child and adolescent behavior problems, focuses on antisocial behavior problems, including aggression, oppositional defiant and conduct problems, delinquency, and associated challenges such as symptoms of attention-deficit/hyperactivity disorder (ADHD), deviant peer association, substance use, internalizing behaviors, and academic problems. Nationwide studies indicate that the prevalence of severe antisocial behavior in youth is approximately 5% (Vaughn, Salas-Wright, DeLisi, & Maynard, 2014); however, externalizing behavior problems more broadly account for well over half of youngsters' referrals for intervention (Kazdin, 2005; Patterson, Reid, & Eddy, 2002). When left untreated, these problems can presage later substance dependence, poor adult relationships, arrests, incarceration, disturbed mental health, violence, and employment difficulties (Dishion, 2016; Dishion & Patterson, 2016). Findings from GenerationPMTO studies using randomized controlled trials (RCTs), intent-to-treat (ITT) analyses, and multiple-method assessment have demonstrated GenerationPMTO benefits related to child and adolescent externalizing and internalizing problems (Dishion, Forgatch, Chamberlain, & Pelham, 2016; Forgatch, Patterson, DeGarmo, & Beldavs, 2009; Gewirtz, DeGarmo, Lee, Morrell, & August, 2015). By treating parents as agents of change for their children's problems, GenerationPMTO yields reductions in coercive parenting and increases in positive parenting practices. Collateral benefits to parents' psychopathology also are evident, including direct and mediated effects of the intervention on reductions in maternal depression (DeGarmo, Patterson, & Forgatch, 2004), posttraumatic stress disorder (PTSD), and suicidality (Gewirtz, DeGarmo, & Zamir, 2016). Additional benefits for parents include improvements in marital satisfaction (Bullard et al., 2010), increases in socioeconomic status (SES) (Patterson, Forgatch, & DeGarmo, 2010), and reductions in poverty (Forgatch & DeGarmo, 2007).

CONCEPTUAL MODEL GUIDING THE TREATMENT PROGRAM

The GenerationPMTO intervention is based on social interaction learning (SIL), a clearly articulated theoretical model that has been tested experimentally (Forgatch et al., 2009, 2016; Forgatch & Patterson, 2010; Patterson, 2005). The developmental model specifies that contexts influence social environments and social environments shape patterns of social interaction through reinforcing contingencies. In the family domain, adverse contexts are presumed to increase the likelihood of coercive parenting, which erodes positive parenting. In the peer domain, harsh contexts associated with social disadvantage and other adversities can contribute to behavior problems by exposing youth to high densities of deviant peers (Dishion, Ha, & Véronneau, 2012; Forgatch et al., 2016). As a result of reinforcing contingencies in these social environments, youth learn patterns of behavior that generalize across social settings (e.g., home, school, community).

CHARACTERISTICS OF THE TREATMENT PROGRAM

GenerationPMTO treats parents as the agents of change and has found them best suited to address their children's behavior problems by strengthening parenting practices, the presumed mechanisms of change (Forehand, Lafko, Parent, & Burt, 2014; Forgatch et al., 2009; Patterson et al., 2010). GenerationPMTO programs teach parents strategies to increase positive parenting practices and decrease coercive parenting. Five parenting practices form core content components taught in every GenerationPMTO program: teaching through encouragement (contingent positive reinforcement), positive involvement with children, effective family problem solving, monitoring and supervision, and effective limit setting. Auxiliary skills supporting the core components include clear directions, emotion regulation, and effective communication.

In addition to content that teaches parents what to do, GenerationPMTO programs evaluate practitioners' delivery. Within GenerationPMTO programs, active teaching skills stress the use of role play and problem solving to engage parents in the learning process; clinical skills employ standard relationship-building practices, such as support and effective questioning. Thus, the GenerationPMTO fidelity measure evaluates not only proper application of content but also process variables, including session structuring, active teaching, use of clinical skills, and promotion of a quality therapist–client relationship (Forgatch, Patterson, & Gewirtz, 2013).

Wide-scale implementation of GenerationPMTO began at the turn of the new millennium with a nationwide program in Norway. The program initially served clinical populations in child welfare and child mental health, and has since spread to serve prevention samples in primary care and municipal social services (Forgatch & Kjøbli, 2016; Ogden, Amlund Hagen, Askeland, & Christensen, 2009). Large-scale implementations have also taken place in Iceland; the Netherlands; Michigan; Denmark; Kansas; New York City; and British Columbia. Beyond these implementations, the program has been adapted and tested in small-scale trials for diverse populations, including military families; Latino immigrants; and families affected by homelessness, domestic violence, and war.

The foundational findings from GenerationPMTO efficacy and effectiveness trials and large-scale implementations have made it possible to examine moderators of intervention for program tailoring or personalization. Advances in technology have also galvanized new program formats such as telehealth and online GenerationPMTO, accompanied by comparative effectiveness research to examine the benefits of such formats.

EVIDENCE ON THE EFFECTS OF TREATMENT

RCTs testing the efficacy of the intervention began in the late 1970s and early 1980s, including a prevention sample with preschoolers using a wait-list control design (Forgatch & Toobert, 1979), a clinical sample of socially aggressive school-age children comparing the intervention with community treatment as usual (Patterson, Chamberlain, & Reid, 1982), and a study comparing parent training with juvenile justice treatment as usual for multiply offending delinquent adolescents (Bank, Marlowe, Reid, Patterson, & Weinrott, 1991). In subsequent years, three parent training approaches for children's behavior problems emerged from the Oregon Social Learning Center (OSLC) group, with numerous efficacy and effectiveness trials leading to their establishment as empirically supported treatments: the Family Check-Up (FCU) model under the leadership of Thomas Dishion and colleagues; PMTO under the leadership of Marion Forgatch and colleagues; and the Treatment Foster Care Oregon (TFCO) model and Keeping Foster Parents Supported and Trained (KEEP), under the leadership of Patricia Chamberlain and colleagues. The FCU model promotes children's adjustment to family formation and adaptation; GenerationPMTO addresses family attenuation and maladaptation; and TFCO and KEEP support children and youth in families dealing with attenuation and dissolution. All three sets of programs are based on behavioral family therapy principles and have been evaluated in RCTs with replicated benefits and enduring positive outcomes for children and adolescents. Findings from these approaches are summarized in Dishion, Forgatch, Chamberlain, and Pelham (2016), and in Forgatch and Patterson (2010).

In the remainder of this chapter we describe a dynamic process to adapt and test the GenerationPMTO intervention for a variety of cultures and contexts. First, we summarize findings from one of the GenerationPMTO efficacy trials conducted in Oregon. We then describe adaptations of GenerationPMTO for culture and context that have been conducted in nationwide or statewide implementations and in smaller-scale settings. We summarize both types of research, illustrating how large-scale implementation provides a laboratory for further intervention research, and how small-scale adaptations can provide a springboard for subsequent larger-scale implementation. We conclude with a discussion of new research examining moderators of intervention, tests of delivery methods, and treatment tailoring/personalization using GenerationPMTO as an example.

Efficacy Trial Testing Parenting through Change: A Parent Group Program

This prevention program, delivered in 14 parent group sessions, has provided the foundation for adaptations within the GenerationPMTO family of interventions. *Parenting through Change* (PTC) was first tested with a sample of 238 recently separated single mothers and their sons in grades 1–3. The study, known as the Oregon Divorce Study, employed multiple-method and multiple-agent assessment conducted repeatedly over 9 years and included observations of parent–child interactions to score coercive and positive parenting practices and child behavior, teacher reports, arrest records, and parent and child reports. Studies examined comparative effects for the PTC group versus the no-intervention control (Forgatch & DeGarmo, 1999; Forgatch et al., 2009, 2016; Patterson et al., 2010).

Here we describe two intervals: baseline to 30 months and baseline to 9 years. From baseline to 30 months, positive outcomes for mothers included increased positive parenting, decreased coercive parenting, decreased maternal depression, and a rise out of poverty. Benefits to child outcomes during this interval included reductions in internalizing and externalizing behavior, noncompliance, and deviant peer association (DeGarmo et al., 2004; Forgatch & DeGarmo, 2007; Forgatch, Snyder, et al., 2016; Martinez & Forgatch, 2001). Studies reporting 9-year youth outcomes include reductions in police arrests, delinquency, deviant peer association, and depression. Nine-year maternal benefits include reduced police arrests and increased socioeconomic status (Forgatch, Beldavs, Patterson, & DeGarmo, 2008; Forgatch et al., 2009; Patterson et al., 2010).

While long-lasting effects resulting from a 14-session parent group are significant, Snyder (2006, p. 43) points out that "it is as important to know how intervention works as it is to document that it works." Unfortunately, few parenting programs evaluate mechanisms of change to test their theories and explain their outcomes (Forehand et al., 2014). The Oregon Divorce Study tested the mechanisms of change specified in the SIL model within a RCT design with multiple-method assessment evaluated with ITT analysis and latent growth curve modeling. Each construct in the model was sequenced longitudinally such that changes in parenting were evaluated prior to changes in outcomes. To test the mediational effect of parenting, a set of 9-year models, one with arrest data and another with teacher ratings of delinquency as the significant outcomes, showed that the intervention first produced reductions in observed coercive parenting (baseline, 12 months), which in turn mediated intervention benefits to growth in observed positive parenting (12–30 months), which in turn mediated 9-year intervention effects on teacher-rated delinquency and records of arrests (Forgatch et al., 2008, 2009; Patterson et al., 2010). This same arrangement of mediators (coercive and positive parenting) mediated intervention effects on increased family SES (Patterson et al., 2010).

The SIL model also specifies that deviant peers serve as a mechanism for delinquency, and in this sample reduced deviant peer association served as a mediator for both delinquency and police arrests (Forgatch et al., 2009). The SIL model specified that benefits to parenting would mediate the intervention benefits to deviant peer association, but that link was not found. In a recent analysis of that dataset, the connection was found by breaking deviant peer association into two developmental phases: preadolescence, when the boys were in elementary school, and early adolescence, as the boys transitioned to middle school. Two models described the mediational relationship. As mentioned earlier, the intervention produced improved parenting practices from baseline to 30 months. For the preadolescent model, social disadvantage moderated effects on parenting practices, which in turn mediated growth in deviant peer association at 30 months. In other words, effective parenting was particularly important in mitigating deviant peer association for lower SES families whose children tend to experience higher densities of deviant peers in schools and neighborhoods. During early adolescence, a double-mediated model described the process: The relationship of improved parenting to youth's growth in deviant peer association at 6 years was mediated by reductions in growth of delinquency, which in turn prevented growth in boys' self-reported deviant peer association 6 years after baseline (Forgatch, Snyder, et al., 2016).

Mediational analyses have been conducted in other GenerationPMTO samples, for example, stepfamilies, Norwegian parents, and Pakistani and Somali parents who were immigrants in Norway (Bjørknes, Kjøbli, Manger, & Jakobsen, 2012; Forgatch, DeGarmo, & Beldavs, 2005; Forgatch et al., 2009; Forgatch & Kjøbli, 2016; Kjøbli, Hukkelberg, & Ogden, 2013; Ogden & Amlund Hagen, 2008). The set of replicated mediational studies within experimental designs supports the hypothesis that the core GenerationPMTO parenting practices are mechanisms of change across diverse cultures and contexts.

Adaptations of GenerationPMTO for Culture and Context

Large-Scale Implementations of GenerationPMTO

Below, we review the primary large-scale implementations of GenerationPMTO, highlighting the clinical research each implementation has produced. Descriptions of the implementation process can be found elsewhere (see, e.g., Forgatch & DeGarmo, 2011; Forgatch et al., 2013). Each implementation has required differing levels of adaptation. The opening gambit involves translation from English into local languages, adopting culturally relevant metaphors, and shaping parent materials to engage the families being served. Other tailoring is required to provide for specific contexts.

NORWAY

The first wide-scale GenerationPMTO implementation began in Norway in 1999. To facilitate implementation and stimulate clinical research, the Norwegian government developed the Norwegian Center for Child Behavior Development to manage the implementation of evidence-based intervention, as well as research, quality assurance, and subsequent intervention adaptations. By any metric, this initiative has proven highly successful. From the original group of 36 certified therapists, trained and certified by the model developer in 2001, 91% were still GenerationPMTO certified and practicing 8 years later (Forgatch et al., 2013). GenerationPMTO has been sustained with fidelity over 15 years, with well over 20,000 families served, and more than 1,100 practitioners operating from more than 600 registered workplaces across the country.

Norway Effectiveness Trials. Ogden and Amlund Hagen (2008) evaluated GenerationPMTO in a *nationwide effectiveness trial*. Families of 112 children with conduct problems were randomly assigned to GenerationPMTO ($n = 59$) or services as usual ($n = 53$). Families were recruited as they presented to clinics for child behavior problems in all health regions of Norway. Community mental health and child welfare professionals delivered treatment in individual family sessions. At posttest, GenerationPMTO reduced parent-reported child behavior problems with small effect sizes (with Cohen's d ranging from 0.20 to 0.33), and improved teacher-reported social competence ($d = 0.47$) and observed parental discipline ($d = 0.30$; Ogden & Amlund Hagen, 2008). At 12-month follow-up, small effect sizes (with d ranging from 0.20 to 0.29) were found for teacher report of delinquency, parent report of social competence, and observed total aversive behavior (Amlund Hagen, Ogden, & Bjørnebekk, 2011).

The parent group format of GenerationPMTO was tested in a wait-list control RCT with 137 families; significant benefits with large effect sizes were reported by parents at termination and at 6-month follow-up, respectively, for reduction in harsh parenting ($d = 0.87$ and 0.77) and increases in positive parenting (d = 0.88 and 0.95), small effect sizes on the Eyberg Intensity scale of the Eyberg Child Behavior Inventory ($d = 0.42$ and 0.47), and a medium effect size for increases child social competence at posttest (0.57) dropping to a small effect size at follow-up (0.38) (Kjøbli et al., 2013).

Adaptation Effectiveness Trials in Norway. GenerationPMTO has been adapted and tested in parent groups provided to Pakistani and Somali mothers in immigrant populations (Bjørknes & Manger, 2013). The wait-list control RCT, conducted by regular staff members of municipal child and family services, found ITT improvements in parent-reported conduct problems, which was mediated by reduced harsh discipline and increased positive parenting. Effect sizes ranged from small for conduct problems ($d = 0.32$) and harsh discipline ($d = 0.27$) to medium for positive parenting ($d = 0.54$), with larger effect sizes associated with greater participation in the groups (50% of sessions or more; Bjørknes et al., 2012).

The two ministries supporting implementation (Family and Child Affairs, and Social and Health Affairs) called for the development and nationwide testing of a GenerationPMTO-based preventive program to be provided in municipality and primary care services. An RCT tested brief parent training (three to six sessions), with benefits to outcomes in externalizing behavior and positive and harsh parenting practices as reported by parents (Kjøbli & Ogden, 2012). Some decay in reported Cohen's *d* effect sizes was found from posttest to the 6-month follow-up respectively: Eyberg Intensity Scale for behavior problems, 0.43 and 0.33; discipline, 0.58 and 0.34; positive parenting, 0.65 and 0.53 (Kjøbli & Bjørnebekk, 2013; Kjøbli & Ogden, 2012).

Norway Implementation Studies. Forgatch and DeGarmo (2011) tested whether the Norway implementation successfully maintained method fidelity. Fidelity was assessed from direct observation of therapy sessions at certification for three generations of GenerationPMTO therapists, the original generation (G1) trained by the Oregon developers, and two subsequent generations trained by the Norwegians (G2 and G3). There was a small but significant drop in fidelity for G2; however, by G3, fidelity scores were equivalent to those obtained by G1. Thus, GenerationPMTO fidelity was maintained by the Norwegian team after the program was transferred from the developer to the Norwegians. Studies showed sustained validity of the fidelity measure. In a nationwide sample of 238 families treated by 114 therapists, therapist fidelity predicted the magnitude of improvement in observed effective parenting (Forgatch & DeGarmo, 2011). In another study, the fidelity of 134 therapists was assessed three times during treatment with 331 families; fidelity scores predicted pre- and posttreatment change in parent report of child behavior problems (Hukkelberg & Ogden, 2013). The Norwegian team is currently (2017) training its seventh generation of GenerationPMTO practitioners.

Another study of the Norwegian implementation examined functioning of 83 therapists working within 67 social service agencies (Patras & Klest, 2016). Therapists working in clusters of three GenerationPMTO clinicians rated their workplaces more positively than those in agencies with only one or two GenerationPMTO therapists ($d = 0.80$). Findings were independent of agency size, leadership quality, service population, and therapist.

A recent study evaluated GenerationPMTO effects during the efficacy trial and following scaling up of the program (Tømmeraas & Ogden, 2015). The study tested the commonly held position that positive effects of an evidence-based program would attenuate when scaled up from the effectiveness phase to wide-scale dissemination (Welsh, Sullivan, & Olds, 2010). Tømmeraas and Ogden (2015) examined outcomes from the three generations of Norwegian therapists ($n = 238$) included in Forgatch and DeGarmo (2011). Contrary to expectations, effect sizes for the child outcomes of externalizing, internalizing, and social problems did not decrease following wide-scale GenerationPMTO dissemination. The failure to find attenuation effects suggests that GenerationPMTO has been implemented with sustained fidelity and effectiveness in Norway.

ICELAND

This small country with a population of fewer than 350,000 individuals was the second nation to implement GenerationPMTO on a nationwide basis in community service agencies of the child welfare and mental health systems. In the first effectiveness trial of an intervention for children's behavior problems, 102 clinically referred children were randomly assigned to GenerationPMTO or services as usual. Pre- and posttreatment ITT analyses demonstrated that compared to the control condition, GenerationPMTO treatment resulted in significant improvements in a child adjustment construct that comprised parent, teacher, and child reports of externalizing and internalizing problems and social skills with a medium effect (d = 0.54; Sigmarsdóttir, Thorlacius, Guðmundsdóttir, & DeGarmo, 2015).

MICHIGAN: STATEWIDE IMPLEMENTATION AS A RESEARCH LABORATORY

The implementation of GenerationPMTO in Michigan, beginning in 2005, was the first statewide implementation in the United States. Funded by service dollars, the aim was to install GenerationPMTO into routine clinical practice in community mental health clinics serving severely emotionally disturbed children. Eleven years later, Michigan has increased the original group of practitioners trained by the developer from 19 to nearly 300 Michigan-trained certified GenerationPMTO therapists working in 76% of the community mental health agencies. No research or evaluation funding was available. Through partnerships with researchers, however, Michigan's GenerationPMTO infrastructure has become a laboratory for examining GenerationPMTO adaptations, as well as moderators of treatment effectiveness. The availability of a large group of GenerationPMTO-trained therapists offering both parent group and individual family intervention has provided a foundation for small studies examining (1) participants' experiences of the intervention (Holtrop, Parra-Cardona, & Forgatch, 2014), (2) Latino families (Parra-Cardona, Holtrop, Cordova, Escobar-Chew, Horsford, et al., 2009; Parra-Cardona et al., 2012, 2016), and (3) preferences for GenerationPMTO treatment formats (He, Gewirtz, Lee, Morrell, & August, 2016). In the last, a randomized preference trial was undertaken in three mental health clinics in Detroit. Families (N = 129) presenting to clinics for children's conduct problems were recruited. Consenting parents were randomized to either select or be provided with a particular GenerationPMTO format: individual clinic-based, home-based, group-based, or services as usual (supportive child psychotherapy). Results revealed that those randomly assigned to the *choice* condition were significantly less likely to drop out of treatment than those assigned to the *no-choice* condition. Moreover, regardless of choice, those in the GenerationPMTO conditions demonstrated superior outcomes (improvements in observed parenting) compared with treatment as usual (He et al., 2016).

KANSAS AND NEW YORK CITY: GENERATIONPMTO IN THE CHILD WELFARE SYSTEM

The University of Kansas selected GenerationPMTO following a rigorous process of choosing an empirically supported intervention to increase reunification and improve quality of services in the child welfare system as part of a federal child welfare grant (Bryson, Akin, Blase, McDonald, & Walker, 2014). GenerationPMTO was implemented as an intensive individual intervention to be delivered in birth parents' homes. Treatment for families whose severely emotionally disturbed children were placed in foster care is being tested statewide in Kansas. Data from the formative evaluation with 76 families randomly assigned to GenerationPMTO or to treatment as usual found the intervention to be associated with higher rates of reunification for families in the GenerationPMTO compared to the control condition (Akin et al., 2014).

In 2012, the New York City (NYC) child welfare system adopted group-based GenerationPMTO as part of a linked approach with the KEEP foster care intervention (Chamberlain et al., 2016; see also Buchanan, Chamberlain, & Smith, Chapter 11, this volume). The project was a pilot study in preparation for an overhaul of the child welfare system policies and practices. In this case, *Parenting through Change–Reunification* (PTC-R; Forgatch & Rains, 2012), PTC adaptation for parents whose children had been removed from their care, was provided to the birth parents. Originally developed for families embroiled in the dependency court system in Detroit, Michigan, PTC-R helps families practice skills to increase the likelihood of successful reunification. Over 250 caseworkers and supervisors in five agencies serving over 2,000 children and families were trained. Unlike typical GenerationPMTO implementation, NYC declined a full-transfer approach, allowing trainees to receive just 1 week ofv training (compared to the standard 12–18 days) in addition to coaching three times per month. Chamberlain and colleagues documented the implementation and its early outcomes. ITT multilevel analyses demonstrated a significant beneficial effect for placement permanency (i.e., exit from foster care to reunification, adoption, or guardianship) but not stability in foster care (Chamberlain et al., 2016).

Developing and Testing Smaller-Scale Adaptations of GenerationPMTO for Families Affected by Highly Stressful and Traumatic Events

Awareness has increased for the role that effective parenting plays in promoting children's resilience following traumatic events (see, e.g., Gewirtz, DeGarmo, & Medhanie, 2011; Masten, 2001). Moreover, consistent with family stress and SIL models, traumatic events appear to impair parenting (Gewirtz, Polusny, DeGarmo, Khaylis, & Erbes, 2010). These two factors provide a rationale for adapting and testing GenerationPMTO for families affected by highly stressful and traumatic experiences (Gewirtz, Forgatch, & Weiling, 2008). GenerationPMTO adaptations include programs for families affected by domestic violence, homelessness, and military deployment to war. These adaptations have addressed (1) typical "topographic" changes based on the culture and context of the population and (2) changes specifically addressing the psychological needs (i.e., traumatic stress and related symptoms) of the target population. The programs incorporate the core and supporting parenting practices defined as central to the GenerationPMTO.

Homelessness and Domestic Violence

Gewirtz and colleagues (2015; Gewirtz & Taylor, 2009) modified GenerationPMTO for families living in domestic violence and homeless shelters, and tested its feasibility. Examples of contextual adaptations include helping parents (mostly mothers) to be effective at parenting "in public," that is, sharing common living spaces and sometimes even a bedroom. The extreme poverty that accompanies homelessness also required emphasizing rewards that cost little to nothing. In a feasibility trial of PTC with mothers in a domestic violence shelter, Gewirtz and Taylor (2009) reported high acceptability and strong retention (e.g., 70% mothers participated in at least 11 of the 14 sessions of the intervention).

EFFECTIVENESS TRIAL OF PTC FOR FORMERLY HOMELESS FAMILIES

This intervention was subsequently tested within a cluster-randomized trial of a comprehensive prevention program (Early Risers) for 161 homeless families (97% mothers). The comprehensive program included a child component (afterschool and summer camp programming) and a parent component (PTC; Gewirtz, DeGarmo, Plowman, August, & Realmuto, 2009). Random assignment was conducted with 15 transitional and supportive housing sites; eight sites were randomly assigned to the Early Risers program, which provided the child-focused activities in addition to the PTC intervention for all families with 5- to 12-year-olds, and seven sites were randomly assigned to early childhood and teen programming. ITT analyses demonstrated a medium to large main effect of the program at 2 years postbaseline on parenting self-efficacy ($d = 0.79$), and a large main effect of the program on parent-reported child depression ($d = 1.2$). Results also showed significant indirect effects of the program through improved parenting self-efficacy to improvements in observed parenting, with the model accounting for 16% of the variance in observed parenting (Gewirtz et al., 2015).

Military Families Affected by Deployment to War: After Deployment, Adaptive Parenting Tools

Gewirtz and colleagues developed a program of research to modify and test GenerationPMTO for U.S. military families affected by deployment to Iraq and Afghanistan in the wake of 15 years of wars. Known as After Deployment, Adaptive Parenting Tools (ADAPT; Gewirtz, Forgatch, Willer, & Rains, 2011), this GenerationPMTO adaptation addressed the emotion regulation difficulties that underlie posttraumatic distress (Brockman et al., 2016; Gewirtz & Davis, 2014) by adding mindfulness and emotion coaching components to strengthen parents' emotion regulation skills and their capacity to respond effectively to their children's emotions (Gewirtz, Erbes, Polusny, Forgatch, & DeGarmo, 2011). Originally designed as a group intervention, alternative delivery formats were subsequently developed, including an online format and a telehealth program (individual delivery of the program with a facilitator via WebEx).

ADAPT EFFECTIVENESS TRIALS

Three RCTs of ADAPT are complete or under way. The first effectiveness trial of the ADAPT 14-week parent group intervention included 336 Minnesota National Guard and Reserve families with a parent who had deployed to combat. Families were randomized to the ADAPT program or parenting print and Web resources. ITT analyses of covariance models (ANCOVAs) demonstrated significant improvements in pre- to posttreatment changes in parenting efficacy, with a medium effect for mothers ($d = 0.491$) and a small effect for fathers ($d = 0.290$). These proximal improvements in parenting efficacy subsequently led to reductions in mothers' and fathers' psychological distress and PTSD symptoms, emotion regulation, improved dyadic adjustment, and reductions in suicidality at 12-months postbaseline (Gewirtz et al., 2016). At 1-year postbaseline (i.e., 6–8 months following program completion), the ADAPT condition demonstrated small to medium ITT effects on couple parenting behaviors (*d* = 0.308) and small effects on parent-reported child outcomes (*d* = 0.262), and teacher-reported adjustment (*d* = 0.219). Indirect effects of the intervention were obtained through parenting to parent-, teacher-, and child-reported outcomes.

The ADAPT online trial included 97 families randomly assigned to a self-directed online version of the ADAPT program with 10 modules, teaching the key components of GenerationPMTO plus emotion regulation via mindfulness practice using video demonstrations and downloadable MP3 mindfulness exercises. ANCOVA models demonstrated medium effects for parent and child adjustment at posttest, mainly benefiting mothers and military personnel in the ADAPT condition. ADAPT showed medium effects on mothers' parenting efficacy (*d* = 0.561), and mindfulness (d = 0.640), and reported parenting behaviors of military personnel (*d* = 0.617) and mothers (*d* = 0.392). The intervention had medium effects on coparenting for military personnel (*d* = 0.500) and mothers (*d* = 0.569). Finally, a medium effect was obtained for parent-reported child behavior problems that benefited girls relative to boys (*d* = 0.478).

FUTURE DIRECTIONS

Adaptations of GenerationPMTO for Latino Families

A group of bicultural, bilingual researchers from Puerto Rico, Mexico, and Brazil began adapting GenerationPMTO for Latino families within the United States and Latin America to ensure cultural competence. Domenech Rodríguez (2008) developed *Criando con Amor: Promoviendo Armonía y Superación* (CAPAS), an eight-session intervention based on the PTC program, which was subsequently modified for Latino families in Detroit, Michigan. In the Detroit study, Parra-Cardona et al. (2016) compared the original CAPAS with a version highlighting attention to cultural values, finding that although families preferred the culturally modified program, there were no differences in retention (87%) or parenting outcomes between the two. CAPAS was also adapted for a pilot implementation project with 13 therapists in Mexico City (Baumann, Domenech Rodríguez, Amador Buenabad, Forgatch, & Parra-Cardona, 2014). The GenerationPMTO projects with Latino families have produced a scholarship focused on cultural adaptations deemed acceptable by families, and evaluating how much cultural adaptation is necessary to engage families. Plans are afoot to launch GenerationPMTO projects in Brazil, Puerto Rico, and to expand efforts in Mexico.

Families Displaced by War

In addition to the studies conducted with Somali and Pakistani immigrant families in Norway, a feasibility study by Wieling and colleagues (2015) has highlighted the relevance of GenerationPMTO for families affected by war in Uganda. The group spent 4 years laying the groundwork for an adaptation of GenerationPMTO for mothers affected by decades of war and unrest. *Enhancing Family Connection,* the nine-session group program based on PTC, was found to be feasible and acceptable, with 100% retention of mothers for all sessions and favorable qualitative findings (Wieling, Yumbul, Mehus, & Johannsen, 2012).

Developing and Testing New Delivery Formats for GenerationPMTO

The increasing popularity of telemedicine and families' broad access to high-speed Internet connections have enabled the development and testing of alternative delivery formats that are particularly useful to geographically dispersed families. A new comparative effectiveness trial is examining three formats of ADAPT with 360 National Guard and Reserve families in Minnesota and Michigan, randomly assigned to one of three versions of ADAPT: group-based, online, and telehealth delivery (Gewirtz, DeGarmo, Forgatch, & Marquez, 2014–2019). A Generation-PMTO implementation in British Columbia, Canada, via individual telephone delivery is also under way (Forgatch & Rains, 2015). It is not difficult to imagine a future in which GenerationPMTO programs might be available via social media, websites, apps, and in clinics, schools, hospitals, homes, and community centers, via in-person, phone, and virtual group and individual formats.

Multiple formats of an intervention combined with widespread implementation allow for studies that address questions of moderation and tailoring (i.e., what works best for whom, how, and when). In this respect, Michigan, with its statewide implementation of GenerationPMTO in the child mental health system, provides an optimal laboratory for further tailoring of the intervention—in this case, for individual needs and preferences. The randomized preference study described earlier (He et al., 2016) is but one example of what is possible in a community GenerationPMTO "laboratory." Further studies focused on tailoring or treatment personalization are a national priority (Collins, 2015) given low participation and high dropout rates in mental health treatment, particularly among those populations most in need.

CONCLUDING COMMENTS

Compared to parenting programs such as The Incredible Years (Webster-Stratton & Reid, Chapter 8, this volume), parent–child interaction therapy (PCIT; Zisser-Nathenson, Herschell, & Eyberg, Chapter 7, this volume), and Triple P (Positive Parenting Program; Sanders & Turner, Chapter 25, this volume), GenerationPMTO was a late entry to the implementation field. In our 15 years of implementation experience, we have weathered the pleasures and challenges of tailoring and testing the GenerationPMTO program in several countries and family contexts. GenerationPMTO researchers have produced studies indicating that implementation sites can sustain method fidelity and achieve positive outcomes in diverse samples on their own.

Our approach to implementation has some unique characteristics. First, we have carried our assessment method of direct observation from the laboratory into the community to evaluate competent adherence to GenerationPMTO content and procedures during intervention. All implementation sites are required to video-record therapy sessions and maintain reliable fidelity coding teams. To prevent drift over time and across sites, each site's fidelity team must pass an annual reliability test based on scoring therapy sessions that were prescored by the developer's team of reliable fidelity coders.

Another distinctive GenerationPMTO implementation approach is full transfer of the program from the developer to the community. The process involves intense collaboration between the program developer and adopting community through four stages (Forgatch et al., 2013; Forgatch, Rains, & Sigmarsdóttir, 2016). In the *preparation* stage, readiness activities gear up for system change. Practitioners are trained during the *early adoption* stage, and families are served during the *implementation* stage. During the *sustainability* stage, the developer transfers the reins of the program to the community, which then assumes responsibility for training, certifying, and recertifying therapists, coaching practitioners, and sustaining reliability of the fidelity coders. All sites are required to complete their annual fidelity test to maintain their GenerationPMTO license.

We have described GenerationPMTO program adaptation covering multiple stages and activities. For some cultures or contexts, program tailoring progresses slowly. For example, to adjust the program for war-displaced mothers in Northern Uganda, several years of preparation were required, including conducting focus groups, developing appropriate assessment procedures and intervention materials for a largely nonliterate sample, and engaging the mothers in a pilot parenting group to assess feasibility and acceptability (Wieling et al., 2015). The Norwegian implementation represents an easier transfer of the program with tailoring and testing activities. Norway, a well-resourced country, has invested in the establishment of a center that integrates intervention and research, which has enabled the group to set an example of how an infrastructure can extend program reach throughout the country without decay in effects to serve well-functioning, at-risk, and troubled families, including ethnically Norwegian and immigrant families.

We have described how program extensions in the United States have included families affected by traumatic stress. Populations have comprised families living in shelters or supportive housing because of homelessness or domestic violence, recent immigrants, families whose children have been removed because of abuse/neglect, and military families experiencing deployment to war. Each of these studies has had to tailor methods and materials for its target context and circumstances. GenerationPMTO has benefited from having a strong network of highly disciplined practitioner-scientists from early through senior level stages in their careers and from diverse cultures and countries. Each member of our team, each implementation site, and each challenge has extended the reach and application of GenerationPMTO. The rigorous evaluations and process studies conducted by our colleagues strengthen empirical validation for program generalization across multiple populations, contexts, and settings.

The state of science based on the GenerationPMTO program is enabling a new type of research aimed at increasing effectiveness of, and engagement in, EBPPs. This research investigates intervention moderators or putative tailoring variables and compares different formats or types of the intervention with populations facing diverse stressors. The execution of studies to examine moderators—such as sequential, multiple-assignment randomized trials (i.e., SMART designs) or comparative effectiveness trials—requires that multiple versions of an evidence-based practice and a validated, well-documented implementation model be available. This type of research can only be conducted when a field achieves a certain level of sophistication. We look forward to a new generation of studies on GenerationPMTO that can be conducted as a result of the foundational research reported here. We hope that those studies will increase access to EBPPs for families across the globe facing multiple, diverse stressors.

ACKNOWLEDGMENTS

The research reported in this chapter was supported by grants from the National Institutes of Health (Nos. MH 38318, DA16097, and DA 030114).

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CHAPTER 7

Parent–Child Interaction Therapy and the Treatment of Disruptive Behavior Disorders

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OVERVIEW OF THE CLINICAL PROBLEM

Parent–child interaction therapy (PCIT) is an evidence-based treatment for young children with disruptive behavior disorders (DBDs; Eyberg & Funderburk, 2011; Eyberg, Nelson, & Boggs, 2008). The DBDs are highly prevalent—estimated to be above 13% in preschoolers (Lavigne, LeBailly, Hopkins, Gouze, & Binns, 2009). The DBDs, which include oppositional defiant disorder (ODD) and conduct disorder, represent the most common reason for referral of young children to mental health services (Loeber, Burke, Lahey, Winters, & Zera, 2000). Early-onset DBDs are associated with significant impairments in social, emotional, and educational functioning, and predict adjustment difficulties into adulthood (Frick & Nigg, 2012).

A DBD diagnosis represents the most powerful risk factor for subsequent delinquent behavior, including interpersonal violence, substance abuse, and property destruction (Gau et al., 2007; Loeber, Green, Lahey, Frick, & McBurnett, 2000). These negative outcomes result in high costs for educational, mental health, law enforcement, and social services—estimated to be 10 times higher for children with DBDs than for children without problems (Lee et al., 2012). To reduce these high societal costs as well as significant emotional distress among children and families, early intervention is essential.

CONCEPTUAL MODEL GUIDING THE TREATMENT PROGRAM

According to Baumrind's (1966) developmental theory of parenting, parenting practices may be characterized as permissive, authoritarian, or authoritative, varying in degrees of demandingness and responsiveness. Baumrind (2013) has defined the "authoritative parent" as one who shows neither the coercive disciplinary style of an authoritarian parent nor the indulgent disciplinary style of the permissive parent, "but in contrast to both is responsive and demanding, confrontive and autonomy supportive, affectionate and power assertive" (p. 13). Based on Baumrind's conceptualization of parenting, PCIT draws from both attachment and social learning principles to teach authoritative parenting—a combination of nurturance, clear communication, and consistent enforcement of behavioral standards. The authoritative parenting style has been associated with fewer child behavior problems and better long-term mental health than alternative parenting styles across a diverse range of clinical populations (Luyckx et al., 2011; Querido, Warner, & Eyberg, 2002). Luyckx et al. (2011) demontrated that children reared with an authoritative parenting style had lower rates of substance abuse, antisocial behaviors, and internalizing symptoms as adolescents than children reared under other parenting styles. These findings have been confirmed in many countries that have highly diverse value systems, such as China, Pakistan, Hong Kong, Scotland, Australia, and Argentina (Steinberg, 1990, cited by Baumrind, 2013).

According to attachment theory, parental warmth and responsiveness to the young child contribute to the child's understanding of relationships. This in turn leads to greater emotional regulation and enhances the child's desire to please and willingness to comply. Conversely, unresponsive parenting is associated with insecure attachment, which is linked to child aggression and poor peer relations (Cohn, 1990; Vando, Rhule-Louie, McMahon, & Spieker, 2008). Moreover, an insecure parent–child attachment is related to increased maternal stress and risk of child maltreatment (Crittenden & Ainsworth, 1989).

The specific behavioral techniques taught in PCIT are based on social learning theory, which emphasizes how contingencies shape dysfunctional interactions between disruptive children and their parents. To interrupt the cycle of mutual and escalating aversive behaviors between children with DBDs and their parents, the parents must change their behaviors to incorporate clear limit setting in the context of an authoritative relationship. PCIT posits that a strong, secure attachment relationship is a necessary foundation for establishing effective limit setting and consistency in discipline, which lead to lasting improvements in the behaviors of both parent and child. The goal of the first phase of PCIT is therefore to increase parental responsiveness and establish a secure and nurturing relationship between parent and child. The goal of the second phase of treatment is to improve parental limit setting and consistency in discipline in order to reduce child noncompliance, aggression, and other negative behaviors. In the final weeks of PCIT, clinicians facilitate the caregivers' application of principles and skills taught in treatment to new challenges as they arise.

CHARACTERISTICS OF THE TREATMENT PROGRAM

Family Characteristics

Children and their parents are seen together in PCIT. Although most PCIT studies have included 3- to 6-year-olds with DBDs, both younger and older children from various clinical populations have reached successful outcomes in treatment. The evidence base for PCIT includes families from diverse ethnic and socioeconomic groups, as well as children with internalizing problems, cognitive disabilities, and physically abusive parents. Treatment may include one or both parents or other significant caregivers in the child's life.

Therapy Structure

The two phases of PCIT are called child-directed interaction (CDI) and parent-directed interaction (PDI). Each phase of treatment begins with a teaching session in which a therapist explains, models, and role-plays the CDI or PDI skills with the parents, followed by coaching sessions in which therapists coach parents as they practice the skills with their child. Coaching sessions begin with a brief review of the previous week, followed by a 5-minute coded observation of the parent–child interaction to determine which skills will be primary targets for the coaching. Most of the session time is spent coaching caregivers in the application of therapy skills.

Therapists typically coach from an observation room with a one-way mirror into the playroom, using a "bug-in-the-ear" system for communicating to the parents as they play with their child. Coaching consists of frequent, brief statements that give parents immediate feedback on their CDI or PDI skills (e.g., "Nice labeled praise"), their manner (e.g., "Excellent job staying calm"), or their effect (e.g., "Your descriptions are keeping her on task longer"). The therapist also offers suggestions (e.g., "You can praise that") or cues ("He asked you politely"). To prevent distraction from the play, these coaching statements are made only when neither child nor parent is speaking. Coaches tailor their coaching to the parents' vocabulary, style, and skill level.

At the end of each session, therapists review with parents a summary sheet showing how often they used each CDI or PDI skill during the initial observation. Therapists and parents then decide together which skill to focus on most during daily 5-minute practice sessions the following week.

Content of Treatment Sessions

Child-Directed Interaction

The primary rule for parents during CDI is to follow their child's lead. Parents learn to use specific communication skills (behavior descriptions, reflections, and labeled praise) to give positive attention to their child's appropriate play. Parents also learn not to use certain communications (commands, questions, and criticism) that attempt to lead and may be intrusive in child-led play (see Table 7.1). By giving attention only to positive child behaviors in this initial phase of treatment, parents learn to use the technique of differential social attention to shape their child's behavior.

If the child becomes disruptive during a CDI session, parents are coached to ignore the disruptive behavior by looking away and not talking or gesturing to the child. Ignoring negative behavior helps the child understand the difference between parental responses to positive and negative behaviors. Parents are advised that the ignored behavior may get worse before it gets better and that they must continue ignoring until the ignored behavior stops. Parents are then coached to provide the positive attention skills immediately when an alternative positive behavior occurs. Parents are also coached to stop the interaction for behaviors that are aggressive or destructive. Therapists coach the parent to explain that the child's special time has ended because of the destructive or aggressive behavior (e.g., "Special time is over because you [hit]"). Parents are encouraged to reengage in the CDI at a later time, when the child is calm.

Therapists continue to coach parents in using the CDI skills until parents meet the minimum criteria for mastery during the initial 5-minute observation: (1) 10 behavior descriptions; (2) 10 reflective statements; (3) 10 labeled praises, and (4) no commands, questions, or criticism. Once parents have met these criteria, they move to the second phase of treatment: PDI. Because the CDI skills form such an important foundation for establishing and maintaining effective discipline, however, therapists continue to observe and code 5-minute CDI interactions at the beginning of subsequent sessions. If parents fall below the criterion on any CDI skill, therapists coach these skills before moving to PDI coaching in that session. The 5-minute CDI home practice sessions also continue throughout treatment.

TABLE 7.1. Child-Directed Interaction Skills

Skills	Reasons	Examples
"Do" skills (positive following)		
Labeled praises	• Increase behavior that is praised. • Increase self-esteem. • Create positive feelings.	• "Good job of cleaning up!" • "I like how you're building so quietly." • "Thank you for sharing with me."
Reflections	• Let child lead the conversation. • Show that the parent is listening and understands. • Improve speech.	• CHILD: "I drew a tree." • PARENT: "Yes, a big tree by the house." • CHILD: "I made a choo-choo." • PARENT: "You *did* make a train."
Behavior descriptions	• Let child lead activity. • Show you are interested. • Hold the child's attention on the task.	• "You are building a fort." • "You drew six petals on your flower."
"Don't" skills (negative leading)		
Commands	• Take the lead away from the child. • Risks negative interaction.	• "Let's play with the cars." • "Give me the red car."
Questions	• May be hidden commands. • Suggest you are not listening. • Suggest you disapprove.	• "What color is this?" • "We're building a big house, aren't we?" • "You're putting red blocks on the tower?"
Critical statements	• Lower self-esteem. • Create unpleasant interaction. • Increase the criticized behavior.	• "You still have it wrong." • "That's not a good idea." • "Stop fidgeting."

Parent-Directed Interaction

The primary goals of PDI include decreasing noncompliance and inappropriate behaviors that do not respond to differential social attention or are too severe to ignore (e.g., hitting, destroying toys). Parents continue to give positive attention to appropriate behaviors in PDI. However, rather than exclusively following the child's lead, parents learn to give effective directions and to follow through consistently with calm, predictable responses to their child's behavior. Both parents and children know what consequences will follow the child's obedience or disobedience, which reduces parental anxiety and helps parents feel more in control of their child's behavior. This predictability also likely increases the child's sense of security within the parent–child relationship. Therapists teach parents eight rules for effective commands, which include the following:

- Make commands direct rather than indirect.
- Give one command at a time.
- State commands positively.
- Make commands specific.
- Give commands in a neutral tone of voice.
- Give developmentally appropriate commands.
- Provide an explanation prior to giving the command or after compliance.
- Use direct commands only when necessary.

Next, therapists teach parents specific steps to follow once a command has been given. If the child obeys, the parents give a labeled praise for compliance (e.g., "Thank you for listening!"), then return to the CDI skills until the next command is needed. If the child disobeys, the parents initiate the time-out sequence. Parents are taught never to ignore noncompliance, because noncompliant behavior is reinforced if the child is permitted to disobey. The time-out procedure provides concrete steps for parents to follow after a child disobeys, and ends with the child's compliance to the original command.

When the time-out procedure has ended, the parent is coached to give the child highly enthusiastic labeled praise for minding and to return to CDI. In this way, the child learns to seek the positive attention that follows compliance rather than the negative attention that follows noncompliance.

Measuring Therapy Progress

Therapists assess the family's progress through PCIT using both observational and rating scale data. Observations of parent–child interactions are coded weekly using the fourth edition of the Dyadic Parent–Child Interaction Coding System (DPICS-IV; Eyberg, Nelson, Ginn, Bhuiyan, & Boggs, 2013) to select the parenting skill targets for session coaching and to determine parents' progression through the protocol. The DPICS-IV is a behavioral observation system that measures the quality of the parent–child interaction. Clinicians record parent verbalizations that indicate following (e.g., behavior descriptions) and leading (e.g., commands), verbalizations that significantly lower the quality of the interaction (e.g., negative talk), and child responses (e.g., compliance, noncompliance, negative talk, prosocial talk).

Parents also complete weekly ratings on the Intensity Scale of the Eyberg Child Behavior Inventory (ECBI; Eyberg & Pincus, 1999). The Intensity Scale is a 36-item, 7-point scale that measures of the frequency of common disruptive behavior problems that occur at home (e.g., "Refuses to do chores when asked," "Sasses parent") and in social contexts (e.g., "Teases or provokes other children").

Parents must meet established criteria for both their observed skills and their ratings of child behavior for treatment graduation. Parents must also express confidence in their ability to manage their child's behavior on their own before treatment may end. Thus, PCIT is performance based rather than time limited, and the number of sessions varies from 10 to 20, with an average of about 14–16 sessions.

EVIDENCE ON THE EFFECTS OF TREATMENT

The first PCIT outcome study was published by Eyberg and Ross in 1978. The study included 85 children. Of these, 43 children were referred to a psychology clinic for assessment of behavior problems (Behavior Problem Sample), and 20 were referred for assessment of other issues, such as intellectual assessment (Non-Behavior-Problem Sample 1). There were also 22 nonreferred children recruited from the community for another study (Non-Behavior-Problem Sample 2). In Figure 7.1, Bar 1 illustrates the mean and standard deviation of the Behavior Problem Sample, and Bar 2 illustrates the two Non-Behavior-Problem samples. Bar 3 illustrates 10 children from the Behavior Problem Sample who were treated with PCIT. These 10 treated children had similar mean ECBI scores to the larger Behavior Problems Sample before they began treatment. At the end of treatment, their mean ECBI scores were similar to the Non-Behavior-Problem Samples' means. Pre- to posttreatment results were statistically significant. Figure 7.1 illustrates the clinical significance of results; the treated children fell from the clinical range to within the range of non-behavior-problem children after PCIT. Now almost 40 years later, PCIT outcomes have been examined in over 30 randomized controlled trials (RCTs) in the United States and abroad, showing similar results across symptoms, populations, and time.

The first RCT compared 37 children with ODD and multiple comorbidities to 27 similar children and families in a wait-list control condition (Schuhmann, Foote, Eyberg, Boggs, & Algina, 1998). Children showed significantly higher compliance during parent–child interactions and were rated as less disruptive on the ECBI after treatment than control children. Their parents reported higher internal locus of control and lower parenting stress than control parents. The treated parents also rated very high satisfaction with PCIT.

Subsequent studies have documented comparable changes for fathers of children with DBDs. Both fathers and mothers have demonstrated more positive parenting skills and fewer negative parenting behaviors, as well as lower parenting stress, depression, and anxiety. Furthermore, children's compliance increased during parent-directed interactions with both parents after treatment. Fathers and mothers also reported lower child internalizing and externalizing behavior problems after PCIT (Eyberg, Boggs, & Jaccard, 2014).

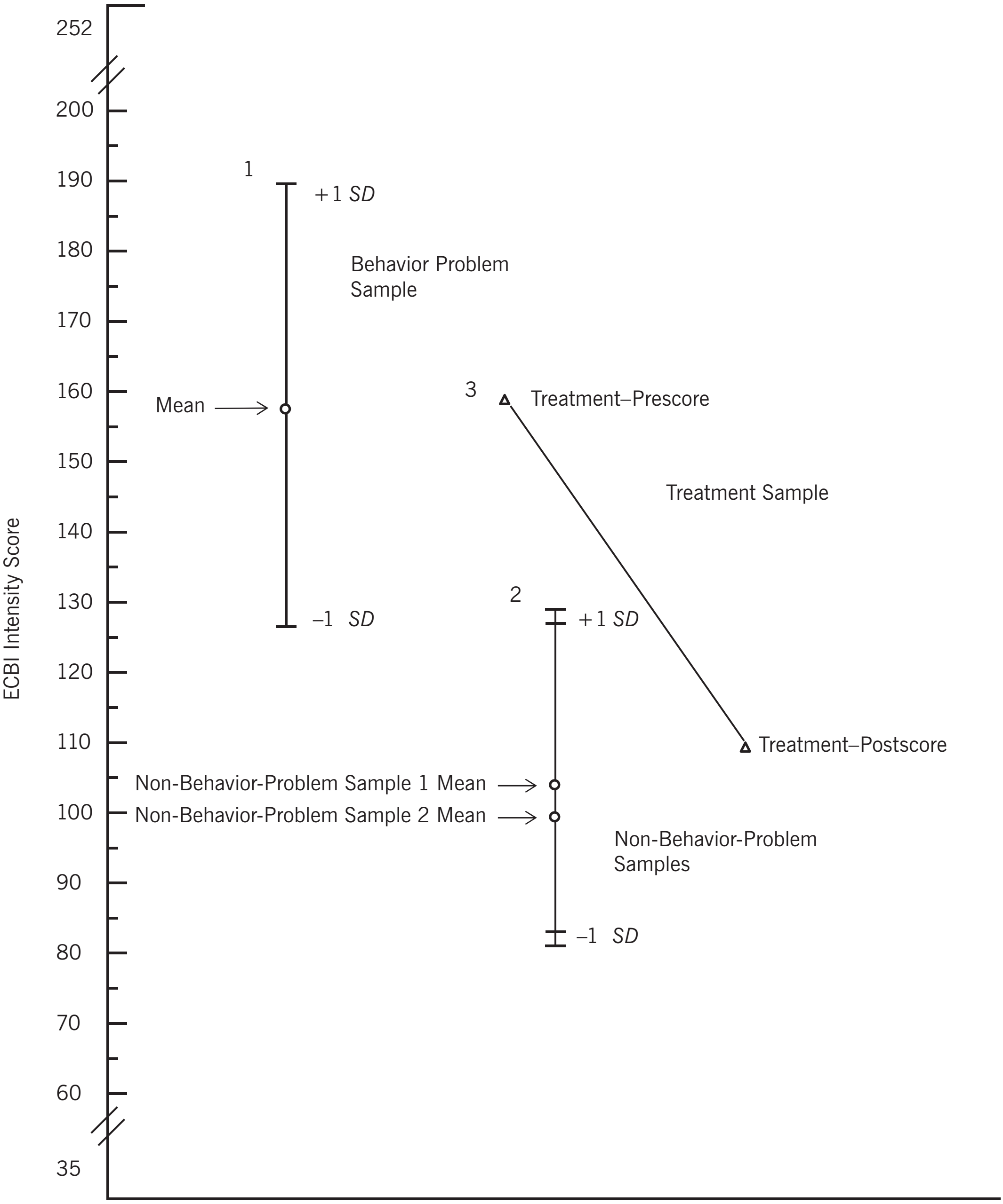

FIGURE 7.1. Eyberg Child Behavior Inventory (ECBI) Intensity scores before and after PCIT in the first PCIT outcome study (Eyberg & Ross, 1978): Score comparisons with behavior problem and non-behavior-problem samples. Bar 1 shows the range of scores within one standard deviation of the mean of the behavior problems sample. Bar 2 shows the range of scores within one standard deviation of the means of the two non-behavior-problem samples. Bar 3 shows the treatment sample before and after PCIT. At posttreatment, the average disruptive behavior intensity score fell within one standard deviation of the means of the two non-behavior-problem samples. This shows that the children receiving treatment fell from the clinical range to within the range of non-behavior-problem children after PCIT.

Generalization of Treatment Effects

The earliest studies of generalization of the effects of PCIT focused on changes within the family system. In addition to improved parental mental health, nontreated siblings showed positive changes as well. Although the siblings of target children had fewer behavior problems than the treated children initially, they nevertheless showed more disruptive behavior than same-age peers and, like the treated children, their behavior was significantly improved after PCIT (Brestan, Eyberg, Boggs, & Algina, 1997; Eyberg & Robinson, 1982). Treatment generalization also extends outside the family for the treated child. Specifically, without teacher consultation or direct intervention in the classroom, children show significantly improved classroom behavior after PCIT relative to classroom controls, as measured by teacher ratings of disruptive behavior (McNeil, Eyberg, Eisenstadt, Newcomb, & Funderburk, 1991). Behavioral observations of off-task and inappropriate behaviors have also shown significant improvements in the classroom after PCIT (Bagner, Boggs, & Eyberg, 2010). Teacher reports of improved classroom behaviors have been shown to last for at least 18 months after PCIT, even though many of the children had moved on to new classrooms and teachers over that time (Funderburk et al., 1998).

Maintenance of Treatment Effects

Several studies have demonstrated long-term gains in children's behavior with their parents following PCIT. In the first long-term follow-up study of PCIT, decreases in parent and child negative behaviors and increases in positive behaviors and child compliance from baseline to 2 years after treatment showed moderate to large effect sizes for the 13 families who completed the follow-up (Eyberg et al., 2001). Parent ratings of child behavior problems, child activity level, and parenting stress significantly improved from baseline, and most of the children remained free of disruptive behavior diagnoses after 2 years (Eyberg et al., 2001).

A second study compared longitudinal outcomes of 23 treatment completers and 23 treatment dropouts 1–3 year after entering treatment (Boggs et al., 2004). Families who completed treatment continued to show the significant positive changes evidenced immediately after treatment in ratings of their child's disruptive behavior and their own parenting stress, whereas families who dropped out of treatment reported little change from baseline in their ratings (Boggs et al., 2004).

Although longitudinal follow-up has been encouraging, with group-level analyses demonstrating maintenance of treatment gains, continued research is needed to evaluate individual differences that affect maintenance. For example, 3–6 years after treatment, 75% of children remained below the clinical cutoff for disruptive behavior, but 25% did not (Hood & Eyberg, 2003). In most early follow-up studies, observational data had evidenced a decline in maintenance that began during the second year after treatment completion (Eyberg et al., 2001; Funderburk et al., 1998).

A maintenance study was designed to examine the effects of brief monthly booster phone calls from the therapist during the 2 years after initial treatment completion. All families were treated with PCIT, and after treatment, 61 treatment completers were randomly assigned to the booster treatment group or an assessment-only group and followed for 2 years (Eyberg et al., 2014). At the same time, the continuous enhancement of treatment (cf. Nock & Ferriter, 2005) led to protocol modifications that may have affected treatment durability. For example, based on research by Prinz and Miller (1994), a brief (less than 5 minutes) period of therapist discussion with parents about personal, non-child-related concerns was added to each PCIT session to reduce attrition. In the maintenance treatment study, the booster group was expected to maintain its gains on both rating scale and behavioral observation measures during the second follow-up year, whereas the assessment-only control group was expected to show the declines in maintenance previously seen after 2 years. However, both groups maintained the gains made in treatment. Perhaps the continuous enhancements of PCIT improved treatment durability, or perhaps the 15-minute calls made by assessors quarterly to track all families' progression after treatment were sufficient to remind control families to continue using the skills learned in PCIT even without therapist booster calls.

Treatment Attrition

Attrition from PCIT has remained at about 35% for families of children with DBDs (Fernandez & Eyberg, 2009; Werba, Eyberg, Boggs, & Algina, 2006). This attrition rate is consistent with other child therapies, which report attrition rates ranging from 28 to 75% (de Haan, Boon, de Jong, Hoeve, & Vermeiren, 2013). Because treatment is performance based and continues until the treatment goals are met, the only way a family cannot succeed, theoretically, is by dropping out. Evidence suggests that families who discontinue treatment prematurely have poorer long-term outcomes than those who complete PCIT (Boggs et al., 2004).

Because access to treatment is difficult for the majority of children with DBDs, it is especially concerning when families able to "come through the door" are then lost to attrition (Fernandez & Eyberg, 2005). Studies investigating the predictors of attrition from PCIT have identified the following to be associated with dropout: low maternal praise and high criticism during parent–child interactions at pretreatment assessment, low socioeconomic status, high levels of parent-reported barriers to treatment, and a less engaging therapist verbal style (Fernandez & Eyberg, 2009; Harwood & Eyberg, 2004). Among the most frequently noted reasons for dropout cited by parents of children with DBDs are disagreement with the treatment approach and logistical concerns, such as transportation and child care for siblings (Boggs et al., 2004; Fernandez & Eyberg, 2009). PCIT is a time- and effort-intensive treatment, and the barriers to treatment participation may seem overwhelming, particularly if parents had anticipated a medication or individual child treatment approach. A focus on methods of motivational enhancement and therapy process skills is one important direction for PCIT research.

Application to Diverse Child Problems

PCIT has been used clinically to treat behavior problems associated with an array of primary diagnoses beyond the DBDs, including internalizing disorders, developmental disorders, and neurological impairments. The behavioral principles and skills parents learn in PCIT are not problem-specific but address the shaping of behavior generally. The PCIT protocol is increasingly used with a widening range of medical, psychological, and psychosocial presenting concerns.

Within epidemiological samples, the co-occurrence of ODD and anxiety disorders has ranged from 10 to 50% (Angold, Costello, & Erkanli, 1999). In a retrospective PCIT study, approximately one quarter of preschoolers referred for treatment of DBDs also had a co-occurring separation anxiety disorder (SAD; Chase & Eyberg, 2008). Although internalizing symptoms had not been specifically targeted in treatment, nearly three-fourths of these children no longer met diagnostic criteria for SAD after PCIT, and across the study population, children's internalizing symptoms were significantly reduced. Modifications to PCIT for SAD have been studied as well, incorporating exposure-focused sessions and increasing reinforcement of "brave behaviors" (Pincus, Santucci, Ehrenreich, & Eyberg, 2008). Promising preliminary studies integrating an emotional development and coping module within the PCIT protocol have also reported success in addressing depressive symptoms in young children (Lenze, Pautsch, & Luby, 2011; Luby, Lenze, & Tillman, 2012).

Children with pervasive developmental challenges such as intellectual disability (ID) and autism spectrum disorders (ASDs) commonly have comorbid DBDs. In an RCT of PCIT with young children with co-occurring ID and DBD, the children who received PCIT showed significantly higher rates of compliance and had lower parent-rated disruptive behavior than control children (Bagner & Eyberg, 2007). Observed positive and negative parenting behaviors were shown to mediate child behavior change in that study. Among young children born prematurely, a population at higher risk for disruptive behavior due to poor physiological regulation, an RCT showed that maternal behavior change during PCIT was related to increased physiological regulation in the children (Graziano, Bagner, Sheinkopf, Vohr, & Lester, 2012).

Emerging evidence from PCIT interventions with children on the autism spectrum is encouraging. A pilot study examining a PCIT adaptation with high-functioning children with ASD found a decrease in parent-reported disruptive behavior and a corresponding increase in positive affect after treatment (Solomon, Ono, Timmer, & Goodlin-Jones, 2008). Similar results were found with three children in a non-concurrent multiple baseline study of PCIT with ASD (Masse, McNeil, Wagner, & Quetsch, 2016). The CDI phase of PCIT alone also holds promise for intervening with children on the spectrum. An RCT found that CDI alone resulted in reduced disruptive behavior and improved social awareness (Ginn, Clionsky, Eyberg, Warner-Metzger, & Abner, 2015).

PCIT has been designated as a best practice treatment for child physical abuse, where the identified patient is typically the parent (Kauffman Best Practices Project, 2004). The coercive parent–child relationships that characterize most families of children with DBDs are central to physically abusive families. An RCT conducted by Chaffin et al. (2004) found that physically abusive parents who underwent PCIT were significantly less likely to be reported again for child abuse than parents assigned to a standard community treatment condition. The greater reduction of coercive parent–child interactions in the PCIT condition was shown to mediate the reabuse outcome (Chaffin et al., 2004). Recently, a randomized pilot study of the

CDI phase of PCIT as a twice-weekly, eight-session, stand-alone treatment for kinship foster caregivers found significant decreases in child externalizing behavior and parenting stress in just 4 weeks' time (N'Zi, Stevens, & Eyberg, 2016).

Cross-Cultural Research on PCIT

Child behavior changes in disruptive behavior after unmodified PCIT have been documented in several cultural groups, including Chinese (Leung, Tsang, Sin, & Choi, 2015), Dutch (Abrahamse, Junger, van Wouwe, Boer, & Lindauer, 2015), and Mexican American (McCabe & Yeh, 2009) populations. Successful implementation of PCIT in diverse cultures necessitates careful consideration of the cultural factors related to mental health utilization, family structure, discipline practices, and language. Some research teams have also studied adaptations to the treatment protocol to address cultural factors. "Treatment adaptation" refers to a change in content or structure of an established treatment that is made when a standard feature of the treatment is not feasible or suitable for a specific new population (Eyberg, 2005). Note that treatment adaptation differs from "treatment modification," which refers to a universal change made to the established treatment protocol, based on sound research demonstrating incremental effectiveness (Eyberg, 2005). Changes to a treatment protocol outside such a research context threaten the integrity of an empirically supported treatment and can weaken its effectiveness.

A Mexican American adaptation of PCIT by McCabe and Yeh (2009) illustrates ways in which cultural norms have been sensitively addressed. Following focus group analyses of Mexican American parents and therapists, PCIT was presented by Spanish-speaking therapists as an educational/skills-building program in which therapists were referred to as "teachers" to reduce the stigma associated with seeking mental health services in this cultural group. The Mexican American adaptation also extended the length of the treatment sessions to permit time for social exchanges deemed important to rapport. It is important to note that the cultural adaptations in McCabe and Yeh's study did not change core elements of the treatment. The standard and adapted versions of PCIT were both found superior to the control group, and although there were few significant differences between the standard and adapted treatments in parent and child behavioral outcomes, the adaptation enhanced the cultural sensitivity of the treatment approach.

As empirically supported treatments are increasingly examined cross-culturally, one issue that arises is the extent to which cultural adaptation is needed to make these treatments work well with populations unlike those for which the treatment program was originally developed. The findings with PCIT thus far suggest that the unmodified version of the intervention is effective across rather diverse groups, and that adaptations may be helpful in making the intervention acceptable and appealing to families and in enhancing therapist–parent rapport. Further study of the impact of treatment adaptation, particularly in populations more dissimilar to our own, will continue to be important. The study design of McCabe and Yeh is an important model. Comparison of a changed treatment to the established treatment will inform us whether the new treatment has increased (or decreased) benefit in any of a number of important outcomes (e.g., treatment attrition, behavior change, maintenance, satisfaction with treatment approach).

Implementation of PCIT in New Settings

With broader implementation of PCIT, systematic investigations have been conducted to understand its utility when conducted in various settings. The efficacy of PCIT has been demonstrated in group formats (Niec, Hemme, Yopp, & Brestan, 2005; Nieter, Thornberry, & Brestan-Knight, 2013), as well as in home (Galanter et al., 2012; Ware, McNeil, Masse, & Stevens, 2008) and school settings (Gershenson, Lyon, & Budd, 2010; Lyon et al., 2009). Similarly, PCIT has been effective when adapted for use in primary care (Berkovits, O'Brien, Carter, & Eyberg, 2010). PCIT has also shown promise when delivered in an "intensive treatment" format in which a specific number of sessions is provided over a shorter period of time (e.g., 5 days per week for 2 weeks; Graziano et al., 2015).

The flexibility of PCIT may in part be due to its active-oriented components as well as its robustness as a treatment (Thomas & Zimmer-Gembeck, 2007). Moderate to large effect sizes for traditional PCIT (pre- to posttreatment) have been reported for child behavior (observed compliance; ranging from $d = 0.61$ to 0.94); for parent behavior (observed skills; ranging from $d = 1.11$ to 3.11); and for parent report of child behavior problems (ranging from $d = 1.31$ to 1.45; Thomas & Zimmer-Gembeck, 2007). For the same outcomes, an intensive version of PCIT (Graziano et al., 2015) demonstrated similar or even stronger effect sizes: child behavior ($d = 1.67$), parent behavior ($d = 1.93$–6.04), and parent report of child behavior problems ($d = 2.50$). These gains have been shown to maintain over time for both traditional PCIT and intensive PCIT. It is not currently clear how few sessions can produce positive treatment outcomes, particularly outcomes approximating the effect sizes reported for traditional PCIT. However, in a sample of families referred because of child physical abuse, Hakman, Chaffin, Funderburk, and Silovsky (2009) found substantial increases in positive parent responses and decreases in negative parent responses to child behavior within the first three sessions of PCIT.

Research on Training in PCIT

Understanding how best to train therapists in PCIT once they have completed their graduate training has been a recent area of study. PCIT delivery assumes a broad background of clinical knowledge and skills. Skills specific to PCIT are also necessary for coding parent–child interactions and conducting ongoing functional analyses of parent and child behaviors during coaching to guide parent skills training and determine when to move from one step in treatment to the next. PCIT International, Inc. (*www.pcit.org*) has established training guidelines that have been refined over time (PCIT Task Force on Training, 2009, 2013). These guidelines specify the qualifications necessary for practicing PCIT and for training others in PCIT. The guidelines also provide recommendations on training methods. For example, to become a PCIT International Certified Therapist, a person entering training must hold a master's degree or higher in a mental health field and be licensed or license-eligible. License-eligible therapists must be supervised by a licensed clinician. PCIT International-approved trainings are typically delivered over the course of 1 year and include an initial 40-hour, face-to-face training; a 2-day, face-to-face training 6 months after the initial training; biweekly 1-hour phone consultation (24 hours over the year); and skills review. During the course of their training year, participating clinicians must also graduate two families from PCIT. Once therapists successfully complete their training year, they can apply for certification in PCIT. Over time, a certified therapist might participate in additional training to apply for trainer credentialing, which also is clearly specified by PCIT International.

Empirical attention has been devoted to understanding the most effective and efficient methods to train PCIT clinicians in community settings. Perhaps due to the unique and high level of skills required for successful delivery of PCIT (e.g., coding parent–child interactions; coaching parents to mastery), it has been found that therapist skills cannot be learned from reading or didactic course work alone (Herschell et al., 2009). Instead, experiential training followed by case supervision/consultation is required to learn PCIT. In a recent, careful examination of PCIT training (Scudder & Herschell, 2015), considerable agreement was found among a group of 23 expert PCIT trainers in their reports on the methods they routinely use in training. As would be expected from the PCIT International Training Requirements (PCIT Task Force on Training, 2013), PCIT trainers reportedly and routinely use face-to-face workshop training, clinical case review, consultation, and follow-up support. As also might be expected, these same trainers report key differences in the delivery of training components, amount of detail within topics, and administration of competency and skill check-offs, which partially reflects the high value they reportedly place on tailoring training to specific groups (Scudder & Herschell, 2015).

Investigations of consultation between PCIT trainers and new PCIT clinicians have found that telemedicine technology (i.e., Remote Real Time cotherapy) is a viable option for supplementing traditional phone consultation. The technology of Remote Real Time cotherapy allows an off-site, expert PCIT supervisor to offer real-time feedback to trainees as they are working with a family in PCIT (Funderburk, Ware, Altshuler, & Chaffin, 2008). In a small study, participants (10 therapists) rated satisfaction with Remote Real Time cotherapy highly and reported finding it even more helpful than traditional phone consultation (Funderburk et al., 2008). A larger trial conducted across two states and 30 agencies, including 80 therapists and 330 families, demonstrated small but significantly better outcomes for families whose therapists participated in Remote Real Time cotherapy compared to traditional phone consultation (Funderburk et al., 2015). A concern with Remote Real Time technology is its high cost (approximately $5,000 per unit).

Currently, a statewide trial is being conducted (NIMH RO1 MH095750; *clinicaltrials.gov* Identifier: NCT02543359; Principal Investigator: Herschell et al., 2015) to evaluate the effectiveness of three training models (Learning Collaborative, Cascading Model, and Distance Education) to implement PCIT in outpatient clinics throughout Pennsylvania. The three training models were chosen because they are commonly used within evidence-based treatment training, yet they differ in their costs, skills training, quality control methods, and capacity to address broader implementation challenges. Specific aims of the study focus around building knowledge about training outcomes (clinician level), implementation (clinic level), and family (parent and child level) outcomes over time (baseline: 6- [mid], 12- [post], and 24-months [1-year follow-up] for professionals; pretreatment: 1 month, 6-months, and 12 months after the pretreatment for families). To date, 50 community-based outpatient clinics have been randomized to condition. From these clinics, 212 families, 190 clinicians and supervisors, and 50 administrators have been enrolled. Data collection will continue through December 2017.

FUTURE DIRECTIONS

We have presented studies of PCIT, describing treatment efficacy and effectiveness and generalization of effects across cultures, settings, and time for the majority of families who enter treatment. A complete listing of PCIT studies can be found on the PCIT website (*www.pcit.org*), where the PCIT International Research Task Force maintains an up-to-date file. However, the high prevalence of young children with disruptive behavior, combined with the poor long-term prognosis for these children if not treated, highlights the significant need for access to evidence-based treatments (EBTs) in real-world settings. Increasing demands within mental health agencies and institutes worldwide to use EBTs requires training of service providers outside traditional graduate training programs.

As PCIT implementation continues to expand to diverse community settings, it will be important to assess how PCIT can translate to practice without losing effectiveness, as well as what supports might need to be in place (e.g., continuous quality improvement processes ensure high quality implementation). It also will be important to address the unique challenges and opportunities presented as a result of broad implementation of PCIT. For example, additional research is needed on the cost-effectiveness of treatment and training, the utility of diversifying funding sources for PCIT, and the maintenance of treatment effects and trainer competence long after the initial PCIT training is completed.

CONCLUDING COMMENTS

This chapter describes PCIT for young children with DBDs and their families. Key elements of the treatment are illustrated, including involvement of the parents and child together in treatment, use of assessment to guide the family's progress, active coaching of parents in relationship and behavior change skills, and continuation of treatment until parents have mastered the skills and their child's behavior is within the normal range. These features of PCIT draw on both attachment and social learning principles to produce lasting improvements in the parent–child relationship and lasting reductions in the child's disruptive behavior.

Adherence to behavioral theory, tailoring treatment to the unique needs of families, continuous enhancements guided by well-conducted research, and fidelity to the treatment model may account for the successful implementation and generalization of PCIT across diverse mental health symptoms, settings, and cultures to date. The skills, commitment, and sensitivity of PCIT providers play a critical role as well. Continued research on therapist factors in the application of PCIT, and on training and support for their continued advancement, are important to the future of PCIT.

ACKNOWLEDGMENTS

The research on PCIT reported in this chapter was supported by grants from the National Institute of Mental Health (Nos. RO1 MH60632, F31-MH-068947, RO1 MH-46727, 1 F32 MH05037–01, K23 MH085659, R01 MH095750, R34-MH80163, T32DA007261, 5R34MH080163-02, K23MH090245, K01MH01924); the National Institute of Child Health and Human Development (No. F32 HD056748); the U.S. Department of Health and Human Services (Nos. 90CA1633, 90CA1671); the Alcohol, Drug Abuse, and Mental Health Administration (No. 1 F32 MH05037-01); the Centers for Disease Control and Prevention (No. U49CE001065); the Netherlands Organization for Health, Research, and Development (No. 15700.2007); and the University of Florida Opportunity Fund (No. UF 3307758 12). Additional research support was provided by the Administration of Children, Youth, and Families; the Center for Pediatric Psychology and Family Studies; the University of Florida; the Children's Bureau; the Children's Miracle Network; Division 53 of the American Psychological Association; the Florida Institute; the Hong Kong Jockey Club Charities Trust; the Kraft Employee Fund; the Melissa Institute; and the Office on Child Abuse and Neglect.

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CHAPTER 8

The Incredible Years Parents, Teachers, and Children Training Series

A Multifaceted Treatment Approach for Young Children with Conduct Problems

Carolyn Webster-Stratton and M. Jamila Reid

OVERVIEW OF THE CLINICAL PROBLEM

Rates of early-onset conduct problems in preschool children are alarmingly high: 6–15% (Egger & Angold, 2006; Sawyer et al., 2000) and as high as 35% for low-income families (Webster-Stratton & Hammond, 1998). Developmental theorists have suggested that, compared to typical children, "early starter" delinquents who first exhibit conduct problems or oppositional defiant disorder (ODD) in the preschool years, have a two- to threefold risk of becoming tomorrow's serious violent and chronic juvenile offenders (Loeber & Farrington, 2000; Loeber et al., 1993; Patterson, Capaldi, & Bank, 1991; Snyder, 2001; Tremblay et al., 2000). Indeed, the primary developmental pathway for serious conduct disorders (CDs) in adolescence and adulthood appears to be established during the preschool period.

Risk factors that contribute to child conduct problems include ineffective parenting (Farrington, Loeber, & Ttofi, 2012; Jaffee, Caspi, Moffitt, & Taylor, 2004), family mental health and criminal history (Knutson, DeGarmo, Koeppl, & Reid, 2005), child biological and developmental risk factors (e.g., attention deficit disorders, learning disabilities, and language delays; Beauchaine, Hinshaw, & Pang, 2010), school risk factors (Hawkins, Catalano, Kosterman, Abbott, & Hill, 1999; Webster-Stratton & Reid, 2010a), and peer and community risk factors (e.g., poverty and gangs) (Collins, Maccoby, Steinberg, Hetherington, & Bornstein, 2000;

Hawkins et al., 2008). Treatment–outcome studies suggest that interventions for CD are of limited effect when offered in adolescence, after delinquent and aggressive behaviors are entrenched, and secondary risk factors such as academic failure, school absence, and the formation of deviant peer groups have developed (Dishion & Piehler, 2007; Offord & Bennett, 1994).

The current policy thrust is toward earlier intervention, because it addresses early risk factors, before secondary risk factors have developed. For these reasons, The Incredible Years® (IY) treatment programs were designed to prevent and treat behavior problems when they first begin and to intervene in multiple settings with parents, teachers, and children. This approach to early intervention can counteract risk factors and strengthen protective factors, thereby helping to prevent a developmental trajectory toward increasingly aggressive and violent behaviors. This chapter reviews the IY programs and their associated research.

CONCEPTUAL MODEL GUIDING THE TREATMENT PROGRAMS

The IY interventions are targeted to effect change in key parent, teacher, and child risk and protective factors implicated in the development and prevention of children's conduct problems. See the logic model at *http://incredibleyears.com/programs* and Figure 8.1 for an overview of the programs and hypothesized mechanism of change.

The parent and teacher programs begin with a focus on enhancing positive relationships and attachment between parents, teachers, and children by teaching child-directed interactive play; social, emotional, academic, and persistence coaching; and interactive reading methods, praise, and incentive programs. Teachers and parents also discuss age-appropriate proactive parenting and teaching strategies that include introducing rules and predictable routines, giving clear commands, and using a specific set of positive discipline techniques (e.g., monitoring, ignoring, effective limit setting, redirection and distractions, natural and logical consequences, and time-out to calm down). Parents and teachers of preschool and school-age children are taught how to teach children problem-solving, friendship, and emotion regulation skills. These programs are set within a developmental context in which parents and teachers discuss how to apply the program material to meet each child's unique temperament and developmental level.

The child training program provides explicit teaching to support positive social, emotion regulation, and problem-solving behaviors. This training focus on areas that children with conduct problems and attention-deficit/hyperactivity disorder (ADHD) struggle with, providing added structure, monitoring, coaching, and repeated learning trials that help children learn to inhibit undesirable behaviors and to manage emotion. The group format of the child program provides an opportunity to practice new skills with peers, focusing on each child's particular social learning needs, such as problem-solving, perspective-taking, and play skills, as well as emotional literacy and special academic needs.

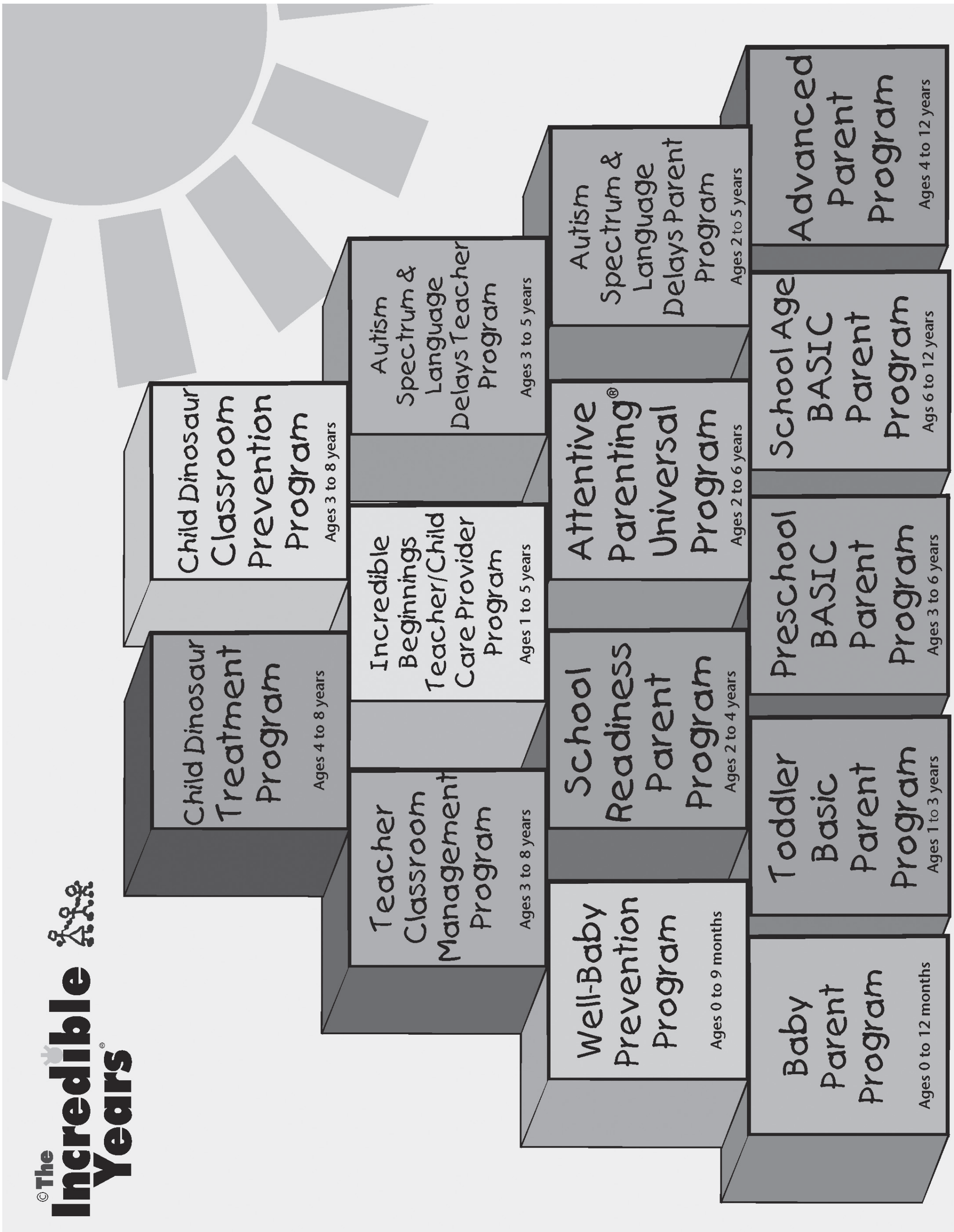

FIGURE 8.1. The IncredibleYears intervention programs.

CHARACTERISTICS OF THE TREATMENT PROGRAMS

The IY BASIC Parenting Programs

Goals of the BASIC Parent Programs

Goals of the parent programs are to promote parent competencies and strengthen families by

- Increasing positive parenting, self-confidence, and parent–child attachment.
- Teaching parents to coach children's language development, academic readiness, persistence and sustained attention, and social and emotional development.
- Decreasing harsh discipline and increasing positive behavior management strategies.
- Improving parents' problem solving, depression and anger management, and positive communication.
- Increasing family support networks and school involvement/bonding.
- Helping parents and teachers work collaboratively.
- Increasing parents' involvement in academic-related activities at home.

Content of the BASIC IY Parent Training Treatment Program

In 1980, the first IY program, an interactive, video-based parent intervention (BASIC) was developed and researched for parents of children ages 2–8 years (Webster-Stratton, 1981). This program has been revised and updated, and now includes four separate BASIC programs: Baby Program (4 weeks to 9 months), Toddler Program (1–3 years), Preschool Program (3–5 years), and School-Age Program (6–12 years). Trained and accredited IY group leaders/clinicians meet weekly for 2 hours with groups of 10–12 parents and use selected DVD vignettes to trigger discussions, problem solving, and practices. Each program has an extensive leader manual and text, parent handouts, and a parent textbook. The number of weekly sessions ranges from 10 to 24 weeks. The protocol for high-risk populations or those families whose children are diagnosed with ODD or ADHD is longer than protocols for the prevention population (see website for protocols). Group leaders should complete at least the minimum number of recommended sessions for the population addressed and pace the learning according to family goals, needs, and progress. The specific objectives for each of these programs can be found at *http://incredibleyears.com/about/incredible-years-series/objectives.*

THE IY BABY AND TODDLER PROGRAMS

These programs focus on supporting babies and toddlers to successfully accomplish three developmental milestones: secure attachment with their primary caregivers, language and social expression, and beginning development of a sense of self. Program topics for the baby program include baby-directed play; speaking "parentese"; providing physical, tactile, and visual stimulation; providing nurturing parenting; providing a language-rich environment; baby-proofing; and building a support network.

Program topics for the toddler program include toddler-directed play, descriptive commenting, social and emotional coaching, language-rich specific praise, understanding toddlers' drive for exploration and need for predictable routines, clear limit setting, toddler-proofing to ensure safety, and separation and reunion strategies.

THE IY BASIC PRESCHOOL PROGRAM

This program focuses on the developmental milestones of encouraging school readiness skills (prewriting, prereading, discovery learning), emotional regulation, and beginning friendships skills. The program builds on the topics in the toddler program and adds academic, persistence, and self-regulation coaching; proactive discipline; and teaching children beginning problem-solving skills.

THE SCHOOL AGE PROGRAM

This program focuses on encouraging children's independence, motivation for academic learning, and development of family responsibility and empathy awareness. Program topics continue to build on core relationship skills with special time with parents, incentive systems for difficult behaviors, clear and respectful limit setting, encouragement of family chores, predictable homework routines, adequate monitoring, logical consequences, and working successfully with teachers. The school-age program has protocols for 6- to 8- and 9- to 12-year-old children. The older age protocol includes content on monitoring afterschool activities and discussions regarding family rules about TV and computer use, as well as drugs and alcohol.

THE ADVANCE PARENT TRAINING TREATMENT PROGRAM

In addition to parenting behavior per se, other aspects of parents' behavior and personal lives constitute risk factors for child conduct problems (Farrington et al., 2012). The ADVANCE treatment program, a 10- to 12-session program offered after the completion of the BASIC program, teaches adult conflict and depression management, problem solving, and emotion regulation. This program is designed to help mediate the negative influences of these personal and interpersonal factors on parenting skills and promote increased maintenance and generalizability of treatment effects.

Adjunct IY Parenting Programs

In addition to the previously described parenting programs, there are several adjunct parenting programs designed to target specific developmental issues or populations.

The School Readiness Program

This four-session curriculum for preschoolers is a prevention program to help parents promote children's school readiness by supporting their children's self-confidence and faciliating their language and reading skills.

The Attentive Parenting Program

The Attentive Parenting® Program, a universal prevention program for children ages 2–6, is designed to teach social, emotional, and persistence coaching, and reading skills; and to promote children's self-regulation and problem-solving skills. There is a 4- to 6-week protocol for parents of toddlers (2–4 years) and a 6- to 8-week protocol for parents of 4- to 6-year-old children.

The Parenting Program for Children with Autism Spectrum Disorder

This program for children ages 2–5 provides vignette examples of children with language delays and/or who are on the autism spectrum. This 12- to 14-week program can be used in its entirety with groups of parents who have young children with these diagnoses, or selected vignettes can be with used to supplement the BASIC preschool program for parents who have children with an autism spectrum disorder (ASD). Program topics parallel those in the BASIC parenting program, with attention to ways that parenting strategies need to be modified for children with developmental delays or ASD. Modifications include using gestures, imitation, songs, and visual picture cards for children with limited language; incorporating social sensory routines to get in children's attention spotlight; engaging in pretend and puppet play to enhance joint play; teaching self-regulation skills; and using concepts of antecedent accommodations and environmental modification to promote appropriate behavior and replacement behaviors (Webster-Stratton, Dababnah, & Olson, 2017).

The IY Teacher Classroom Management Intervention

Once children with behavior problems enter school, negative academic and social experiences escalate the development of conduct problems. Aggressive, disruptive children quickly become socially excluded, which reduces opportunities to interact socially and to learn appropriate friendship skills. Peer rejection eventually leads to association with deviant peers, which increases their risk for drug abuse and antisocial behavior (Dishion & Piehler, 2007).

Furthermore, teacher behaviors and school characteristics, such as low emphasis on teaching social and emotional competence, low rates of praise, and high student–teacher ratio are associated with classroom aggression, delinquency, and poor academic performance. Aggressive children frequently develop poor relationships with teachers and are often expelled from classrooms. Lack of teacher support and exclusion from the classroom exacerbates these children's social problems and academic difficulties, contributing to the likelihood of school dropout. Clearly, integrating interventions across home and school settings to target school and family risk factors fosters greater between-environment consistency and offers the best chance for long-term reduction of antisocial behavior.

Content of the Teacher Classroom Managment Training Intervention

The teacher training program is a 6-day (or 42-hour) group format program for teachers, school counselors, and psychologists working with children ages 3–8 years. A complete description of the program content is described in the book that teachers use for the course, titled *Incredible Teachers* (Webster-Stratton, 2012b).

Incredible Beginnings: Teacher and Child Care Provider Program

This 6-day, group-based program is for day care and preschool teachers of children ages 1–5 years. Topics include coping with toddler's separation anxiety and promoting attachment with caregivers; collaborating with parents and promoting their involvement; promoting language development with gestures, imitation, modeling, songs and narrated play; using puppets, visual prompts, books, and child-directed coaching methods to promote social and emotional development; and proactive behavior management approaches.

Helping Preschool Children with Autism: Teachers and Parents as Partners Program

This program is designed to be used as an add-on program to the IY Parent Program for Children with ASD and to the IY Teacher Classroom Management Program. The program focuses on how to promote language development and communication with peers, and helps teachers and parents to provide social and emotional coaching and teach children self-regulation skills.

The IY Child Training Intervention (Dinosaur School)

Aspects of the child's internal organization at the physiological, neurological, and/or neuropsychological level are linked to the development of conduct disorders, particularly for children with a chronic history of early behavioral problems (Beauchaine, Neuhaus, Brenner, & Gatzke-Kopp, 2008). Children with conduct problems are more likely to have temperamental characteristics such as inattentiveness, impulsivity, and ADHD. Deficits in social-cognitive skills and negative attributions have also been linked to early-onset conduct problems and contribute to poor emotional regulation and aggressive peer interactions (Dodge & Feldman, 1990). Children with conduct problems have significant delays in their peer-play skills: difficulty with reciprocal play, cooperative skills, taking turns, waiting, and giving suggestions. Finally, reading, learning, language delays, and autism are also associated with conduct problems, particularly for "early life course persisters." The relationship between academic performance and ODD/CD is bidirectional, with academic difficulties leading to frustration and behavior problems, and behavior problems limiting a child's ability to be engaged in learning. This combination of academic delays and conduct problems appears to contribute to the development of more severe CD and school failure.

Goals of the Child Training Programs

The child training programs promote children's competencies and reduce aggressive and noncompliant behaviors by doing the following:

- Strengthening socially appropriate play skills.
- Promoting children's use of self-control and self-regulation strategies.

- Increasing emotional awareness and language.
- Promoting children's ability to persist with and attend to difficult tasks.
- Boosting academic success, reading, and school readiness.
- Reducing defiance, aggression, noncompliance, peer rejection, and bullying, and promoting compliance with teachers and peers.
- Decreasing negative attributions and conflict management approaches.
- Increasing self-esteem and self-confidence.

Content of the Child Training Treatment

The child treatment program targets 4- to 8-year-old children with conduct problems who meet weekly for 2 hours in groups of six children. Organized to dovetail with the content of the parent training program, the 18- to 22-week program consists of seven main components: (1) Introduction and Rules; (2) Empathy and Emotion; (3) Problem Solving; (4) Anger Control; (5) Friendship Skills; (6) Communication Skills; and (7) School Skills.

Group Process and Methods Used in Parent, Teacher, and Child Training Programs

The underlying theoretical background for all the programs includes cogntive social learning theory (Patterson, Reid, & Dishion, 1992); Bandura's modeling and self-efficacy theories (Bandura, 1986); Piaget's developmental cognitive stages; cognitive strategies for challenging angry, depressive self-talk (Beck, 1979; Piaget & Inhelder, 1962); and attachment theories (Bowlby, 1980; Ainsworth, 1974). All IY treatment approaches rely on performance training methods, including video modeling, role play, practice activities, and live therapist and peer feedback. In accordance with modeling and self-efficacy theories of learning, participants in the programs develop skills by watching (and modeling) video vignettes of key skills. Video examples provide a more accessible and flexible method of training than didactic verbal instruction or sole reliance on role play, because they portray a wide variety of models and situations. The developer hypothesized that this flexible modeling approach would result in better generalization of the training content and, therefore, more sustainable long-term maintenance. Furthermore, it would be a better method of learning for less verbally oriented learners.

The video vignettes show parents, teachers, and children of differing ages, cultures, socioeconomic backgrounds, and temperaments, so that participants perceive at least some of the models as similar to themselves and accept the vignettes as relevant. Many of the programs have been translated into multiple languages. Vignettes show models (unrehearsed) in natural situations "doing it effectively" and "doing it less effectively" in order to demystify the notion there is "perfect parenting or teaching," and to illustrate how to learn from mistakes. This approach also emphasizes a coping, interactive, and experiential model of learning (Webster-Stratton, 2012a; Webster-Stratton & Herbert, 1994); that is, participants view a video vignette of a situation, then discuss and practice how the individual handled the interaction effectively or might do so more effectively. This approach enhances participants' confidence in their own ideas and develops their ability to analyze interpersonal situations and select an appropriate response. In this respect, IY training differs from some training programs in which the therapist provides the analysis and recommends a particular strategy.

The video vignettes demonstrate behavioral principles and serve as the stimulus for discussions, self-reflection, problem solving, practice, and collaborative learning. The therapist's role is to support group members by teaching, leading, reframing, predicting, and role playing, always within a collaborative context. The collaborative context is designed to ensure that the intervention is sensitive to individual cultural differences and personal values. The program is "tailored" to each teacher, parent, or child's individual needs and personal goals, as well as to each child's temperament and behavior problems.

The group format is more cost-effective than individual intervention and also addresses an important risk factor for children with conduct problems: the child and family's isolation and stigmatization. The groups provide support and a positive peer group for parents, teachers, and children (for details of the parent, teacher, and child therapeutic processes, see Webster-Stratton, 2012a, 2012b).

In the child program, methods are developmentally tailored to the ages of the children. After viewing the vignettes, children discuss feelings, generate ideas for more effective responses, and role-play alternative scenarios. Therapists use life-size puppets to model appropriate behavior and thinking processes. Because young children are more vulnerable to distraction, are less able to organize their thoughts, and have poorer memories, material is taught and reviewed through games, songs, art projects, behavioral practice, visual cue cards, story telling by the puppets, video vignettes, coached play times, home activities, and letters for teachers and parents.

Home-Based Delivery

While participation in the group-based IY programs is highly recommended because of the support and learning provided by other parents, there is also a *home-based coaching model* for each parenting program. Home-based sessions can be offered to parents who cannot attend groups, or as makeup sessions, and are highly recommended as a coached parent–child practice supplement to the group program for high-risk families, such as those referred by child welfare services and for families with children with conduct problems, ADHD, and on the autism spectrum.

EVIDENCE ON THE EFFECTS OF TREATMENT

Effects of Parent Training Programs with Treatment-Indicated Populations

The efficacy of the IY BASIC parent treatment program for children (ages 2–8 years) diagnosed with ODD/CD and ADHD has been demonstrated in eight published randomized controlled group trials by the program developer. See references and a detailed review of studies at *http://incredibleyears.com/books/iy-training-series-book.* The BASIC program has consistently improved parental attitudes and parent–child interactions, and has reduced harsh discipline and child conduct problems compared to wait-list control groups. These results are consistent for toddler, preschool, and school-age versions of the programs (Gross, Fogg, Webster-Stratton, Garvey, Julion, & Grady, 2003). One study (Webster-Stratton, 1994) indicated the additive benefits of combining the BASIC program with the ADVANCE program on children's prosocial solution generation and parents' marital interactions. Consequently a 20- to 24-week program that combined BASIC plus ADVANCE became the core treatment for parents of children diagnosed with ODD and/or ADHD and was used for the majority of the treatment studies. One recent pilot study evaluating the BASIC program with parents of children with ASD indicated promising results, including a reduction in parent stress (Dababnah & Parish, 2014).

Several studies have also shown that IY treatment effects are durable 1–3 years posttreatment (Webster-Stratton, 1990; Webster-Stratton, Hollinsworth, & Kolpacoff, 1989; Webster-Stratton, Reid, & Beauchaine, 2013). There are two 8- to 12-year follow-up studies of families treated with the IY parent program because of their children's conduct problems (Scott, Briskman, & O'Connor, 2014; Webster-Stratton, Rinaldi, & Reid, 2010). The Webster-Stratton (1990) study indicated that 75% of the teenagers were typically adjusted, with minimal behavioral and emotional problems. The Scott et al. (2014) study indicated that in comparison to mothers in the control condition, who received individualized supportive therapy, the mothers in the IY treatment condition expressed greater emotional warmth and supervised their adolescents more closely, and their children's reading ability was substantially improved. The BASIC programs results have been replicated with treatment populations by independent investigators in mental health clinics with families of children diagnosed with conduct problems (Drugli & Larsson, 2006; Drugli, Larsson, Fossum, & Morch, 2010; Gardner, Burton, & Klimes, 2006; Scott, Spender, Doolan, Jacobs, & Aspland, 2001; Scott et al., 2010; Taylor, Schmidt, Pepler, & Hodgins, 1998) and in doctor's offices with toddlers with ADHD symptoms (Lavigne, LeBailly, Gouze, Cicchetti, Pochyly, et al., 2008; Perrin, Sheldrick, McMenamy, Henson, & Carter, 2014).

Two studies have examined the additive effects of combining the IY child training intervention (CT) and IY teacher training with the parent program (PT) for parents with children with ODD (Webster-Stratton & Hammond, 1997; Webster-Stratton, Reid, & Hammond, 2004). Both studies provided data on the advantages of adding training for children and teachers. (See description of these study results below, in the section on effects of child and teacher training programs.)

Effects of Parent Training Programs with Selective and Universal Populations

The parent program has also been shown in multiple randomized controlled trials (RCTs) by the developer (Reid, Webster-Stratton, & Beauchaine, 2001; Webster-Stratton, 1998; Webster-Stratton, Reid, & Hammond, 2001) and independent investigators (see review by Pidano & Allen, 2015, and Webster-Stratton & Reid, 2010a) to be effective for diverse socioeconomically disadvanted populations. These studies showed positive effects on parenting and child behaviors similar to the treatment studies discussed earlier, and were consistent across parents from culturally diverse backgrounds. The replications by independent investigators were "effectiveness" trials in community settings and not a university research clinic, and the IY therapists were existing staff (nurses, social workers, and psychologists) at the centers or doctor's offices (e.g., Perrin et al., 2014; Posthumus, Raaijmakers, Maassen, Engeland, & Matthys, 2012; Raaijmakers et al., 2008). The program has also been found to be effective with diverse populations including those representing Latino, Asian, African American, and Caucasian background in the United States (Reid et al., 2001), and other countries, such as the United Kingdom, Ireland, Norway, Sweden, Holland, New Zealand, Wales, and Russia (Gardner et al., 2006; Hutchings et al., 2007; Larsson et al., 2009; Raaijmakers et al., 2008; Scott et al., 2001, 2010).

In a meta-analytic review of 50 control group studies evaluating the effectiveness of the IY parent programs, Menting, Orobio de Castro, and Matthys (2013) found an average effect size for disruptive behaviors of $d = 0.39$ for 40 studies conducted in North America and an average effect size of $d = 0.31$ for 10 studies conducted in Europe. These findings illustrate the transportability of the IY parenting programs to other cultures and countries. See Table 8.1 for a summary of the developer's studies with the IY.

TABLE 8.1. Summary of Treatment Results for Studies Evaluating The Incredible Years Programs

Study information

Program evaluated	Number of studies[a]	Investigator: Program developer or independent replication	Population: Prevention or treatment
Parent	6	Developer	Treatment
Parent	4	Developer	Prevention
Child	2	Developer	Treatment
Child	1	Developer	Prevention
Teacher	1	Developer	Treatment
Teacher	2	Developer	Prevention
Parent	5	Replication	Treatment
Parent	5	Replication	Prevention
Child	1	Replication	Treatment
Child	1	Replication	Prevention
Teacher	2	Replication	Prevention

Outcomes

Variable measured (observation and report)	Effect size[b] (Cohen's d)	Most effective program
Positive parenting increased	$d = 0.46–0.51$	Parent
Harsh parenting decreased	$d = 0.74–0.81$	Parent
Child home behavior problems decreased	$d = 0.41–0.67$	Parent
Child social competence	$d = 0.69–0.79$	Child
School readiness and engagement	$d = 0.82–2.87$	Child and teacher
Child school behavior problems	$d = 0.71–1.23$	Child and teacher
Parent–school bonding	$d = 0.57$	Teacher
Teacher positive management	$d = 1.24$	Teacher
Teacher critical teaching	$d = 0.32–1.37$	Teacher

[a] All studies used randomized controlled group design and are cited in the reference list. In treatments studies, subjects were randomly assigned at the child level; in prevention studies, randomization was assigned at the classroom or school level.

[b] Effect sizes include both treatment and prevention studies conducted by the program developer and are between-group effects. The range of effect sizes represents the range for a particular outcome across all studies that included that outcome measure. The information to calculate effect sizes for independent replications was not available. The more recently developed adjunct parent programs and the teacher Incredible Beginnings program have not been researched by the developer and are currently being studied in Norway and Wales.

To date, one RCT has been conducted by an independent investigator in Norway using a briefer version of the BASIC Preschool Program with a universal, non-high-risk population that has shown promising results (Reedtz, 2010). Another Norwegian study using the Attentive Parenting Program as a universal delivery system is currently being evaluated. Two pilot studies with IY baby and autism programs indicate promising results (Evans, Davies, Williams, & Hutchings, 2015; Hutchings, Pearson-Blunt, Pasteur, Healey, & Williams, 2016).

Who Benefits from Parent Training Treatment?

We have assessed both statistical significance and clinical significance of treatment effects. Clinical significance" was defined as being within the normal or the nonclinical range of functioning, or showing a 30% improvement if there were no established normative data. In our 3-year follow-up of 83 families treated with the BASIC program, we found that 25–46% of parents and 26% of teachers still reported child behavior problems (Webster-Stratton, 1990). We also found that the families whose children had continuing externalizing problems (according to teacher and parent reports) were more likely to be characterized by maritally distressed or single-parent status; increased maternal depression; lower social class; high levels of negative life stressors; and family histories of alcoholism, drug abuse, and spouse abuse (Webster-Stratton, 1990; Webster-Stratton & Hammond, 1990).

Hartman (Hartman, Stage, & Webster-Stratton, 2003) examined whether child ADHD symptoms (i.e., inattention, impulsivity, and hyperactivity) predicted poorer treatment results from the parent training intervention (BASIC). Contrary to Hartman's hypothesis, analyses suggested that the children with ODD/CD who had higher levels of attention problems showed greater reductions in conduct problems than children with no attention problems. Similar findings for children with ADHD were reported in the U.K. study (Scott et al., 2001). A recent study with children whose primary diagnoses was ADHD indicated that the combined parent plus child program was effective in reducing children's externalizing, hyperactivity, inattentive and oppositional behaviors, and improving emotional regulation and social competence (Webster-Stratton, Reid, & Beauchaine, 2011; Webster-Stratton et al., 2013).

Rinaldi (2001) examined predictors of long-term outcome and found that mothers' posttreatment level of critical statements and fathers' posttreatment use of praise predicted teen outcome 8–12 years after treatment. In addition, the level of coercion between the children and mothers immediately posttreatment was a predictor of later teen adjustment.

Effects of Child and Teacher Training Programs

Treatment Studies with Child and Teacher Programs as Adjuncts to Parent Programs

To date, the developer has conducted three randomized studies evaluating the effectiveness of the child program for reducing conduct problems and promoting social competence in children diagnosed with ODD/CD and ADHD. In the first study (Webster-Stratton & Hammond, 1997), children with ODD and their parents were randomly assigned to parent training treatment (PT), child training treatment (CT), child and parent treatment (CT+PT), or a wait-list control group. All three treatment conditions showed improvements in parent and child behaviors in comparison to controls. Comparisons of the three treatment conditions indicated that children who received CT showed improvements in problem solving and conflict management skills compared to those in the PT only condition. On measures of parent and child behavior at home, PT and CT+PT parents and children had more positive interactions in comparison to CT parents and children. All the changes noted immediately posttreatment were maintained at 1-year follow-up, and child conduct problems at home had decreased over time. Analyses of the clinical significance of the results suggested that the combined CT+PT condition produced the most sustained improvements in child behavior at 1-year follow-up. Children from all three treatment conditions showed increases in behavior problems at school 1 year later, as measured by teacher reports.

In a second study, Webster-Stratton et al. (2004) tested the effects of different combinations of parent, child, and teacher training. Families with a child diagnosed with ODD were randomly assigned to one of six groups: (1) parent training only (PT); (2) child training only (CT); (3) parent training and teacher training (PT+TT) ; (4) parent training, teacher training, and child training (PT+TT+CT); (5) child training and teacher training (CT+TT); and (6) wait-list control group.

Results from this study (Webster-Stratton et al., 2004) replicated our previous findings on the effectiveness of the parent and child training programs and indicate that teacher training improves teachers' classroom management skills and decreases children's classroom aggressive behavior. In addition, treatment combinations that added either child training or teacher training to the parent training were most effective. Most treatment effects were maintained at 1-year follow-up.

A third RCT evaluated the effects of the IY parent program in combination with the child training program for children diagnosed with ADHD. Independent observations at home revealed treatment effects for reducing children's deviant behaviors with mothers. Mothers, fathers, and teachers reported improvements in children's externalizing behaviors, and peer observations in the classroom indicated improvements in treated children's social competence (Webster-Stratton et al., 2011).

Selective Prevention Studies: Randomized control group studies by the developer (Webster-Stratton et al., 2001) and an independent evaluator (Raver et al., 2008) evaluated the teacher classroom management (TCM) training curriculum in prevention settings with Head Start teachers. In the Webster-Stratton et al. (2001) study, children in the treatment group showed fewer conduct problems at school than did controls, and trained teachers showed better classroom management and more bonding with parents. In the Raver et al. (2008) study, Head Start classrooms in the treatment condition had higher levels of positive classroom climate, teacher sensitivity, and behavior management than did classrooms in the control condition.

A recent study with primary grade teachers has evaluated the benefits of the TCM program for targeting teachers' awareness of the importance of enhancing parents' involvement in their children's education and for improving student academic competence (Reinke, Stormont, Webster-Stratton, Newcomer, & Herman, 2012; Reinke et al., 2014). Preliminary results of a randomized trial of TCM (105 teachers, 1,818 students) suggested that improving teacher–parent bonding and parent educational involvement holds promise for improving child academic and behavior outcomes at school (Reinke, Herman, & Dong, 2016).

Last, an RCT evaluated the teacher training plus classroom Dinosaur curriculum in Head Start and elementary schools serving economically disadvantaged children (*N* = 153 teachers and 1,768 students). Results showed improvements in intervention students' conduct problems, self-regulation, and social competence compared with control students (Webster-Stratton, Reid, & Stoolmiller, 2008).

Who Benefits from Dinosaur Child Training?

Families of 99 children, ages 4–8 years, with ODD/CD were randomly assigned to either the child training treatment group or a control group and assessed on multiple risk factors (child hyperactivity, parenting style, and family stress). Hyperactivity or family stress risk factors did not have an impact on children's ability to benefit from the treatment program. Negative parenting did have a negative impact on children's treatment outcomes. Fewer children who had parents with one of the negative parenting risk factors (high levels of criticism or physical spanking) showed improvements compared to children who did not have a negative parenting risk factor. This finding suggests that for children whose parents exhibit harsh and coercive parenting styles, a parenting intervention should be offered in addition to a child intervention (Webster-Stratton et al., 2001). Our studies also suggest that child training enhances the effectiveness of parent training treatment for children with pervasive conduct problems (home and school settings).

Who Benefits From Treatment and How?

Beauchaine, Webster-Stratton, and Reid (2005) examined mediators, moderators, and predictors of treatment effects by combining data from six RCTs of the IY program (including 514 children between ages 3 and 9). Families in these trials had received parent training, child training, teacher training, or a combination of treatments. Marital adjustment, maternal depression, paternal substance abuse, and child comorbid anxiety and attention problems were treatment moderators. In most cases, intervention combinations that included parent training were more effective than interventions without parent training. For example, children of mothers who were maritally distressed fared better if their treatment included parent training. Indeed, parent training exerted the most consistent effects across different moderating variables, and there were no instances in which interventions without parent training were more effective than interventions with parent training. However, the addition of teacher training seemed to be important for impulsive children. Finally, despite these moderating effects, more treatment components (parent, child, plus teacher training) were associated with steeper reductions in mother-reported externalizing slopes. This suggests that, all things being equal, more treatment is better than less. Harsh parenting practices both mediated and predicted treatment success; in other words, the best treatment responses were observed among children of parents who scored relatively high on verbal criticism and harsh parenting at baseline, but nevertheless improved during treatment.

In a prevention study with socioeconomically disadvantaged children, with and without conduct problems (Reid, Webster-Stratton, & Baydar, 2004), we found that child change was related to maternal engagement in the parenting program and to whether mothers reduced their critical parenting. In this study, maternal program engagement was highest for highly critical mothers and for mothers of children who had the highest levels of conduct problems. In a second study analyzing these same prevention data, Baydar, Reid, and Webster-Stratton (2003) found that while mothers with mental health risk factors (i.e., depression, anger, history of abuse as a child, and substance abuse) exhibited poorer parenting at baseline than mothers without these risk factors, they were engaged in and benefited from the parenting training program at levels that were comparable to those of mothers without these risk factors. Research also showed that dosage of intervention was related to treatment outcome, with mothers who attended more sessions showing more change in parenting than those who attended fewer sessions. A similar independent finding regarding dose effects, with greater improvement for those receiving more treatment sessions, was also found in a study treating children with ODD in a primary care setting (Lavigne, LeBailly, Gouze, Cicchetti, Jessup, et al., 2008). This argues for the importance of not abbreviating intervention.

FUTURE DIRECTIONS

In recent years, the IY parent programs have been expanded, with new vignettes to include older children (8–13 years), as well as infants and toddlers (0–3 years). Several studies have shown positive outcomes with the IY toddler program (Henningham, Hutchings, Griffith, Bywater, & Williams, 2013; Gross et al., 2003; Perrin et al., 2014) and another study evaluating the baby plus toddler program for depressed mothers is currently underway. More research is needed with regard to the home-based coaching method of IY program delivery and determining the type, timing, and dosage of specific IY programs needed for particular populations. New studies are needed to evaluate the recently developed *Incredible Beginnings* program to assess the impact of more comprehensive training for day care providers of very young children and the new IY teacher and parent programs for children on the autism spectrum. By providing a continuum of prevention and treatment services, it is possible to provide a road map for how to prevent the further development of CDs, delinquency, and violence, and how to optimize children's social, emotional, and academic development.

CONCLUDING COMMENTS

While numerous studies have shown that the IY programs are transportable and effective across different contexts worldwide (Gardner, Montgomery, & Knerr, 2015), scaling up to deliver the program with fidelity on a large scale is an ongoing challenge to successful implementation. Unfortunately, research shows that fidelity and positive program outcomes are often compromised when interventions are implemented by therapists in "real-world" settings (Hoagwood, Burns, & Weisz, 2002; Schoenwald & Hoagwood, 2001).

Further research must examine economic, political, agency, and therapist variables that influence fidelity. We know what works to prevent and treat CDs and promote social and emotional competence in young children. It is now time to support large-scale, sustainable, high-quality implementation of these programs with fidelity and evaluate their outcomes.

ACKNOWLEDGMENTS

This research was supported by the National Institutes of Health National Center for Nursing Research (Grant No. 5 R01 NR01075) and the National Institute of Mental Health NIMH Research Scientist Development Award (No. MH00988). Carolyn Webster-Stratton has disclosed a financial conflict of interest, because she disseminates these treatments and stands to gain from favorable reports. Because of this, she has voluntarily agreed to distance herself from certain critical research actitivities, including primary data handling and analysis. The University of Washington has approved these arrangments.

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CHAPTER 9

Parent Management Training and Problem-Solving Skills Training for Child and Adolescent Conduct Problems

Alan E. Kazdin

OVERVIEW OF THE CLINICAL PROBLEM

Our intervention work has focused on disruptive behavior disorders among children and adolescents (ages 2–15) who are referred for inpatient or outpatient treatment. Our primary focus has been with children referred for extreme physical aggression and property destruction, but they evince the full range of behaviors include in the diagnosis of conduct disorder (CD; e.g., bullying and threatening others, lying, stealing, cruelty to animals, fire setting; American Psychiatric Association, 2013) We have expanded our more recent work to include children referred for stubbornness, defiance, and unmanageable behaviors encompassed by the diagnosis of oppositional defiant disorder (ODD). Children with either CD or ODD show significant impairment in their functioning at home, at school, and in community settings (e.g., social and athletic events).

A great deal is known about CD in terms of correlates, risk and protective factors, long-term course, genetic influences, and characteristics of brain activity (e.g., Lahey & Waldman, 2012; Moffitt & Scott, 2009). For example for CD, we know that there are untoward long-term deleterious consequences that encompass mental and physical health, substance abuse, criminal behavior, and maladaptive functioning in everyday life (e.g., employment, managing finances). ODD also has a poor long-term prognosis, even though this disorder has been less well studied than has CD (Nock, Kazdin, Hiripi, & Kessler, 2007).

For both CD and ODD, fundamental questions related to etiology and processes through which symptoms emerge remain to be resolved. Perhaps all the more encouraging is that at this time, several evidence-based treatments have been devised (Kazdin, 2015). These interventions span the full range of severity from stubbornness and defiance in young children to violence among adjudicated adolescents. This chapter reports on our work on parent management training (PMT) and cognitive problem-solving skills training (PSST).

CONCEPTUAL MODEL GUIDING THE TREATMENT PROGRAM

Our default treatment has been PMT. However, in our early work with inpatient cases, occasionally there was no parent available to participate in treatment (e.g., due to mental illness, substance abuse, serving in prison). For such cases, we developed PSST and met only with the child in treatment.

Our emphasis on PMT stems from two separate bodies of research: (1) the seminal conceptual and empirical work of Patterson and his colleagues that focuses on coercive sequences of parent–child interactions and how they can be altered (e.g., Patterson, 2016; Reid, Patterson, & Snyder, 2002), and (2) advances in applied behavior analysis on how to change behavior (e.g., use of establishing operations, functional analysis, differential reinforcement; Cooper, Heron, & Heward, 2007; Kazdin, 2013). These lines of work can be translated into multiple concrete techniques to alter both parent and child behavior.

PMT emphasizes changing how the child responds in interpersonal situations at home, at school, and in the community and with teachers, parents, peers, siblings, and others. The treatment uses learning-based procedures to develop behavior and includes modeling, prompting and fading, shaping, positive reinforcement, practice and repeated rehearsal, extinction, and mild punishment. The treatment sessions develop skills that the parents use to implement behavior change programs in the home.

PSST focuses on cognitive processes, a broad class of constructs that pertains to how individuals perceive, code, and experience the world. Individuals who engage in conduct problem behaviors, particularly aggression, show distortions and deficiencies in various cognitive processes (e.g., Lochman, Powell, Whidby, & FitzGerald, 2012). Examples include generating alternative solutions to interpersonal problems (e.g., different ways of handling social situations), identifying the means to obtain particular ends (e.g., making friends) or consequences of one's actions (e.g., what could happen after a particular behavior); making misattributions to others of the motivation for their actions, perceiving how others feel, and expectations of the effects of one's own actions. Deficits and distortion among these processes relate to teacher ratings of disruptive behavior, peer evaluations, and direct assessment of overt behavior. Our program initially drew heavily on the pioneering work of Shure and Spivack (e.g., Shure, 1992; Spivack & Shure, 1982).

CHARACTERISTICS OF THE TREATMENT PROGRAM

Who Is Seen in Treatment

Our program began with an exclusive focus on CD among children ages 5–12 referred for inpatient care (Child Psychiatric Intensive Care Service, University of Pittsburgh School of Medicine). The program expanded to outpatient treatment, which has been the focus for approximately 25 years. Our current program, carried out at the Yale Parenting Center, provides services for children and families (see Kazdin, 2011). Younger and younger clinical referrals and pleas from mental health professionals and parents gradually expanded our age range (to ages 2–15). We continue to focus on CD. However, referrals have increased among children (under 5 years of age) who are more likely to be referred for stubbornness, tantrums, and defiance at home and other settings (preschool, day care).

The children are referred for oppositional, aggressive, and antisocial behavior, and usually meet criteria for a primary diagnosis (using DSM criteria) of CD or ODD. Approximately 70% of the children meet criteria for two or more disorders (range: zero to five disorders). Most youth fall within the normal range of intelligence (e.g., mean Full-Scale IQ = 100–105; range from 60 to 140 on the Wechsler Intelligence Scale for Children—Revised). The families we see are European American (~60–70% across projects), African American (~10–20%), or Hispanic American (~1–7%), Asian and Native American (~1–2% each), with multiracial families forming the remainder. The sex ratio of boys to girls in our projects is 3–4:1. Approximately 50% of our cases come from two-parent families; the full range of socioeconomic and educational status is represented.

Content of the PMT Sessions

Intervention with the Parent(s)

PMT is conducted primarily with the parent(s) or caregiver(s). The core treatment currently consists of five to 10 weekly sessions (45–60 minutes each). We have varied the duration of treatment over the course of projects. Our current treatment includes a core set of themes (see Table 9.1), each of which usually is covered in a single session. Optional sessions (usually three or fewer, if needed) can be used to address emergent problems, to refine a behavior change program, and or review content of a prior session. The individual sessions usually begin with a discussion of the general concept and technique for that session and how it is to be implemented. Most of the treatment session consists of modeling by the therapist and role playing and rehearsal of the parent.

For example, in a session on attending and ignoring, parents engage in several role plays with the therapist. Parent and therapist may alternate the role of the child and the parent. The “child’s behavior” is modeled by the therapist, who is demanding something, especially after being told “no.” The therapist whines, follows the parent who is walking away, and is demanding to be heard and to have some parental decision overturned; the parent ignores. Once the child calms down or begins to ask something nicely, the parent attends to the child and, depending on the behavior, may even praise the child for calming down quickly. This is rehearsed multiple times to help the parent practice ignoring and walking away, then return calmly to reinforce behavior that is more appropriate on the child’s part. The therapist sculpts parental behavior with antecedents (verbally and nonverbally before and during the enactments), feedback and praise (for small or large components of what the parent is doing), shaping, and moving to more complex and unreasonable child behavior that mimic worst-case scenarios of the child.

TABLE 9.1. Parent Management Training Sessions: Overview of the Core Themes and Sessions

1. *Introduction and Overview.* This session provides the parents with an overview of the program and outlines the demands placed upon them and the focus of the intervention.
2. *Defining and Observing.* This session trains parents to pinpoint, define, and observe behavior. The parents and trainer define specific problems that can be observed, and develop a specific plan to begin observations.
3. *Positive Reinforcement (Point Chart and Praise).* This session focuses on learning the concept of positive reinforcement, factors that contribute to the effective application, and rehearsal of applications in relation to the target child. An incentive (token/point) chart is devised, and the delivery praise of the parent is developed through modeling, prompting, feedback, and praise by the therapist.
4. *Time-Out from Reinforcement.* Parents learn about time out and the factors related to its effective application. Delivery of time out is extensively role-played and practiced.
5. *Attending and Ignoring.* Parents learn about attending and ignoring and choose undesirable behavior that they will ignore and a positive opposite behavior to which they will attend. These procedures are practiced within the session.
6. *Shaping/School Intervention.* Parents are trained to develop behaviors by reinforcement of successive approximations and to use prompts and fading of prompts to develop terminal behaviors. Also, in this session, plans are made to implement a home-based reinforcement program to develop school-related behaviors based on consultation of the therapist with the school.
7. *Review of the Program.* Observations of the previous week, as well as application of the reinforcement program, are reviewed. Details about the administration of praise, points, and backup reinforcers are discussed and enacted so the therapist can identify how to improve parent performance. The parent practices designing programs for a set of hypothetical problems.

8.* *Family Meeting.* At this meeting, the child and parent(s) are bought into the session. The programs are discussed along with any problems. Revisions are made as needed to correct misunderstandings or improve implementation.

9 and 10.* *Negotiating, Contracting, and Compromising.* The child and parent meet together to negotiate new behavioral programs and to place these in contractual form. The therapist shapes negotiating skills in the parent and child, reinforces compromise, and provides less and less guidance as more difficult situations are presented.

11. *Reprimands and Consequences for Low-Rate Behaviors.* Parents are trained in effective use of reprimands and how to deal with low-rate behaviors such as fire setting, stealing, or truancy.
12. *Review, Problem Solving, Practice, Role Reversal.* Parents practice designing new programs, revising ailing programs, and responding to a complex array of situations in which principles and practices discussed in prior sessions are reviewed. Also, parents pretend to be the therapist and "train" the therapist pretending to be a parent.

Note. The complete manual and supporting materials are provided elsewhere (Kazdin, 2005). Our sessions have varied in number in different projects. Rather than number of sessions, the content areas of this table are more critical. Those sessions with an asterisk (*) are the ones we have not included in our recent versions of treatment.

In some of our clinical trials, the child has been brought into the PMT sessions to reenact situations that have occurred in the home and handle new situations. With the child present, one can directly observe parent execution of procedures and child behavior in reenactments of situations that transpired at home. Also, we can ask the child questions that corroborate parental report of the program in the home or suggest inconsistencies. Currently, we do not include the child in the sessions; effective intervention has not required that. Also, scheduling children to be part of the sessions has raised more challenges in treatment delivery, because sessions can only be conducted after school or by taking the child out of school to attend the session.

Program Components Worth Emphasizing

PMT includes three critical components to effect behavior change in the parent and child, namely, the use of antecedents, behaviors, and consequences (see Kazdin, 2013). *Antecedents* (what comes before the behavior) increase the likelihood of obtaining child behaviors we seek (i.e., prompts, establishing operations) and include instructions, calm or playful tone of voice, supportive gestures and glances, and allowing choices when possible. We also train parents to omit harsh comments, nagging, threats, appeals to authority, and punitive physical contact (e.g., pulling a child) that are likely to decrease compliance or prosocial behavior (i.e., abolishing operations).

Behavior refers to ways of crafting and obtaining the behaviors of interest and includes three strategies. First and most straightforward is "shaping," which refers to developing goal behavior in steps or small increments until the final goal is achieved. Second, we use simulations in which the parent and child enact the desired behaviors under game-like circumstances. For example, the parent and child may play something called the "tantrum game," in which the parent pretends to deny an activity or privilege (e.g., "You cannot use the computer tonight"), the child enacts a controlled tantrum (e.g., no hitting of the parent, breaking things, or shouting), and then is praised for the result. This "game" can be used for many different behaviors when shaping is not likely to be a viable option, because initial small increments of the behavior are not present or evident with enough frequency. The "game" is a superb venue for combining antecedents and consequences, and can readily achieve the main goal of the intervention, repeated practice. As in other "simulations" (e.g., used by commercial airline pilots, by collegiate and professional athletic teams) the practice carries over to everyday circumstances and may then be directly fostered (reinforced) there. Finally, we use the game component to real-life situations that are not quite simulations. For example, to speak nicely or without swearing, we have used a game and challenge at the dinner table in which some contingency is in place for the entire family. It is a game in once sense (playful, artificial, and a challenge) but also part of a genuine everyday situation (eating dinner together). Shaping can be incorporated into the game as needed to develop behavior gradually.

The third component, *consequences,* focuses primarily on praise. We distinguish the praise that parents normally use (and encourage continuation of that) from strategic and special praise designed to alter behavior. With young children, usually this is effusive praise, a statement of precisely what is being praised, then some nonverbal gesture (e.g., patting the child's back or shoulder). With adolescents, the three components (verbal praise, statement, nonverbal gesture) are all included but are altered to be more "cool" and teen-friendly (e.g., no effusiveness—maybe praise and a statement that is whispered or privately conveyed, and a high-five hand gesture in the air). Use of other consequences are trained as well, based on extinction (nonattending, walking away) and mild punishment (brief time-out, response cost, brief loss of privilege).

Consequences also include a token reinforcement or point system in the home to provide a structured way of implementing the reinforcement contingencies. Our use of tokens is not so much for the child as it is for the parents. Parents are more likely to carry out the praise program when the structure and requirements of a point chart are used (e.g., monitoring delivery, accumulation, and use of points). Also, tokens facilitate tracking of reinforcement exchanges between parent and child (earning and spending the tokens). If behavior changes are needed at school (e.g., deportment, homework completion), we consult with teachers. A home-based token reinforcement system is devised in which child performance at school is monitored (e.g., via e-mail, phone) with consequences provided at home by the parents (see Kazdin, 2013).

Initial Goals of the Program Pertain to Parent Behavior

The overall goal of treatment is to develop prosocial behaviors and eliminate or drastically reduce disruptive behaviors, so the child can function well in the multiple situations and contexts that have been problematic. Yet, at the beginning of PMT, the goal is to develop parent competencies in concrete behaviors. Developing parent behavior is greatly facilitated by focusing on simple and arguably clinically irrelevant child behaviors (e.g., child room cleaning, table setting, helping with some task). We begin by ensuring that the parents reliably have the skills (e.g., delivering praise in a way that is qualitatively different from what they usually do) and can apply them. Then we move to changing child behaviors that were the basis for clinical referral.

Content of the PSST Sessions

PSST consists of weekly sessions with the child, with each session usually lasting 30–50 minutes. The core program (12 sessions; see Table 9.2) may be supplemented with optional sessions, if the child requires additional assistance in grasping the problem-solving steps (early in treatment) or their application in everyday situations (later in treatment).

Central to treatment is developing the use of *problem-solving steps* that serve as verbal prompts the children deliver to themselves to engage in thoughts and actions that guide behavior. The steps or self-statements include (1) "What am I supposed to do?"; (2) and (3) "I need to figure out what to DO and what would HAPPEN"; (4) "I need to make a choice"; and (5) "I need to find out how I did." Combining steps 2 and 3 requires the child to identify a solution (what to DO) and then the consequence (what would HAPPEN), and to do this with three or more solutions before proceeding to step 4. Using the steps, identifying and selecting prosocial solutions, and enacting these solutions in the sessions, are modeled and practiced extensively. Over the course of treatment, the steps move from overt (made aloud) to covert (silent, internal) statements.

The early sessions use simple tasks and games to teach the problem-solving steps and to help to deter impulsive responding. The content moves to individualized problem domains of the child (e.g., interactions with peers, parents, siblings, teachers, and others), with multiple instances and varied situations to help to promote generalization and maintenance. Throughout, the therapist prompts the child verbally and nonverbally to guide performance, provides a rich schedule of praise, delivers concrete feedback for performance, and models improved ways of performing.

TABLE 9.2. Problem-Solving Skills Training: Overview of the Core Sessions

1\. *Introduction and Learning the Steps.* This initial session teaches the problem-solving steps in a game-like fashion in which the therapist and child take turns learning the individual steps and placing them together in a sequence.

2 and 3. *Applying the Steps.* The child applies the steps to simple problem situations presented in a board game in which the therapist and child alternate turns. A series of supersolvers (homework assignments) begins at this point, in which the steps are used in increasingly more difficult and clinically relevant situations as treatment continues.

4\. *Applying the Steps and Role Playing.* The child applies the steps to identify solutions and consequences in multiple problem situations. Then the preferred solution, based on the likely consequences, is selected and then enacted through repeated role-plays.

5\. Parent–Child Contact. The parent(s), therapist, and child are seen in the session. The child enacts the steps to solve problems. The parents learn more about the steps and are trained to provide attention and contingent praise for the child's use of the steps and for selecting and enacting prosocial solutions.

6–11. *Continued Applications to Real-Life Situations.* The child uses the problem-solving steps to generate prosocial solutions to provocative interpersonal problems or situations. Each session concentrates on a different category of social interaction that the child might realistically encounter (i.e., peers, parents, siblings, teachers). Real-life situations, generated by the child, parent, or from contacts with teachers and others, are enacted; hypothetical situations are also presented to elaborate themes and problem areas of the child (e.g., responding to provocation, fighting, being excluded socially, being encouraged by peers to engage in antisocial behavior). The child's supersolvers also become a more integral part of each session; they are reenacted with the therapist beginning in session in order to better evaluate how the child is transferring skills to his or her daily environment.

12\. *Wrap-Up and Role Reversal.* This "wrap-up" session is included (a) to help the therapist generally assess what the child has learned in the session, (b) to clear up any remaining confusions the child may have concerning the use of the steps, and (c) to provide a final summary for the child of what has been covered in the meetings. The final session is based on role reversal in which the child plays the role of the therapist and the therapist plays the role of a child learning and applying the steps.

As an illustration, a typical situation might occur when a child is teased or threatened by a peer at school. In the session, the therapist presents the problem to the child and the child is asked to use her steps. The child asks step 1, answers it ("I am supposed to solve this problem without hitting or getting into any trouble"), then proceeds to the other steps. At step 2, the child identifies one alternative (e.g., "I could ignore and walk away") and immediately goes to step 3 to note the likely effect of that action ("That might work because the child might stop teasing, and I would not get into a fight"). The child then goes back to steps 2 and 3 for another solution and consequence (e.g., "I could go to the teacher"; "What would happen is that she could help stop it and know that I was being picked on and did not do anything"). This continues for at least three prosocial solutions. The child proceeds to step 4 to make a choice and explains why she selected this. Then the child moves to the final step to say how she did ("I used the steps, I came up with good solutions, the one I chose did not get me into trouble; I did GREAT!"). The therapist too provides effusive praise, noting what components of the process were done well, feedback (if further changes are necessary), then the sequence is enacted in role play in a seamless and uninterrupted way and with the selected prosocial solution.

Children begin each session with tokens (small plastic chips) that can be exchanged for small prizes at a "store" after each session. During the session, children can lose chips (response cost) for misusing or failing to use the steps or gain a few additional chips, although this rarely occurs. Social reinforcement and extinction are relied on more than token reinforcement to alter child behavior. The chips present opportunities to address special issues or problems with the child, such as encouraging a particular type of prosocial solution that the child might find difficult.

In vivo practice, referred to as "supersolvers," consists of systematically programmed assignments designed to extend the child's use and application of problem-solving skills to everyday situations. As available, parents are brought into sessions over the course of treatment to learn the steps and practice joint supersolver assignments that will be carried out at home. Prompting, shaping, and praise are used by the therapist to develop the parents' behavior. Over time, the supersolvers increase in complexity and encompass problem domains that led to the child's referral to treatment. As part of training in the sessions, children practice situations in which prosocial solutions they have selected do not work and they have to move to other alternatives (e.g., seeking the teacher's assistance).

Manual and Supporting Materials

For PMT, we have a treatment manual for professionals, with dialogue and supporting materials for each session (Kazdin, 2005; *www.oup.com/us/pmt*). The underpinnings of the treatment procedures are elaborated in a textbook (Kazdin, 2013) used as part of therapist rather than parent training. We also have several materials available for parents including trade books (Kazdin & Rotella, 2008, 2013), videos of specific techniques (*yaleparentingcenter.yale.edu/kazdin-method-sessions*), and a set of parent-friendly articles on specific procedures to promote behavior change (use of reinforcement schedules to eliminate behavior, shaping, time-out from reinforcement) and to caution against the use of other procedures (e.g., spanking, reprimands) that can impede prosocial functioning, if not actually do harm (see *www.slate.com/authors.alan_kazdin.html*).

For PSST, we have provided a summary of the treatment sessions and key steps in developing use of the problem-solving skills steps, how these are applied and enacted within the sessions, how they are faded over time, and homework assignments as children apply the skills in everyday life (*http://yaleparentingcenter.yale.edu/store*). We have not published a detailed, session-by-session manual or supporting materials beyond what is conveyed in the overview. Among the reasons has been our emphasis on PMT within our clinical service.

EVIDENCE ON THE EFFECTS OF TREATMENT

Research from Our Program

We have evaluated both PMT and PSST in randomized controlled trials (RCTs; see Table 9.3). Our key findings may be highlighted by noting four interrelated domains.

TABLE 9.3. Main Studies to Evaluate Treatment Outcome and Therapeutic Change

Investigation	Sample	Design and objective	Main findings
Kazdin et al. (1987a)	Inpatient children (ages 7–13, $N = 56$)	Randomized controlled trial (RCT): PSST, relationship therapy, and treatment contact control	PSST led to significantly greater decreases than did the other treatment and control conditions in externalizing and other behavioral problems at home and at school, and greater increases in prosocial behavior; the effects remained at a 1-year follow-up assessment.
Kazdin et al. (1987b)	Inpatient children (ages 7–12, $N = 40$)	RCT: PSST+PMT combined and treatment contact control (where both parents and child were seen as in the combined treatment)	Combined treatment showed significantly greater changes in externalizing and prosocial behaviors, and as in the prior study, the effects were maintained at a 1-year follow-up.
Kazdin et al. (1989)	Inpatient and outpatient children (ages 7–13, $N = 112$)	RCT: Compared PSST, PSST with *in vivo* practice, and relationship therapy	Both PSST conditions showed significant changes on measures of problem and prosocial behavior compared to relationship therapy; PSST with *in vivo* practice led to greater improvements in behaviors at school than did PSST alone, but these differences were no longer evident at 1-year follow-up.
Kazdin, Siegel, & Bass (1992)	Outpatient children (ages 7–13, $N = 97$)	RCT: Evaluated effects of PSST, PMT, and PSST+PMT combined	All treatments improved child functioning on measures of externalizing symptoms and prosocial behavior; the combined treatment led to significantly greater changes immediately after treatment and at 1-year follow-up, and placed more children within the nonclinical (normative range) in levels of functioning.
Kazdin, Mazurick, & Siegel (1994)	Outpatient children (ages 4–13, $N = 75$)	Evaluated therapeutic change of completers and dropouts and factors that account for their different outcomes	At the end of treatment, children who terminated prematurely showed greater impairment at home, at school, and in the community compared to children who completed treatment. However, these differences were accounted for primarily by severity of impairment at pretreatment rather than by receiving less treatment.
Kazdin (1995)	Outpatient children (ages 7–13, $N = 105$)	Evaluated of moderators of change among families that received PMT or PSST+PMT combined	Child severity and scope of dysfunction, parent stress, and family dysfunction predicted symptoms and prosocial functioning at the end of treatment, but the effects varied by outcome (at home or at school). The proposed moderators, even when significant, were not strongly related to outcome.

Kazdin & Crowley (1997)	Outpatient children (ages 7–13, $N = 120$)	Examined relation of intellectual functioning and severity of symptoms on responsiveness to PSST	Children more deficient in cognitive/academic skills and more severely impaired improved significantly with treatment but less than their less impaired counterparts.
Kazdin & Wassell (1998)	Outpatient children (ages 3–13, $N = 304$)	Examined the relation of treatment completion and therapeutic change among children who received PSST, PMT, or PSST+PMT combined	Treatment completion was strongly related to therapeutic change, with greater change among those who completed treatment. However, 34% of those who dropped out early made significant improvement compared to those who remained in treatment (78%). Predictors for improvement did not vary as a function of whether individuals dropped out or completed treatment.
Kazdin & Wassell (1999)	Outpatient children (ages 3–13, $N = 200$)	Examined predictors of therapeutic change	Perceived barriers to participation in treatment were related to therapeutic changes in the children. Greater barriers were associated with less change; the findings could not be explained by several child, parent, and family variables.
Kazdin & Wassell (2000a)	Outpatient children (ages 2–14, $N = 169$)	Examined relation of parent psychopathology and quality of life as moderators of therapeutic change in children who received PSST, PMT, or PSST+PMT combined	Greater parent psychopathology and lower quality of life at pretreatment predicted therapeutic changes, controlling for socioeconomic status (SES) and child severity of dysfunction. Greater perceived barriers to treatment by parents were associated with less therapeutic change on the part of the children.
Kazdin & Wassell (2000b)	Outpatient children (ages 2–14, $N = 250$)	Examined therapeutic changes in children, parents, and families and the predictors of these change among children who received PSST, PMT, or PSST+PMT combined	Child, parent, and family functioning improved over the course of treatment. Moderators of treatment varied as a function of child, parent, and family outcomes.
Kazdin & Whitley (2003)	Outpatient children (ages 6–14, $N = 127$)	RCT: All families received PSST+PMT; half were assigned to receive a supplementary component to address parental stress	Treatment with the component to address parental stress was associated with greater therapeutic change among the children and reduced barriers to treatment perceived by the parents.
Kazdin, Marciano, & Whitley (2005)	Outpatient children (ages 3–14, $N = 138$)	Evaluated child–therapist and parent–therapist alliance as a predictor of therapeutic change among families that received PMT alone or PSST+PMT combined	A more positive therapeutic alliance (for either child or parent) was associated with greater therapeutic change, fewer experienced barriers to treatment, and greater acceptability of treatment. SES, parent dysfunction and stress, and pretreatment child dysfunction did not account for the findings.

(continued)

TABLE 9.3. *(continued)*

Investigation	Sample	Design and objective	Main findings
Kazdin, Whitley, & Marciano (2006)	Outpatient children (ages 6–14, *N* = 77)	Evaluated child–therapist and parent–therapist alliance as a predictor of therapeutic change among families that received PSST+PMT combined	Both alliances predicted therapeutic changes of the children. The parent–therapist alliance predicted improvements in parenting practices in the home; effects were not explained by SES, parent and child dysfunction, and or parental stress.
Kazdin & Whitley (2006a)	Outpatient children (ages 2–14, *N* = 218)	Evaluated parent–therapist alliance, pretreatment parent social relations, and parenting practices developed with PMT among families that received PMT alone or PSST+PMT.	Alliance predicted parent improvements over the course of treatment; alliance was partially mediated by pretreatment parent social relations.
Kazdin & Whitley (2006b)	Outpatient children (ages 3–14, who met criteria for ODD or CD; *N* = 315)	Evaluated comorbidity (0, 1, or more comorbid disorders separately for ODD and CD cases and case complexity (SES, scope of child dysfunction, parent and family stress and dysfunction, barriers to treatment). Children received PSST, PMT, or PSST-PMT	Children's outcomes did not differ as a function of comorbidity or case complexity; greater change (pre- to posttreatment) was associated with more dysfunction (multiple comorbidities and greater family complexity) but the end points (posttreatment) were not different. Barriers to treatment moderated treatment outcome; greater barriers were associated with less change in the children.
Kazdin & Durbin (2012)	Outpatient children (ages 6–13, referred for oppositional, aggressive, or antisocial behavior; *N* = 97)	Evaluated predictors of alliance and whether they could account for the relation of alliance to therapeutic change. All cases received PSST + PMT.	Child–therapist alliance contributed to therapeutic change. The stronger the alliance, the greater the change. Pretreatment social competence of the child and level of intellectual functioning predicted the quality of alliance but did not account for or explain the alliance–outcome connection.
Rabbitt et al. (2016)	Outpatient children (ages 6–13, referred for oppositional, aggressive, or antisocial behavior; *N* = 60)	RCT: Evaluated two variations of computer delivered treatment of PMT that varied in the amount of contact and guidance with the therapist. A third group of participants, *n* = 60) was matched to the children in the other two groups (*n* = 60) and drawn from the clinic database involving in-person treatment and used to benchmark the changes with the computer-delivered treatment	The two treatments were equally effective in the degree of therapeutic change among the children. The changes of the two groups were at the level of in-person treatment using the benchmark group for comparison. The two computer-delivered treatments were no different in the parent–therapist alliance, despite greatly reduced contact with the therapist in one of the group. On the other hand, parents in the group with the therapist present and helping with each session evaluated their treatment as more acceptable than did parents in the reduced contact group.

Note. The table includes studies that had treatment outcome as the major focus. Many of our other studies are cited in the text on related topics (e.g., participation in treatment) and are not included here.

Outcome Effects

PMT and PSST alone or in combination produce reliable and significant reductions in oppositional, aggressive, and antisocial behavior, and increases in prosocial behavior among children. Parent dysfunction (depression, multiple symptom domains) and stress decline and family relations improve (Kazdin, Bass, Siegel, & Thomas, 1989; Kazdin, Esveldt-Dawson, French, & Unis, 1987a, 1987b; Kazdin, Siegel, & Bass, 1992). The effects of PMT can be enhanced by providing supplementary sessions that focus on parent sources of stress (Kazdin & Whitley, 2003). Also, a motivational enhancement intervention can improve parent motivation for, adherence to, and attendance of treatment (Nock & Kazdin, 2005). Computer-based delivery of PMT and reduced contact with a therapist have been as effective as PMT delivered in person (Rabbitt et al., 2016).

The Therapeutic Alliance

Child–therapist (in PSST) and parent–therapist (in PMT and PSST) alliances relate to several outcomes. The more positive the child–therapist and parent–therapist alliance during treatment, the greater the therapeutic change of the child and improvements of the parents in parenting practices, the fewer barriers parents experience during the course of treatment, and the more favorably parents rate the acceptability of the treatment (Kazdin & Durbin, 2012; Kazdin, Marciano, & Whitley, 2005; Kazdin & Whitley, 2006b; Kazdin, Whitley, & Marciano, 2006),

Moderators of Treatment

Several characteristics of parents and children, beyond alliance, moderate therapeutic change, including severity of child dysfunction, child IQ, parent stress, parent psychopathology, and others. The most robust moderator of our treatment has been parental report of barriers to participation in treatment. These barriers reflect four areas: stressors that compete with participating in treatment, perceived treatment demands, perceived relevance of treatment, and obstacles in relation to the therapist. The higher the perceived barriers, whether evaluated by parents or therapists, the less the therapeutic change among the children, a relation not accounted for by other factors, such as severity of parent or child dysfunction, stress in the home, or parent attendance to treatment (Kazdin, 1995; Kazdin & Crowley, 1997; Kazdin, Holland, & Crowley, 1997; Kazdin, Holland, Crowley, & Breton, 1997; Kazdin & Wassell, 1999, 2000a, 2000b; Kazdin & Whitley, 2006a).

Participation in Treatment

Parent dysfunction, family stress, and the experience of barriers to participation in treatment are among the more robust predictors of canceling and not showing up for sessions, and dropping out early. Dropping out early does not necessarily mean failure in treatment. Among those who drop out of treatment very early, 34% report large improvements in the behavior of their children (Kazdin, 1990; Kazdin & Mazurick, 1994; Kazdin, Mazurick, & Bass, 1993; Kazdin, Mazurick, & Siegel, 1994; Kazdin, Stolar, & Marciano, 1995; Kazdin & Wassell, 1998). Indeed, in many instances, individuals convey that they are dropping out because they perceive no need to continue and complete our planned regimen.

Overall, our work has shown that PSST and PMT can effect significant change in severely disturbed children referred for inpatient or outpatient treatment. Effects of treatment are evident in performance at home, at school, and in the community, both immediately after treatment and up to a 1-year follow-up assessment. Symptoms levels at the end of treatment often fall within a sex- and age-based normative range.

Evidence Beyond Our Program: Briefly Noted

The evidence base for PMT is remarkable in scope and strength. First, there are several variations of PMT and programs of research, many of which are included in this book (e.g., The Incredible Years, Parent–child interaction therapy, Parent Management Training—Oregon Model, and Triple P—Positive Parenting Program). These programs have included multiple RCTs, tests in different venues (home, school), and in the context of treatment and prevention.

Second, core procedures that are used in PMT have been applied widely to other domains of clinical dysfunction in children and adults (e.g., autism spectrum disorders, anxiety disorders, addictive behaviors, psychoses) and well beyond clinical work. For example, the procedures have been effectively applied to diverse domains of functioning (e.g., classroom behavior, reading and writing, athletic performance, recycling and energy conservation, basic training in the military, gambling, engaging in social activities, adhering to medical regimens, engaging in exercise), to a wide age range (from toddlers through older adults), and in multiple contexts (the home, schools, colleges, business and industry, hospitals, the community) (Cooper et al., 2007; Kazdin, 1977, 2013).

Finally, basic human and nonhuman animal research spanning decades has elaborated operant conditioning principles and techniques from which PMT procedures draw. Seminal nonhuman animal research has provided extensive data on core facets of learning and performance (e.g., schedules of reinforcement, extinction, punishment) that are central to PMT (e.g., Azrin & Holz, 1966; Ferster & Skinner, 1957). With only broad brush strokes here, it is might be reasonable to claim that PMT and the techniques on which it is based are without peer in the supportive evidence from which they can draw.

FUTURE DIRECTIONS

There is an enormous treatment gap (i.e., the gap between how many people are in need of treatment [prevalence] and those who actually receive treatment). This applies to not only disruptive behavior disorders, which has been the focus of this chapter, but also to psychiatric disorders more generally. The vast majority of individuals (children, adolescents, and adults) who are in need of services receive no services at all. Consequently, a high priority for future research is to extend treatments to reach more people in need of services. One area worth special research emphasis in PMT might be greater use of technology and social media (apps, the Web, texting, Facebook) to extend the intervention on a much larger scale than what is being accomplished now. The use of the Web, as one option, provides huge potential in extending the reach of evidence-based psychotherapies. An exemplary illustration was a large-scale Web-based intervention for smoking cessation that reached over 290,000 individuals from 168 countries (Muñoz et al., 2016). A research priority would be to extend PMT to more people in need and to evaluate whether favorable outcomes can be achieved at that scale.

Another priority area would be to deliver and evaluate PMT as a tool for parenting in general rather than, or at least in addition to, a clinical intervention. "Normal" parenting often is a challenge, and PMT provides tools that can help with these challenges (e.g., children eating vegetables, practicing a musical instrument, doing homework, or teens communicating without sarcasm, eye rolling, and visible disgust because they are in the presence of a parent). Broad application may prevent or reduce deleterious parenting practices (e.g., use of corporal punishment). Making PMT more widely available to all parents in a user-friendly fashion would be a major contribution to treatment, prevention, and family harmony.

CONCLUDING COMMENTS

We have evaluated PMT and PSST with a range of child samples, including inpatient and outpatient cases. Among all of our samples, children show multiple disorders and usually multiple risk factors for continued dysfunction. As might be expected, the child problems often are embedded in contexts that include parent sources of dysfunction, stress, and family issues (e.g., domestic violence, socioeconomic disadvantage). Our interventions have produced reliable changes in child behavior at home, at school, and in the community, even among the most severely impaired cases and in complex family situations. In addition, we find decreases in parent depression and stress, and improvements in family relations. Making concrete changes in how the children function in everyday life appears to have positive collateral effects on the parents and family.

Our most recent work has focused on making PMT more accessible and applicable clinically by reducing the amount of professional therapist time that is required and delivering treatment online. Our initial evidence suggests no loss of treatment efficacy with these changes. These findings are in keeping with those of others who have extended PMT in ways that go beyond individual, in-person treatment. From the work of many researchers, including those with chapters in this book, PMT is one of the more well-studied interventions with a strong experimental and applied research base. The challenges are extending this on a scale that makes a difference in society, in addition to the lives of individual children and their families.

ACKNOWLEDGMENTS

Research reported in this chapter was facilitated by support from Research Scientist Development and Research Scientist Awards (Nos. K02, K05 MH00353), a MERIT Award (No.

R01 MH35408), and other project grants (Nos. R01 MH59029, R34 MH093326) from the National Institute of Mental Health and grants from the Jack Parker Foundation, Leon Lowenstein Foundation, the Rivendell Foundation of America, the William T. Grant Foundation (No. 98-1872-98), Community Foundation of New Haven, and Yale University. No less essential to the work has been the remarkable staff, pre- and postdocs, students, and interns who have served at the Yale Parenting Center over the years.

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CHAPTER 10

The Coping Power Program for Aggressive Behavior in Children

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OVERVIEW OF THE CLINICAL PROBLEM

Childhood aggression is a central focus of many prevention and treatment efforts because of its relative stability over time and consistent links with a variety of negative outcomes, including delinquency, substance use, conduct problems, academic difficulties, and poor adjustment. Additionally, aggression in children can co-occur with, and can at times predict, clinical disorders such as oppositional defiant disorder (ODD) and conduct disorder (CD). Early hostile behavior has also received considerable attention, because youth who engage in the most persistent, severe, and violent antisocial behavior are most likely to initiate their deviant behavior in childhood rather than adolescence. As a result, childhood aggression is often viewed as an indication of a broader based syndrome characterized by various norm-violating behaviors in adolescence.

Although there is no commonly accepted definition of “aggressive behavior,” various conceptualizations have included arguing, bullying, using strong-arm tactics, threatening, striking in anger, and engaging in physical fights. The diversity of these aggressive activities, as well as the tendency for some children to exhibit only certain types of combative behavior, has prompted researchers to devise classification systems aimed at identifying clinically meaningful subgroups of aggressive children. These complexities aside, aggressive behavior has an aversive effect on others, leading children who exhibit this behavior to develop poor relations with their peers, parents, and teachers.

CONCEPTUAL MODEL GUIDING THE TREATMENT PROGRAM

The development of adolescent antisocial behavior is often conceptualized as the result of a set of familial and personal factors, with children's aggression representing a substantial part of that developmental course (Conduct Problems Prevention Research Group, 1992; Lochman & Wells, 1996). Experiences in the school setting can also contribute to the developmental course of conduct problems, as children's behavioral problems elicit negative reactions from teachers and peers, leading to a weakened bond to school and setting the stage for academic decline and susceptibility to deviant peer group influences. By adolescence, this trajectory can result in a heightened risk of substance use, delinquent acts, and academic failure. Thus, the contextual social-cognitive model of prevention presented here focuses on two relevant sets of potential mediators of adolescent antisocial behavior: (1) child-level factors, including lack of social competence and poor social-cognitive skills, and (2) parent-level contextual factors, including problems with caregiver involvement and with effective implementation of child discipline.

Children's Social-Cognitive Processes

The contextual social-cognitive model of prevention was influenced by research supporting the six-stage model of social information processing (SIP). In the first three stages (Lochman, FitzGerald, & Whidby, 1999), children encode relevant details in the environment, generate interpretations about the nature of the situation, then formulate a social goal that will influence their response to the situation (e.g., gaining revenge, avoiding conflict). During the encoding stage, aggressive children are more likely to attend to hostile cues, remember fewer cues, and attend only to the most recent cues in comparison to their nonaggressive peers. Higher levels of aggression are associated with an increased tendency to view others' actions as hostile, suggesting that aggressive children have problems interpreting the information they have encoded. When generating interpersonal goals, aggressive children also tend to endorse goals associated with dominance, disruption, and troublemaking more often than their peers, even in fairly benign conflict situations (Pardini, 2011).

The final three stages of the SIP model involve generating a mental list of possible responses, systematically evaluating the quality of each response, then enacting the chosen response. Aggressive children have been shown to have problems at each of these stages (Lochman & Dodge, 1994). When asked to generate solutions to interpersonal conflicts, aggressive children demonstrate deficiencies in the overall number and quality of solutions generated, and produce fewer verbal solutions and more direct-action solutions involving physical aggression. Youth exhibiting deviant behavior are also more likely to expect aggression to lead to benefits including tangible rewards, reduced aversive treatment from others, and a sense of dominance/control, and less likely to believe that aggression will result in punishment and feelings of remorse (Pardini, 2006; Pardini & Byrd, 2012; Pardini, Lochman, & Frick, 2003). Even when aggressive children choose to enact positive responses, evidence suggests that they are less adept at carrying them out. The entire process is considered circular in nature, because the outcome of the enacted response often influences future response choices.

Contextual Parenting Behaviors

Childhood aggression may arise out of early contextual experiences with parents who provide harsh or irritable discipline, model poor problem solving, deliver vague commands, and ineffectively monitor their children's behavior (Pardini, Waller, & Hawes, 2014). Parental risk factors such as lack of maternal involvement and inconsistent discipline have been linked to childhood aggression and the development of adolescent antisocial behavior. There is also evidence that parents who use irritable and ineffective discipline are more likely to have children who exhibit overt (oppositional behavior, physical aggression) and covert (stealing, lying, truancy) antisocial behavior. These results suggest that parent factors can exert a direct effect on adolescent antisocial behavior and an indirect effect via their association with factors such as childhood aggression, poor social competence, and academic failure. The relation between poor parenting and children's aggressive behavior is also viewed as bidirectional, with ineffective parenting stimulating children's negative behavior and deteriorating in response to increasingly negative child behaviors (Pardini, 2008).

CHARACTERISTICS OF THE TREATMENT PROGRAM

Using the contextual social-cognitive model as a guide, the Anger Coping Program (Larson & Lochman, 2010) was designed to prevent the development of antisocial behavior in adolescents by modifying child social information-processing problems associated with childhood aggression. Although outcome research indicated postintervention behavioral improvements and preventive effects on substance use for children who participated in Anger Coping, the effects were not maintained over time, and there were no preventive effects on delinquency (Lochman, 1992). To improve outcomes, an enhanced version of Anger Coping, Coping Power, was developed by adding content to the child curriculum and by including an additional component for parents.

The Coping Power and Anger Coping Programs are both supported by outcome research (see Tables 10.1 and 10.2). The Coping Power Program, the more comprehensive of the two programs, is described below. The Anger Coping Program has been reviewed in earlier editions of this text (see Lochman, Boxmeyer, Powell, Barry, & Pardini, 2010).

Coping Power Child Component

Coping Power (Lochman, Wells, & Lenhart, 2008) is designed for four to six children in a group format; however, the content can also be delivered individually. A group format has several advantages over individual sessions; for example, the group format provides opportunities to address children's difficulties with social competence through modeling, role playing, group problem solving, and feedback/reinforcement of children's social behavior with peers. The program consists of 34 weekly child sessions delivered over a 15-month period, typically during the late elementary and early middle school years.

TABLE 10.1. Anger Coping Research

Study	Sample	Design	Main findings
Intervention outcome studies			
Lochman, Nelson, & Sims (1981)	Second and third graders	Pre–post	Reduced aggression
Lochman, Burch, Curry, & Lampron (1984); Lochman (1992)	Fourth- through sixth-grade boys (*N* = 76)	RCT: AC, GS, AC+GS, and TAU control	Compared to GS and TAU, boys in the AC and AC+GS conditions displayed less disruptive classroom behavior and less parent-reported aggression. GS enhanced AC's treatment effects. Preventive effects on marijuana, drug, and alcohol use were found after 3 years.
Lochman, Lampron, Gemmer, Harris, & Wyckoff (1989)	Elementary school boys (mean age = 11.0, *N* = 32)	RCT: AC, AC + teacher consultation, and TAU control	Compared to TAU, boys in both AC conditions displayed greater reductions in aggression and off-task behavior and improvements in perceived social competence and self-esteem.
Moderation of outcome effects			
Lochman, Lampron, Burch, & Curry (1985)	Fourth- through sixth-grade boys (*N* = 76)	RCT: AC, GS, AC+GS, and TAU control	AC boys who exhibited high levels of peer rejection, comorbid internalizing symptoms, and/or poor problem-solving skills showed the greatest reductions in parent-rated aggression.

Note. AC, Anger Coping; GS, goal setting; RCT, randomized controlled trial; TAU, treatment as usual.

The Coping Power Child Component addresses social-cognitive deficits commonly experienced by children with disruptive behavior problems. Early sessions in the program focus on helping children to identify personally meaningful long-term goals, and to break these goals into short-term daily goals. Children continue to set and monitor goals throughout the program, working with their classroom teachers to receive daily feedback about their progress. The program next addresses organization and study skills, which are frequently lacking for children with disruptive behavior problems and may contribute to academic difficulties and conflicts with parents and teachers. In a series of sessions, children learn to accurately identify cognitive, behavioral, and physiological signs of anger, and to use self-statements, distraction, and relaxation techniques to cope with angry arousal. Perspective-taking activities encourage children to reflect on others' points of view and to consider nonhostile attributions for others' intentions. A key feature of the program is the "PICC" (Problem Identification, Choices, Consequences) model, which is used to teach children to accurately identify a problem, to generate a variety of possible choices for responding to the problem, and to consider the various consequences associated with each potential choice. In the program's final sessions, children practice strategies for coping with peer pressure, entering new peer groups, and negotiating and cooperating with peers.

TABLE 10.2. Coping Power Research

Study	Sample	Design	Main findings
Intervention outcome studies			
Lochman et al. (2001)	Hearing-impaired children at a residential school for the deaf	RPS: CP modified for hearing-impaired children, TAU control	Compared to TAU, CP children demonstrated improved problem-solving skills.
Lochman & Wells (2002a, 2004)	Elementary school boys (*N* = 183)	RPS: CP Child Component, CP Child + Parent Components, and TAU control	Compared to TAU, both CP conditions showed reductions in delinquency and substance use at a 1-year follow-up; effects were strongest for the combined condition. Both intervention conditions also demonstrated improved classroom behavior. Changes in social-cognitive processes were associated with outcomes.
Lochman & Wells (2002b, 2003); Lochman, Wells, Qu, & Chen (2013)	Elementary school children (*N* = 245)	RPS: CP (Child + Parent), Universal Classroom Intervention (UCI), CP (Child + Parent) and UCI, and TAU control	CP + UCI produced lower rates of substance use and aggression, higher perceived social competence, and greater behavioral improvement. CP alone resulted in reduced proactive aggression, lower activity level by children, better teacher-rated peer acceptance of target children, and increased parental supportiveness. After 1 year, all intervention cells produced reductions in substance use and delinquency compared to TAU. Positive effects on aggression at school persisted after 3 years.
Lochman, Boxmeyer, Powell, Roth, & Windle (2006); Lochman et al. (2014)	Elementary school children (ages 9–12, *N* = 241)	RCT; 24 session CP (Child + Parent) and TAU control	Compared to TAU, CP resulted in lower teacher-rated externalizing behavior for children of parents who attended at least one parent session. Positive effects on externalizing behavior and callous–unemotional traits were found after 3 years.
Lochman, Boxmeyer, et al. (2009); Lochman et al. (2012)	Elementary school children (*N* = 531)	Dissemination study; CP delivered by school counselors who had received basic training (BT) or intensive training (IT); TAU control	Compared to TAU, only students of IT counselors demonstrated significant behavioral and academic improvements. At a 2-year follow-up, students of IT counselors did not show the steep declines in language arts grades evident among TAU children.
Peterson, Hamilton, & Russell (2009); Jurecska, Hamilton, & Peterson (2011)	Elementary school children (ages 10–12, *N* = 119)	RCT; 24 session CP (Child Only) and TAU control	CP produced significant teacher-rated behavioral improvements. Reductions in hyperactivity were associated with better behavioral response.

(continued)

TABLE 10.2. *(continued)*

Study	Sample	Design	Main findings
van de Wiel et al. (2007); van de Wiel, Matthys, Cohen-Kettenis, & van Engeland (2003); Zonnevylle-Bender, Matthys, van de Wiel, & Lochman (2007)	Outpatient children (ages 8–13, *N* = 77)	RCT; modified CP and clinic TAU	Both groups improved significantly on disruptiveness at posttreatment and after 6 months, but CP had significantly greater reductions in overt aggression by posttreatment than TAU. After 4 years, CP children had significantly lower marijuana and tobacco use than TAU children.
Cabiya et al. (2008)	Outpatient children in Puerto Rico (ages 8–13, *N* = 278)	RCT; culturally adapted CP (Child + Parent) and TAU control	Compared to TAU, CP children had reductions in depressed mood, distractibility, and disruptive behaviors. Effects became more pronounced after 6 months.
Muratori, Milone, Manfredi, et al. (2015)	Outpatient children in Italy (ages 9–12, *N* = 98)	Sequential assignment to condition; culturally adapted CP and TAU	Compared to TAU, CP children had greater reductions in externalizing and internalizing problems, and greater decreases in callous–unemotional traits.
Muratori, Bertacchi, et al. (2015)	Elementary school children in Italy (*N* = 184)	RCT; Universal CP (culturally adapted), TAU control	Compared to TAU, children in CP classrooms had reductions in overall problematic behaviors and inattention–hyperactivity problems, and increases in prosocial behaviors.
Muratori, Giuli, et al. (2016)	Preschool children in Italy (age 4 years, *N* = 164)	RCT; Universal CP (culturally and developmentally adapted), TAU control	Compared to TAU, children in CP classrooms demonstrated significant reductions in teacher- and parent-rated behavioral problems.
Predictors of Outcome and Intervention Engagement			
Minney, Lochman, & Guadagno (2015)	Elementary school children (ages 9–12, *N* = 120)	24 session CP (Child + Parent)	Stressful life events and low social support were associated with lower levels of attendance and engagement in the CP parent component.

Andrade, Browne, & Naber (2015)	Outpatient children (ages 9–12, $N = 37$)	CP Parent Component	Parents who demonstrated relatively more positive parenting and less inconsistent discipline (categorized as “less in need”) attended the fewest CP parent sessions.
Ellis, Lindsey, Barker, Boxmeyer, & Lochman (2013)	Elementary school children (ages 9–12, $N = 114$)	24 session CP (Child + Parent)	Child engagement in CP predicted parent attendance at CP parent sessions.
Jarrett, Siddiqui, Lochman, & Qu (2014)	Elementary school children (ages 9 – 12, N = 112)	24 session CP (Child + Parent)	Children with higher baseline depression had greater reductions in parent- and teacher-rated externalizing problems at postintervention.
Muratori, Milone, Nocentini, et al. (2015)	Outpatient children (ages 8–11, $N = 62$)	Pre–post	Lower levels of parent depression and improvements in consistent discipline were associated with decreased child aggression.
Lochman, Dishion, et al., 2015	Elementary school children (ages 9–11, $N = 360$)	RCT: Individual CP, Group CP	Both conditions led to significant reductions in parent- and teacher-rated externalizing problems after 1 year. Effects on teacher ratings were stronger for Individual CP, and were moderated by children’s baseline levels of inhibitory control.
Lochman, Powell, et al. (2009, 2015)	Elementary school children ($N = 531$)	Dissemination study: CP delivered by school counselors who had received basic training (BT) or intensive training (IT); TAU control	School-level factors and counselor traits were associated with quality of program implementation. Counselor factors and level of children’s improvement predicted continued use of CP after 2 years.

Note. CP, Coping Power; RPS, randomized prevention study; RCT, randomized controlled trial; TAU, treatment as usual.

Coping Power Parent Component

The Coping Power Parent Component (Wells, Lochman, & Lenhart, 2008) consists of 16 group sessions that take place separately from the child sessions, but during the same 15-month period. Sessions typically occur on a twice-monthly basis and are 60–90 minutes long. Specific strategies are taught to foster family relationships and manage children's behavior. In addition, parents are also informed of the skills targeted in the Child Component and are encouraged to reinforce their children for using these new skills at home and at school.

Coping Power Parent group sessions address the use of social learning techniques, such as identifying prosocial and disruptive behavioral targets for children using specific operational terms, rewarding and attending to appropriate child behaviors, giving effective instructions and establishing age-appropriate rules and expectations for children in the home, and applying effective consequences for negative child behaviors. Parents also learn ways to manage child behavior outside the home and to establish ongoing family communication structures. In addition to these standard skills, parents learn additional techniques that support the social-cognitive and problem-solving skills that their children learn in the Child Component. For example, parents learn techniques to manage sibling conflict in the home and to apply the PICC model to family problem solving. The content of the Coping Power Child and Parent Components is summarized in Table 10.3.

EVIDENCE ON THE EFFECTS OF TREATMENT

A series of research studies spanning over 30 years indicates that a cognitive-behavioral intervention using the Anger Coping and Coping Power Program framework can have immediate effects at postintervention on children's aggressive behavior at home and at school, according to parent, teacher, and independent observer ratings (see Tables 10.1 and 10.2). The effect sizes are typically in the moderate range, and moderators such as initial levels of problem-solving skills and family income level can impact the intervention effects, indicating that not all children respond to this form of intervention. The Anger Coping and Coping Power Programs can have lasting preventive effects on children's later externalizing behavior problems up to 3 years following intervention completion—but an adjunctive parent intervention component appears necessary to achieve longer- term effects on delinquency and substance use. The results emphasize that this form of cognitive-behavioral intervention can be useful for not only short-term treatment purposes but also for long-term prevention purposes and that the program can be effectively delivered in school and clinic settings.

Coping Power Program Outcome Effects

Coping Power has been implemented for both prevention and treatment purposes. Given that Coping Power targets processes contributing to children's aggression, which can exist as part of an identified disorder (e.g., CD) or as a risk factor for the development of a diagnosable disorder, the program can be used flexibly for prevention or treatment. For behaviors such as aggression that can lead to impairment,

TABLE 10.3. Overview of Topics in Coping Power Child and Parent Components

Child component		Parent component	
Session No.	Topics and skills	Session No.	Topics and skills
1	Introductions, Group Structure, and Goal Setting	1	Introductions and Academic Support at Home
2–3	Setting Personal Behavioral Goals	2	Academic Support at Home
4	Organizational and Study Skills	3–4	Stress Management for Parents
5–6	Awareness of Feelings and Physiological Arousal Related to Anger	5	Improving the Parent–Child Relationship and Increasing Positive Child Behaviors
7	Anger and Self-Control	6	Ignoring Minor Disruptive Behavior
8–11	Using Self-Statements for Anger Coping	7	Giving Effective Instructions to Children
12–14	Perspective-Taking	8	Establishing Household Rules and Expectations
15–19	Social Problem Solving (PICC)	9–10	Discipline and Punishment
20–22	Group Creation of Videotape (PICC)	11	Planning for Summer
23	Review	12	Academic Support at Home
24	Organizational and Study Skills	13	Building Family Cohesion
25	Teacher Expectations and Conflict	14	Family Problem Solving
26	Friendship/Group Entry	15	Family Communication
27	Group Entry/Peer Negotiation	16	Long-Term Planning and Termination Group Celebration
28	Sibling Conflict		
29	Peer Pressure		
30	Peer Pressure Refusal Skills		
31	Neighborhood Problems		
32	Resisting Peer Pressure and Joining Positive Peer Groups		
33	Positive Quality Development and Peer Relationships		
34	Review and Termination; Group Celebration		

alone or within the context of a diagnosed disorder, treatment and prevention services can be conceptualized on a continuum rather than as discrete processes (Matthys & Lochman, 2010). Universal prevention services are offered to an entire group and target common developmental risk factors, while selective prevention programs are directed to a group with an identified risk factor (e.g., children of incarcerated parents) who have not necessarily demonstrated problem behavior (Mrazek & Haggerty, 1994). Indicated prevention involves screening to identify individuals who display features of a disorder, though not in a diagnosable range. In outcome studies, Coping Power has been delivered at the classroom level as a universal prevention program, to students screened for elevated levels of aggression as an indicated prevention program, and to children diagnosed with disruptive behavior disorders as a treatment intervention.

School-Based Targeted Prevention Studies

A series of studies has examined the efficacy and effectiveness of Coping Power as an indicated prevention program for aggressive children and for unique subpopulations of youth exhibiting severe conduct problems. For example, a version of Coping Power appropriate for deaf children was found to improve problem-solving skills in hearing-impaired children whose behavior had been rated as aggressive by teachers in a residential school for deaf children (Lochman et al., 2001). In traditional school settings, Coping Power has been found to produce preventive effects on delinquent behavior and substance use at 1-year follow-up, with the strongest effects emerging when children and parents both participate (Lochman & Wells, 2004). Path analyses indicate that intervention effects are at least partly mediated by changes in boys' social-cognitive processes and schemas, and by changes in parenting processes (Lochman & Wells, 2002a).

Including a universal prevention component (Lochman & Wells, 2003) has been shown to result in lower rates of self-reported substance use, lower teacher-rated aggression, higher perceived social competence, and greater teacher-rated behavioral improvement, relative to a control group (Lochman & Wells, 2002b). In a 3-year follow-up spanning seven assessment points, the universal intervention no longer had effects, but Coping Power continued to positively affect youths' behavior even 3 years after the intervention had been completed (Lochman, Wells, Qu, & Chen, 2013).

Two randomized controlled trials (RCTs) have examined outcomes of an abbreviated version of the Coping Power Program that can be implemented in one school year (with 24 child sessions and 10 parent sessions). The program has been shown to produce significant reductions at posttest in teacher-rated externalizing behavior for children who had a caregiver attend at least one parent session (Lochman, Boxmeyer, Powell, Roth, & Windle, 2006) in comparison to randomly assigned control children. Three years after the end of the intervention, Coping Power, in comparison to the control condition, had more generalized long-term effects on reducing children's externalizing behavior problems regardless of degree of parental attendance (Lochman et al., 2014). In addition, the intervention had significant effects on youths' impulsivity traits and callous–unemotional (CU) traits. Evidence of intervention effects on CU traits was an especially important finding, since youth with CU traits had been assumed to be less affected by psychological interventions like Coping Power. An independent investigative team found that the 24-session Coping Power Child Component alone produced significant teacher-rated behavioral improvements in learning and study skills, and reduced school problems, as well as behavioral symptoms and social withdrawal when compared to the control condition (Peterson, Hamilton, & Russell, 2009).

Studies with Clinical Samples

The Coping Power Program has also been used in other settings, such as after-school programs (Cowell, Horstmann, Linebarger, & Meaker, 2008). It also has been adapted for use in juvenile correctional settings for girls (Goldstein et al., 2013) and as part of a universal preventive intervention to reduce relational aggression in classrooms (Leff et al., 2010). To extend the program for use with more seriously disturbed populations, Coping Power has also been adapted for use with *clinical* populations in international settings. Trials have been conducted with youth diagnosed with disruptive behavior disorders in the Netherlands, Puerto Rico, and Italy, with positive effects emerging on aggression (van de Wiel et al., 2007), disruptive behavior (Cabiya et al., 2008; Muratori, Milone, Manfredi, et al., 2015), substance use (Zonnevylle-Bender, Matthys, van de Wiel, & Lochman, 2007), and internalizing symptoms (Cabiya et al., 2008; Muratori, Milone, et al., 2015).

Studies Using Coping Power Universal Prevention in Classrooms

Although Coping Power was developed as an intervention for behaviorally at-risk youth in targeted prevention and for clinical samples of disruptive behavior disorder clients, Pietro Muratori and his colleagues have adapted the Italian version of the program as a universal prevention intervention to be delivered in elementary and preschool classrooms in the early elementary school years. Outcome effects include reductions in behavioral problems and increases in prosocial behaviors (Muratori, Bertacchi, et al., 2015; Muratori et al., 2016).

Predictors of Parent Engagement and of Children's Behavior Change

A set of recent studies has examined how child and parent characteristics and the nature of the intervention format have affected outcome from the Coping Power Program. These studies do not use control groups but instead examine issues related to the process of intervention. Weak parent attendance at sessions has been identified as a chronic concern for interventions with parents of externalizing problem children. In two different types of person-oriented analyses, lower levels of parent attendance and engagement in the Coping Power parent component have been found on the one hand for parents who possess lower levels of social support and who experience more stressful life events (and whose lives may be too chaotic to engage in intervention; Minney, Lochman, & Guadagno, 2015), and on the other for parents who have more positive parenting and less inconsistent discipline (and perhaps less need for intervention; Andrade, Browne & Naber, 2015). To begin to address this concern about limited parent attendance, Ellis, Lindsey, Barker, Boxmeyer, and Lochman (2013) have found in cross-lagged analyses that children who engage better in the child component of Coping Power in the early sessions of intervention have parents who begin to attend significantly more parent sessions by the middle of the intervention, indicating how children's intervention engagement can drive parents' intervention engagement.

Children's degree of behavioral improvement following Coping Power can be predicted by certain characteristics of the children and their parents, and by the intervention format. Jarrett, Siddiqui, Lochman, and Qu (2014) found that children who had higher levels of baseline depression had greater reductions in parent- and teacher-rated externalizing problems at postintervention. Muratori, Milone, and colleagues (2015) found that parents who had lower levels of depression at baseline and who had become more consistent in their discipline practices during treatment had children with greater decreases in aggressive behaviors.

Some research has suggested that group interventions with antisocial youth may have iatrogenic effects. Because Coping Power has been typically delivered in small groups, we have engaged in a large-scale study to investigate how children fare if they receive Coping Power in a group format or in an individually delivered format (Lochman, Dishion, et al., 2015). Growth curve analyses indicated that both intervention delivery methods led to similar significant reductions in parent-rated externalizing problems through a 1-year follow-up period. However, although teacher-rated externalizing problems also declined significantly for both intervention conditions, the reductions were significantly greater for children receiving Coping Power in an individual format. This main effect was moderated by children's baseline levels of inhibitory control. Aggressive children who had relatively fewer problems with inhibitory control responded in similar positive ways to either the group format or the individual format. However, children with the poorest levels of baseline inhibitory control profited much more from being seen one-to-one. These results suggest that careful assessment of children is necessary for group intervention with aggressive children, and that providing Coping Power with more individualized attention for children with poor inhibitory controls is likely necessary.

Issues Involved in Adapting Coping Power for Use in Different Cultures

In recent years, there have been efforts to develop general guidelines for adapting manualized interventions such as Coping Power for populations in different settings (Goldstein, Kemp, Leff, & Lochman, 2012). This stepwise process typically involves trying out an evidence-based intervention with focus groups representing the new population to be served, followed by initial piloting of the program. These initial efforts are then followed by controlled trials of revisions of the program that still retain the original objectives of the program but involve planful changes to the content and structure of the program to address a new social context. In international adaptations, there may be some initial concerns because key constructs in the program are not easily translated into a new language (e.g., the term "coping" does not have a simple, single-word translation in languages such as Urdu and Italian; thus, the concept needs more extensive description), but these translation issues tend to be the easiest adaptations to address.

More challenging are issues related to making changes in program content, while still maintaining the program's core objectives. Three examples of adaptations that have been made in international adaptations follow. With regard to role plays during sessions, Jose Cabiya followed Dana's guidelines (1998) for cultural adaptations in making adaptations of Coping Power for use with Spanish populations in Puerto Rico by expanding the nature of role-play scenarios and making the role plays cover commonly experienced situations in Puerto Rican children's peer and family lives (Cabiya et al., 2008). Because of wide differences in cultural assumptions when adapting Western-based programs to other cultures, Asia Mushtaq found it necessary to relate some of the key concepts in Coping Power to the context of the children and families when she conducted an intervention study in Pakistan (Mushtaq, Lochman Tariq, & Sabih, 2016). Using the heuristic adaptation model from Barrera and Castro (2006), Mushtaq made several surface (translating the program into the Urdu language) and deep structural changes to the program, including the addition of information about how Islamic teachings and practices could help children and parents identify obscure feelings and understand problem-solving concepts. In some cases, adaptations have required changes to some of the typical forms used in the program. Pietro Muratori and his colleagues in Italy (Muratori, Milone, Nocentini, et al., 2015) found that the implementation of daily behavioral goal sheets was better received by teachers and staff if children could receive a half-point for partial goal attainment. This adaptation was based on a belief that it was acceptable in Italian culture to meet expected norms partially, and therefore permitted teachers and staff to be more flexible in evaluating children's daily behaviors.

Dissemination Study of the Coping Power Program

Through school dissemination research, factors impacting outcome effects have been identified. For example, more intensive training procedures for group leaders (i.e., immediate supervisory feedback based on recorded sessions) have been shown to result in greater reductions in children's externalizing behavior (based on teacher, parent, and child ratings), improvements in social and academic behaviors, and more stable grades over time (Lochman, Boxmeyer, et al., 2009).

School-level factors and leaders' traits have also been associated with quality of program implementation, with agreeable and conscientious leaders demonstrating the best program implementation. In contrast, leaders' cynicism and low levels of staff autonomy and high levels of managerial control have been associated with poor implementation and low child and parent engagement levels (Lochman, Powell, et al., 2009). Leaders' likelihood of continuing to use the program over time can be predicted by their conscientiousness, the actual teacher-rated behavior change shown by their Coping Power students, their expectations for using the program in the future, and their perceptions of teacher support for the program.

FUTURE DIRECTIONS

A number of new research directions are currently being explored. One strand of research is focusing on incorporating technology into Coping Power Program delivery. A randomized trial with 96 child–parent dyads is testing a hybrid Web and in-person delivery format for Coping Power. This more efficient format allows the full content to be delivered in a smaller number of in-person sessions. Another strand of research is to test developmental adaptations of Coping Power. Large-scale RCTs are currently examining developmental adaptations of Coping Power for both preschool-age children (Boxmeyer, Gilpin, et al., 2015) and early adolescents. Given the challenge of engaging parents in parenting interventions, another strand of research is focusing on innovative strategies for enhancing parent engagement. The Coping Power Parent Component has been adapted for tailored, modular use, to address only the specific areas of need identified for a family, using the Family Check-Up (FCU; Dishion & Kavanagh, 2005; Herman et al., 2012) intervention.

A final strand of research is testing the effects of integrating contemplative practices (mindfulness, yoga, and compassion-building practices) with the cognitive-behavioral practices in traditional Coping Power, to examine whether this integration further enhances program effects on child and parent emotional reactivity. The new Mindful Coping Power Program is being compared to the traditional Coping Power Program in a randomized trial with 96 child–parent dyads (Boxmeyer, Miller, Lochman, & Powell, 2015). Going forward, it is important to continue to identify program characteristics, as well as dissemination, training, and organizational characteristics, that promote effective and sustained use of the Anger Coping and Coping Power Programs.

CONCLUDING COMMENTS

The Anger Coping and Coping Power Programs provide a theoretically and empirically based framework for preventing and treating children's aggressive behavior. Next steps for development and research include a focus on identification of the intervention characteristics and mediating factors that are most strongly associated with long-term behavioral improvements and on methods for addressing children's broader contextual risk factors and identifying the processes that lead to successful program implementation and dissemination.

A key challenge in disseminating interventions such as the Anger Coping and Coping Power Programs to naturalistic settings is ensuring that the core features are implemented with fidelity, while providing sufficient flexibility to maximize the use of clinical expertise and to address diverse setting, provider, and client characteristics. The next generation of research should examine methods for training practitioners to utilize the Anger Coping and Coping Power Program intervention manuals as a framework for targeting the mediating factors underlying children's aggressive behavior, including child social-cognitive difficulties and parenting behaviors. Provision of ongoing training and consultation during program implementation appears to be critical to this process (Lochman, Boxmeyer, et al., 2009).

Although group-based interventions can provide valuable opportunities for *in vivo* practice of emotional coping and social problem-solving skills, and for peer modeling and reinforcement of prosocial strategies, they also carry the risk of peer reinforcement of deviant attitudes and behaviors (Dodge, Dishion, & Lansford, 2006). Research on the Anger Coping and Coping Power group interventions has not shown iatrogenic effects. However, deviant peer effects in the groups may have limited the degree of behavioral gains for some children. Thus, an important next line of research is to identify the structural intervention components and leader behaviors that help generate and maintain a positive group process. Key group leadership behaviors may include the ability to monitor disruptive and deviant behaviors in a group; to restructure and refocus a group to other tasks to divert the members from reinforcing deviant behaviors; and to provide clear, consistent consequences within the group (e.g., loss of group rules points). In current ongoing research, we are working to identify leadership behaviors associated with effective outcomes. Moving forward, emphasis will be placed on examining implementation, dissemination, and training processes with scientific rigor.

ACKNOWLEDGMENTS

The intervention research on the Anger Coping and Coping Power Programs has been supported by grants from the National Institute on Drug Abuse (Nos. R34DA045295, R34DA035946, R01DA023156, R41DA022184-01, R41DA022184-01S1, R01DA016135, R01DA008453), the National Institute of Child Health and Human Development (No. R01HD079273), the Institute of Education Sciences (No. R305A140070), the Center for Substance Abuse Prevention (Nos. KDISP08633, UR65907956), the Centers for Disease Control and Prevention (No. R49/CCR418569), the Department of Justice (Nos. 2006JLFX0232, 2000CKWX0091), and the National Institute of Mental Health (No. R01MH039989).

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CHAPTER 11

Treatment Foster Care Oregon for Adolescents

Research and Implementation

Rohanna Buchanan, Patricia Chamberlain, and Dana K. Smith

OVERVIEW OF THE CLINICAL PROBLEM

In this chapter, we describe a community-based model for treating youth with severe and chronic delinquency, emotional, and conduct problems; highlight the outcomes from three randomized clinical trials with adolescents referred from the juvenile justice system, child welfare, and mental health systems; and review implementation strategies for scaling up the intervention. Patricia Chamberlain (2003) developed Treatment Foster Care Oregon (TFCO) in 1983 in response to a State of Oregon request for proposals for community-based alternatives to incarceration and placement in residential/group care settings. TFCO was formerly branded as Multidimensional Treatment Foster Care (MTFC). The TFCO model is based on more than 40 years of longitudinal research on the development of antisocial behavior. TFCO is part of the suite of interventions for children, adolescents, and families developed at the Oregon Social Learning Center (Patterson, Reid, Jones, & Conger, 1975) including the Family Check-Up (Dishion & Stormshak, 2007), Parent Management Training—Oregon (PMTO: Forgatch & Patterson, 2010) and Kids in Transition to School (KITS; Pears, Kim, & Fisher, 2012). Although TFCO originally was designed as an alternative to group home placement or commitment to state training facilities for severely delinquent boys, it has since been adapted to treat girls with chronic delinquency because of severe emotional and mental health problems, who have been referred from juvenile justice, mental health, and child welfare systems (Chamberlain, Leve, & DeGarmo, 2007; Leve, Chamberlain, & Kim, 2015; Leve, Chamberlain, & Reid, 2005). Juvenile justice, mental health, and child welfare systems refer youth with severe emotional and behavioral problems to TFCO. Youth appropriate for the model have a high level of need for treatment services in an out-of-home placement, and TFCO is an evidence-based alternative to congregate care. Many youth referred to TFCO have a history of failing prior treatment programs and often have comorbid diagnoses.

CONCEPTUAL MODEL GUIDING THE TREATMENT PROGRAM

Social learning theory forms the underpinnings of the TFCO model. From a social learning theory perspective, conduct problem behavior can be characterized as a process of inadvertently reinforced negative behavior that grows in severity and complexity over time. The coercive processes that sustain these negative behaviors are often reciprocal and transactional: Parent–child interactions influence parenting practices, which are simultaneously influenced by environmental and contextual factors. For example, a child's temperamental difficulties at various stages of development might elicit frustrated and helpless responses from the parent, which can contribute to ineffective or inadequate feelings from the parent. Feelings of parental ineptitude and frustration have been shown to be related to aversive responses and withdrawal in response to child noncompliance, which can then elicit further challenging behaviors from the child. Contextual influences such as parental stress might further reinforce coercive family processes to the extent that such stress increases marital conflict or disrupts consistent and thoughtful parenting practices. Once coercive processes are in place, they tend to be maintained with very little reinforcement. The good news, however, is that coercive processes can be interrupted at any point in the developmental process—regardless of severity or duration—by improving parenting practices. Parenting plays a central role in the development, maintenance, and treatment of antisocial behavior. The results from research on the TFCO model have helped to identify specific parenting practices that serve as key variables in the development and treatment of antisocial behavior and delinquency.

According to social learning theory, new behaviors are most effectively taught and generalized in naturally occurring settings (e.g., family, school, peer group). The TFCO model, designed with this in mind, keeps youth in the community and uses the foster family setting to teach, practice, and reinforce adaptive youth responses to everyday compliance demands. The TFCO model capitalizes on the powerful social role that parents play in the lives of their children and in the family as a change agent. Using a community-based family environment to teach and reinforce desired behaviors provides a closer approximation to the real-world experiences that youth encounter and therefore a greater chance for successful generalization of desired behaviors.

CHARACTERISTICS OF THE TREATMENT PROGRAM

TFCO Basics

There are two primary goals of TFCO: (1) to create opportunities for youth to learn and practice new skills to live successfully in their communities and (2) to prepare the youths' biological parents or other aftercare resources (referred to throughout this chapter as "biological parents") to provide effective parenting that will interrupt coercive family processes and increase the chance for positive reintegration into the family following treatment. The TFCO team works simultaneously with youth, biological parents, and trained TFCO foster parents using a series of well-coordinated, multicomponent, multilevel interventions that occur in family, school, and community settings. TFCO places youth, one per TFCO home, for 6 to 9 months and provides them with intensive interventions that span seamlessly across multiple settings via a comprehensive individualized behavior management program and consistent case management. Youth receive close supervision and frequent reinforcement for learning and practicing adaptive interpersonal skills. The team provides each youth with weekly individual therapy and skills training, academic support, and psychiatric consultation as needed. Biological parents receive weekly family therapy that is based on the parent management training treatment model. Family therapy focuses on implementing effective parenting strategies and techniques, such as creating a safe and stable home environment, monitoring the adolescent's whereabouts and peer associations, reinforcing positive and normative behavior and activities, and setting limits.

The TFCO Treatment Team and Treatment Tools

The TFCO model includes a core team of clinicians and staff. The treatment team comprises a team leader, who is responsible for leading the TFCO treatment team, the TFCO family, a family therapist for the biological parents, an individual therapist for the youth, a skills coach for the youth, and an on-site consulting psychiatrist. A TFCO recruiter/trainer/parent daily report (PDR) caller works with the team leader to recruit and train new TFCO parents and collects daily behavioral data for each youth via the PDR (Chamberlain et al., 2006). Figure 11.1 shows the flow of treatment from referral through the return home.

The PDR is a brief standardized assessment collected daily by a trained caller. The PDR call is a brief (5–10 minutes per youth) telephone interview that consists of a series of questions assessing the occurrence or nonoccurrence of a youth's problem behavior in the home (*yes* or *no*) and the degree of stress experienced by the TFCO parent with each behavior (1 = *low stress* or 2 = *high stress*). The team leader reviews the PDR data daily to identify youths' problem behaviors, which will be targeted in weekly interventions, and to monitor youths' progress over time.

TFCO Foster Parents

The TFCO foster parents receive 20 hours of preservice training from the foster parent recruiter/trainer/PDR caller and the TFCO staff prior to becoming state-certified foster parents. The TFCO parents are trained according to social learning and behavioral approaches, strongly emphasizing teaching through modeling, role playing, and reinforcement. The TFCO model places parents as the central change agents. They learn to pay close attention to youths' strengths, to reinforce positive and adaptive behaviors at a high rate, to turn daily experiences into teaching opportunities, and to create opportunities for youth to observe and practice prosocial responses to challenging situations.

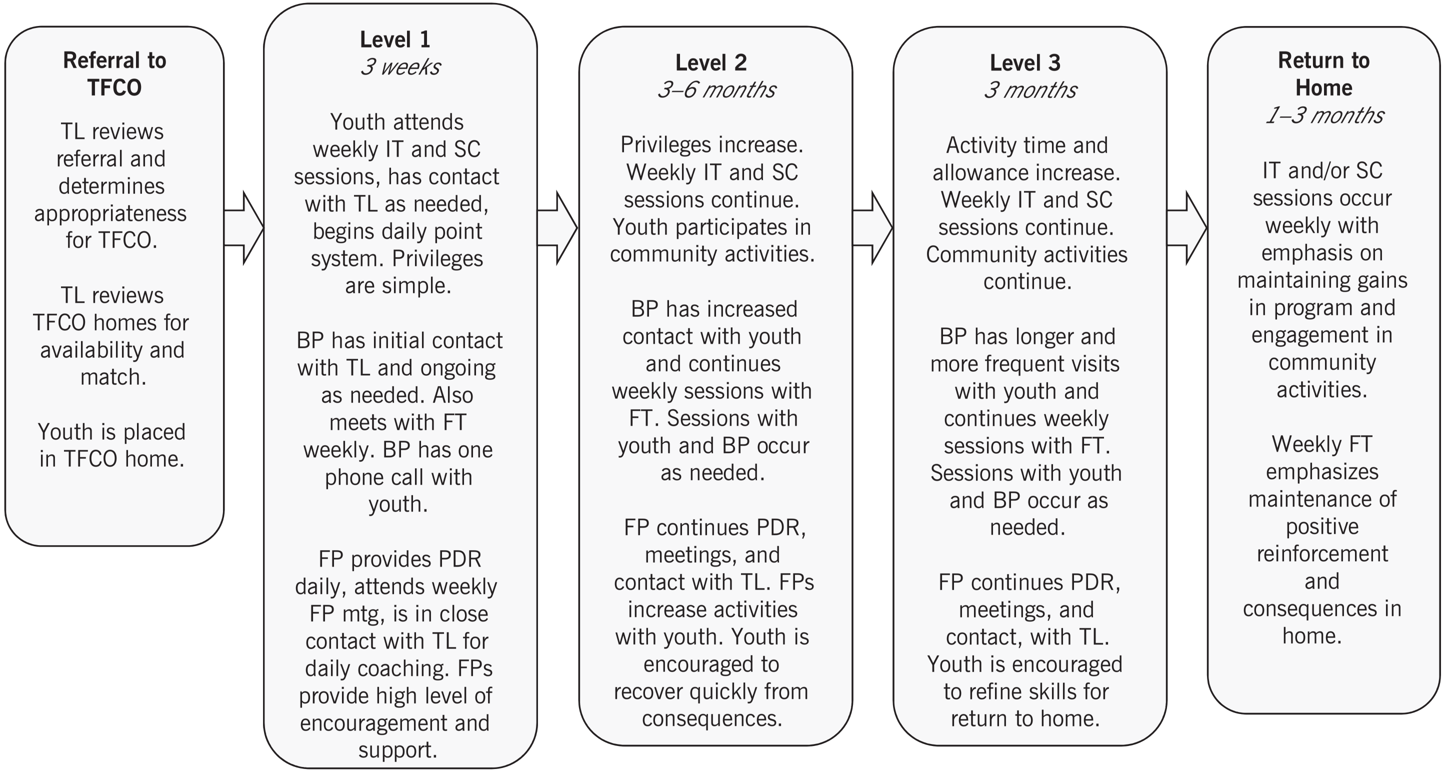

FIGURE 11.1. Flow of treatment from referral through the return home. TL, team leader; FT, family therapist; IT, individual therapist; SC, skills coach; FP, foster parent; BP, biological parent.

The TFCO parents implement a daily behavior management system that focuses on providing positively oriented feedback to youth about their daily behaviors in a nonreactive way. This system consists of three levels that use contingencies to reinforce positive behaviors over the course of treatment. As is seen in Figure 11.2, this system involves typical daily expectations for adolescents. The daily behavior management system includes the opportunity to exchange points for privileges (see Figure 11.3). A team member collects data from the TFCO parents on the youths' emotional and behavioral problems each weekday using the PDR (see Figure 11.4) to identify possible ongoing problems and to monitor TFCO parent stress levels. Using these data, the team leader tracks each youth's progress daily. The behavior management system is constructed so that privilege removal in response to negative behavior occurs for a short duration (1 day), teaching youth to recover quickly from maladaptive behaviors. Stronger consequences from probation/parole officers or social workers are reserved for larger behavior violations (e.g., substance use and skipping school). TFCO parents attend a required weekly foster parent support meeting led by the team leader.

Behavior	Description	Time	Points
Up on time	Out of bed		10
Ready in morning	Showered, teeth brushed, hair combed, dressed in clean clothes, and breakfast eaten		10
Morning clean-up	Bed made, dirty clothes put away, room neat, bath towel and wash cloth put away, and dishes in the sink		10
Go to school	Attend all classes at school each day		5
Carry school card	Carry school card to each class and get signature from each teacher		1/class*
Behavior in class	Positive behavior in class		2/class*
School card bonus	All signatures on card, homework turned in, on time, and good behavior in each class		10
Read and study	50 minutes reading/studying		20
Chore	To be determined		10
Attitude/maturity	Being helpful, taking feedback maturely, being pleasant, accepting no without pushing limits, etc.		15 A.M. 15 P.M.
Volunteering	Volunteering to do extra tasks (foster parent will decide on points)		2–10
Extra chore	Optional (Must be approved by foster parents)		5–10
Bed on time	If you CAN buy basics If you CAN'T buy basics	9:30 P.M.* 8:30 P.M.	10

* To be adjusted as needed by the team leader.

FIGURE 11.2. Behavior management system: TFCO daily expectations.

Privilege	Description
Basics	Use of telephone for 15 minutes daily, music in your room 9:30 P.M. bedtime
TV	TV after homework and/or chore are completed
Later bedtime	10:00 P.M. bedtime 11:00 P.M. bedtime on non-school days and holidays with permission
Activity time	With prior planning, permission, and approval, you may plan to go skating, swimming, to a movie, school activity, etc. If you are late or not where you are supposed to be, you will lose 1 point per minute.
Extra phone time	One 20-minute call (not long distance)
Allowance	$15.00 per week when on level all week $7.50 if on Level 1 once in the week and no allowance if on Level 1 more than once in the week All purchases must have receipts and you must show your money to your foster parents. Money spent at school in pop/candy machines must have team leader approval.
Other	Based on team leader approval

FIGURE 11.3. Behavior management system: Sample TFCO privileges.

Aside from the TFCO training, the model does not require TFCO parents to have any formal education. However, we have identified several commonalities among successful TFCO parents: flexibility and interest in working closely with the treatment team, a general interest in and compassion for teaching and guiding youth as they grow and change, and a sense of humor. Each of these characteristics is helpful in implementing the TFCO model, providing support for fellow TFCO parents, and working with the often unpredictable nature of adolescents.

TFCO does not expect or encourage the foster parents to provide therapy or support for the biological parents; rather, this is the role of the family therapist. This avoids potential strained relationships between the two families and allows both the foster and the biological parents to focus directly and specifically on working with the youth, without giving the youth an opportunity to "play" the adults off each other.

Team Leaders

The team leaders have small caseloads (10 families each), so that they can provide intensive case management for each family. They are responsible for coordinating all aspects of each youth's treatment plan, which include clinical decision making, supervising the TFCO parents and the treatment team, and ensuring that all interventions are well thought-out and seamless across settings (i.e., the interventions do not conflict with each other). The team leader is the liaison between all of the youths' environments and is responsible for providing clear communication and consultation with biological family members, school personnel, and community service providers. The daily school cards facilitate consistent communication

Youth: ______________________________ PDR Caller: ______________________________

Foster Parent: ______________________________ Phone: ______________________________

Week of: ______________________________

Behaviors	Sun	Mon	Tues	Wed	Thurs	Fri	Sat
1. Animal cruelty							
2. Arguing							
3. Backtalking							
4. Bedwetting							
5. Competitiveness							
6. Complaining							
7. Daydreaming							
8. Defiance							
9. Depression/sadness							
10. Destructiveness							
11. Drug and alcohol use							
12. Encopresis							
13. Fearfulness							
14. Fighting							
15. Interrupting							
16. Irresponsibility							
17. Irritability							
18. Jealousy							
19. Lying							
20. Mean talk							
21. Nervous/jittery							
22. Not minding							
23. Pant wetting							
24. Pouting							
25. Runaway							
26. School problems							
27. Sexual behavior							
28. Short attention span							
29. Skipping meals							
30. Sleep problems							
31. Sluggishness							
32. Staying out							
33. Stealing							
34. Swearing							
35. Teasing							
36. Truancy							
37. Worried							

Scoring: 0 = behavior did not occur, 1 = behavior occurred, 2 = behavior occurred and was stressful

FIGURE 11.4. Parent Daily Report (ages 12–17).

between the school and the team leader. The team leader is responsible for maintaining daily contact with the TFCO parents to provide ongoing consultation, support, and 24-hour crisis intervention. The team leader provides ongoing training and support to the TFCO parents via the weekly foster parent meeting and is the "go-to" person on the team for decision making for the biological parents. The team leader also conducts weekly phone or in-person meetings with probation/parole officers to discuss each youth's progress.

Due to the complexities involved in designing multisetting interventions, balancing the unique needs of each case, and the staff supervision responsibilities, the team leaders are the most skilled clinical member of the TFCO team. Each must hold a master's degree in psychology or a related field and receive weekly supervision by the TFCO program manager or champion.

Family Therapists

The ultimate goal of TFCO is to successfully reunite youth with their biological parents. As such, family therapy is a central focus of the TFCO model and begins immediately upon a youth's placement in the program. The family therapists meet weekly with the biological parents to provide parent training and to problem-solve difficulties with parent management. During weekly sessions, family therapists teach and support biological parents' use of the TFCO behavior management system during each contact with the youth. Through the use of this system, therapists teach and support biological parents' implementation of a series of core parent management strategies that include encouragement systems, supervision and monitoring techniques, contingency management strategies, and strategies for setting clear limits, while avoiding power struggles with their child. After a period of time, the family therapy sessions begin to include the youth. The initial joint family therapy sessions include the youth for 10–15 minutes to focus on the introduction of a new parenting skill that has been practiced during the previous family therapy sessions—for example, the presentation of a clearly defined set of house rules to be implemented during home visits (developed with the family therapist during the previous family therapy sessions). An individual therapist (described below) often attends the joint therapy sessions to support and coach the youth on the expected behaviors. Family therapists review contact that the family has with the youth (e.g., phone calls and visits). As youth progress in the program, home visits grow in length, providing the biological parents greater opportunities to succeed in using these new parenting skills. The visits typically begin as short day visits (4 hours) and progress to weekly overnights by the end of the program. The family therapists continue meeting with biological parents for a period of time following reunification to increase the likelihood of a successful transition to the home setting. They attend the weekly TFCO clinical meetings and are supervised by the team leader. Each typically holds a master's degree.

Individual Therapists

Each individual therapist serves as the primary support for the TFCO youth, is introduced as an "ally" at the start of the placement, and meets weekly with the youth throughout the course of treatment. The focus of the weekly individual therapy sessions is to assist the youth in adjusting to the demands of TFCO: prosocial skills reinforcement, social skills development, problem solving, emotion management, and developing educational or occupational plans. The work of the individual therapist is carefully integrated into the overall treatment plan, so that behavioral targets are well thought-out and reinforcement occurs across settings. For example, youth with conduct problems often have difficulty receiving direction from parents or other authority figures and the individual therapist might role-play and practice following directions without comment. The youth are able to contact individual therapists by phone for support as needed between weekly sessions. It is also common for the team leaders to orchestrate support from an individual therapist (e.g., after learning of a difficult or challenging situation for the youth in the foster home). TFCO trains individual therapists to focus on problem-solving and role-playing adaptive responses rather than on processing feelings to avoid inadvertently reinforcing maladaptive youth behaviors such as arguing. The individual therapist continues meeting with the youth for a period of time following reunification to increase the likelihood of a successful transition to the home setting. They attend the weekly TFCO clinical meetings and are supervised by the team leader. Each typically holds a master's degree.

Skills Coaches

The skills coaches also serve as supports for TFCO youth. The skills coaching sessions occur weekly and focus on skills development in community settings via modeling, teaching, practicing, and reinforcing prosocial and adaptive behaviors during one-on-one sessions in common community environments (e.g., restaurant, library, community center, school). In the skills coaching sessions, the skills coaches' style is supportive, friendly, and encouraging, in order to provide a more relaxed teaching atmosphere. The skills coaching sessions differ from individual therapy sessions in that they tend to focus on the development and reinforcement of social skills that are common to typically developing adolescents rather than on behavioral targets that are central to the youths' diagnoses. The skills coaching sessions are also commonly used to support and reinforce skills that have been practiced during individual therapy sessions. The skills coaches continue to meet with youth for a period following reunification to offer support and skills building during the transition home. They attend the weekly TFCO clinical meetings and are supervised by the team leaders. They typically hold bachelor's-level degrees or are undergraduate students.

TFCO Recruiter/Trainer/PDR Caller

The TFCO recruiter/trainer/PDR callers recruit and provide initial preservice training to the TFCO parents. They also conduct the daily PDR interviews with the TFCO parents. The TFCO recruiter/trainer/PDR callers attend the weekly foster parent support meetings, provide backup to the team leaders, and are supervised by the TFCO team leaders. The TFCO recruiter/trainer/PDR callers can be paraprofessionals who know the TFCO model well (e.g., a former TFCO parent who has firsthand experience implementing the TFCO model) or a bachelor's-level degree in a related field.

Consulting Psychiatrist

A consulting psychiatrist conducts psychiatric evaluations of the youth, prescribes medications as needed, and coordinates medication management. TFCO youth often have multiple diagnoses and are taking multiple medications at the time of placement; the consulting psychiatrist provides initial evaluations and ongoing management of medications. The consulting psychiatrist is experienced in treating youth with comorbid conditions and is cognizant of the basic TFCO treatment model. To facilitate communication and coordination, it is ideal for the consulting psychiatrist and the team leader to have regular contact.

Role Differentiation

The TFCO design requires careful adherence to the specific roles of the treatment team for two primary reasons. First, the youth and families are less likely to become confused and/or overwhelmed when interfacing with numerous treatment team members if communications are well coordinated. Families referred to TFCO often have complex treatment needs that require a clear and orderly approach. Receiving treatment information from multiple sources complicates and diffuses the treatment. Therefore, the team leader and the family therapist are the only treatment team members who interact with the youth's family in a therapeutic manner. Although other treatment team members (e.g., individual therapist, skills coaches, TFCO parents) interact with families in a positive, friendly, and encouraging manner as they come and go from meetings, visits, and therapy sessions, these interactions do not incorporate any behavioral or therapeutic interventions. Second, youth with severe behavioral and emotional problems often have complex reactions to challenging situations, and adverse reactions are more likely to occur when circumstances are unpredictable. Responding to the youth and families in an orderly and predictable manner can help to avoid problems and to ease treatment implementation. For example, as the clearly identified head of the TFCO program, the team leader outlines the expectations for each youth and sets clear limits throughout the course of treatment. The individual therapist interacts with the youth as an "ally." It is essential that each team leader maintain a limit-setting role with the youth and that each individual therapist maintain a supportive role with the youth. Similarly, an extra degree of freedom is often helpful to the TFCO parents. Allowing each team leader to be the primary limit-setter provides TFCO parents the ability to play a supportive and encouraging role with the youth in their home.

EVIDENCE ON THE EFFECTS OF TREATMENT

The results from several outcome evaluations have demonstrated the effectiveness of TFCO. The results from three randomized controlled trials have shown that

TFCO is effective in decreasing delinquency in adolescent boys (Chamberlain & Reid, 1998; Eddy, Bridges Whaley, & Chamberlain, 2004) and girls (Chamberlain et al., 2007; Leve et al., 2005) compared to group care (GC). Recent findings indicate that TFCO is also effective in decreasing substance use (Rhoades, Leve, Harold, Kim, & Chamberlain, 2014) and improving psychological outcomes such as depression (Harold et al., 2013). Girls in TFCO have fewer early pregnancies than girls in the GC condition (Kerr, Leve, & Chamberlain, 2009). A randomized clinical trial with youth from the state mental hospital demonstrated the effectiveness of TFCO in treating children and adolescents with severe mental health problems (Chamberlain & Reid, 1991). The results reported below focus on TFCO outcomes for youth who were referred to out-of-home care from the juvenile justice system.

TFCO Effects on Juvenile Justice Boys' Outcomes

We first examined the TFCO model's impact on the treatment of adolescent boys with chronic problems with delinquency. This work yielded positive results across several emotional and behavioral domains. In a clinical trial of 79 boys (ages 12–18) referred to out-of-home care due to chronic delinquency, boys were randomized to TFCO or to GC (the treatment-as-usual condition). We examined outcomes at 12 and 24 months postbaseline using a multimethod, multi-informant assessment strategy (youth, parent, probation/parole, teacher/school, and official records).

Delinquency

The results showed the TFCO model to be effective at reducing arrest rates, with boys in TFCO showing larger decreases in official criminal referrals compared to boys in GC (Chamberlain & Reid, 1998). These findings concurred with the TFCO boys' self-reports of delinquent behavior using the Elliott Behavior Checklist, including the General Delinquency, Index Offenses, and Felony Assaults subscales, which were all significantly lower compared to those of the boys in GC (Elliott, Huizinga, & Ageton, 1985). The TFCO boys spent significantly more time in their intended placements, less time incarcerated, and less time running away. We have also found the TFCO boys to be significantly less likely to commit violent offenses compared to youth treated with more traditional intervention models, even when preplacement risk factors were considered (e.g., age at first arrest and age at placement) (Eddy et al., 2004).

Mediation of Treatment Outcomes

To better understand the key factors that accounted for the differences in outcomes, we examined whether the hypothesized treatment components (e.g., specific family management skills and separation from deviant peer associations) mediated the relative impact of TFCO. We examined the effect of group assignment on subsequent criminal referrals (i.e., from the time of placement until 1 year posttreatment) using path models and showed that family management skills (i.e., supervision, discipline, and positive adult–youth relationship) and deviant peer association fully mediated the effects in the treatment condition and accounted for 32% of the variance in subsequent antisocial behavior (Eddy & Chamberlain, 2000). Specifically, when family management skills increased and involvement with deviant peers decreased, youth engaged in less antisocial behavior.

Drug Use

TFCO demonstrated an impact on self-reported rates of drug use for TFCO boys (compared to GC boys) (Smith, Chamberlain, & Eddy, 2010). Although TFCO did not include a specific focus on drug treatment in this study, TFCO boys reported significantly lower rates of marijuana, tobacco, and other drug use following treatment. The decreased rates of drug use for TFCO boys might be due to the emphasis on increasing parents' family management skills and youths' separation from delinquent peers while placed in TFCO.

TFCO Effects on Juvenile Justice Girls' Outcomes

The TFCO model has also shown positive results when applied to the treatment of adolescent girls with serious delinquency problems. The intervention effects across a number of emotional and behavioral domains are outlined below. In two consecutive randomized trials of 81 and 85 girls (ages 13–17) referred to out-of-home care due to chronic delinquency, we initially examined outcomes at 12- and 24-months postbaseline using a multimethod, multi-informant assessment strategy, just as with the earlier boys study (Chamberlain et al., 2007; Kerr et al., 2009; Leve & Chamberlain, 2005; Leve et al., 2005). We assessed the participants again 9 years later, when they were in early adulthood, to evaluate longer-term outcomes (Harold et al., 2013; Kerr, DeGarmo, Leve, & Chamberlain, 2014; Rhoades et al., 2014).

Delinquency

TFCO demonstrated efficacy above and beyond that of GC in reducing girls' delinquency at both follow-up assessments (Chamberlain et al., 2007; Leve et al., 2005). At 12-months postbaseline, the TFCO girls had spent fewer days in locked settings. In addition, there was a trend for the TFCO girls (compared to the GC girls) to have had significantly fewer criminal referrals, and they had significantly lower ratings on caregiver-reported delinquency on the Child Behavior Checklist by the 12-month assessment. The 12-month findings persisted at 24-months postbaseline, when we confirmed that the TFCO girls showed a significantly greater reduction in delinquent behavior over time compared to the GC girls. These findings also suggest the potential for the TFCO intervention to impact costly public service utilization outcomes. For example, the TFCO girls (compared to the GC girls) had spent over 100 fewer days in locked settings at the 24-month follow-up assessment.

Deviant Peer Associations

Based on prior work demonstrating a strong, positive relationship between deviant peer associations and the development and maintenance of adolescent delinquency, reducing deviant peer associations is one of the key aims of the TFCO intervention. Using multimethod constructs (i.e., self- and caregiver reports), we examined whether TFCO reduced rates of deviant peer associations for girls during the course of treatment, and whether this reduction mediated the effect of the intervention on deviant peer associations. As hypothesized, we found TFCO to be more effective than GC in reducing delinquent peer associations during treatment, and this reduction fully mediated the intervention effect on 12-month delinquent peer association (Leve & Chamberlain, 2005).

School Engagement

We also examined the impact of TFCO on increasing girls' prosocial and adaptive behaviors. The results from the school outcome (e.g., attendance and homework completion) analyses indicated that the TFCO girls had significantly higher rates of homework completion during treatment and attended school at a higher rate compared to the GC girls at 12-months postbaseline. We also confirmed that homework completion during the intervention mediated the effects on the girls' time spent in locked settings at 12-months postbaseline. These results suggest that implementing relatively simple daily routines (e.g., homework time) plays a powerful role in changing the negative trajectory of delinquency (Leve & Chamberlain, 2007).

Pregnancy Rates

Reducing rates of health-risking sexual behavior is another key outcome of TFCO. We examined the effects of TFCO on the girls' pregnancy rates at 24-months postbaseline. The results from the logistic regression analyses indicated fewer pregnancies for the TFCO girls (26.9%) compared to the GC girls (45.7%). This effect persisted after we controlled for significant effects of baseline criminal referrals and pregnancy history (Kerr et al., 2009).

Drug Use

TFCO demonstrated a long-term impact on self-reported rates of drug use for TFCO girls (compared to GC girls) over a 2-year period in young adulthood (Rhoades et al., 2014). The decreased rates of drug use for TFCO girls might be due to a combination of factors related to TFCO treatment emphasis on increasing girls' drug use refusal skills, emotion regulation skills, and peer relation skills, as well as increasing parents' monitoring and supervision skills and positive involvement. In addition, we found that participation in TFCO reduced the influence of partner drug use on TFCO girls' drug use compared to GC girls. Prior studies have shown that romantic partners exert strong influences on girls' risky behavior, including drug use (e.g., Mezzich et al., 1997). The findings that TFCO has the potential to decrease girls' drug use and increase their resilience to the influence of their partners' drug use are notable given that these findings sustained 7–9 years after girls participated in TFCO.

Psychological Outcomes

TFCO is intended to reduce delinquency and create opportunities for youth to live successfully in their communities, but not to treat youth depression and suicidality. We recruited girls for the studies based on chronic delinquency, and baseline depression symptoms were not a factor in determining study eligibility. However, findings have shown that, in addition to reducing important delinquency outcomes, TFCO girls had reduced depressive symptoms (compared to GC girls) at 24-months post-baseline, with greater benefits for girls evidencing higher levels of initial depressive symptoms (Harold et al., 2013). These beneficial effects persisted into early adulthood when girls were assessed over a 2-year period 7–9 years after enrollment in TFCO (Kerr et al., 2014). In addition to the sustained decreases in depressive symptoms into early adulthood, we found that TFCO girls had decreased rates of suicidal ideation compared to GC girls, though no differences in suicide attempts (Kerr et al., 2014). The impact of TFCO on psychological functioning might be due to decreases in delinquent behavior and associated stressors (e.g., days in locked settings, pregnancy) as a result of participation in TFCO. Conversely, it is possible that the TFCO treatment emphasis on the improving girls' emotion regulation and peer relation skills, and increasing parents' positive involvement, might be the mechanism by which girls' depressive symptoms were reduced—which in turn might reduce delinquency.

Overall, TFCO has demonstrated efficacy in reducing targeted delinquency outcomes (days in locked settings, criminal referrals, deviant peer affiliation), along with secondary, nontargeted outcomes (pregnancy, school attendance, homework completion, depression, and suicidal ideation) for youth referred from the juvenile justice system. See Table 11.1 for a summary of the main TFCO outcomes. These results suggest that TFCO effectively decreases health-risking sexual behavior and conduct problems, and increases positive and adaptive behaviors. Based on the outcomes of the three randomized controlled trials, TFCO has received national attention as a cost-effective alternative to institutional and residential care. The results from a series of independent cost–benefit analyses from the Washington State Public Policy group (Aos, Phipps, Barnoski, & Leib, 2001) and from three randomized trials led to selection of the TFCO model as one of 10 evidence-based National Model Programs (The Blueprints Programs) by the Office of Juvenile Justice and Delinquency Prevention (2015) and as one of nine National Exemplary Safe, Disciplined, and Drug Free Schools model programs (U.S. Department of Education, 2001). A report of the U.S. Surgeon General (U.S. Department of Health and Human Services, 2000) also highlighted the TFCO model, and the Center for Substance Abuse Prevention and the Office of Juvenile Justice and Delinquency Prevention selected TFCO as an Exemplary I program for the Strengthening America's Families program (Kumpfer, 1999).

SCALE-UP AND IMPLEMENTATION RESEARCH

Scaling up interventions such as TFCO into county-, state-, or country-level contexts is a complex task that requires collaboration with a range of stakeholders, including policymakers, system leaders, managers, practitioners, and consumers. Beginning in 2002, implementers have used three models to scale up TFCO: the rolling cohort

TABLE 11.1. Summary of the Main TFCO Outcomes for Youth Referred from Juvenile Justice

Study	Population	Intervention target	Main findings: TFCO compared to GC
Chamberlain & Reid (1998)	Boys	Delinquency	At 12 months postbaseline, TFCO boys • Had fewer criminal referrals. • Spent fewer days incarcerated and less time running away. • Had lower rates of self-reported delinquent behavior.
Eddy & Chamberlain (2000)	Boys	Delinquency	Supervision, discipline, positive adult–youth relationship, and deviant peer association mediated the effects of TFCO treatment.
Eddy et al. (2004)	Boys	Delinquency	At 24-months postbaseline, TFCO boys • Were less likely to commit violent offenses.
Leve & Chamberlain (2005)	Girls and boys	Deviant peer associations	At 12-months postbaseline, TFCO girls • Had fewer associations with delinquent peers. • Associating with delinquent peers mediated the effects of TFCO treatment.
Leve et al. (2005)	Girls	Delinquency	At 12-months postbaseline, TFCO girls • Had fewer criminal referrals. • Spent fewer days in locked settings. • Had lower ratings of caregiver-reported delinquency.
Chamberlain et al. (2007)	Girls	Delinquency	At 24-months postbaseline, TFCO girls • Had lower ratings of self-reported delinquency. • Had fewer criminal referrals. • Spent fewer days in locked settings.
Leve & Chamberlain (2007)	Girls	School engagement	At 12-months postbaseline, TFCO girls • Had higher rates of homework completion. • Attended school at a higher rate. • Homework completion mediated the effects of TFCO treatment.
Kerr et al. (2009)	Girls	Pregnancy rates	At 24-months postbaseline, TFCO girls • Had fewer pregnancies.
Smith et al. (2010)	Boys	Drug use	At 12-months postbaseline, TFCO boys • Had lower levels of self-reported drug use. • At 18 months postbaseline, TFCO boys • Had lower levels of self-reported tobacco, marijuana, and other drug use.
Harold et al. (2013)	Girls	Psychological outcomes	At 24-months postbaseline, TFCO girls • Had reduced depressive symptoms.
Kerr et al. (2014)	Girls	Psychological outcomes	In early adulthood, TFCO girls • Maintained initial reduced depressive symptoms. • Had reduced rates of suicidal ideation.
Rhoades et al. (2014)	Girls	Drug use	In early adulthood, TFCO girls • Had a decreased rate of drug use. • Had increased resilience to the influence of partners' drug use.

model, independent county implementation, and community development teams (Brown et al., 2014; Chamberlain et al., 2012).

Implementation Models

The Rolling Cohort Model

"Looked after" (the English term for placed) teens in England have significantly poorer outcomes than teens at home, including increased psychiatric disorders (Meltzer, Gatward, Goodman, & Ford, 2000), more days absent from school (Morgan, 1999), and less stability in home placements (Koprowska & Stein, 2000). These concerns led to policy changes that focused on the needs of children and adolescents in care. Because TFCO was identified as a cost-effective, evidence-based practice to increase positive outcomes for adolescents, policymakers allocated funds for local authorities and agencies (e.g., health, education, and youth justice partnerships) to bid for 4-year grants to cover the cost of implementation start-up. In the rolling cohort model (Chamberlain et al., 2012), the government set up a National Implementation Team in 2003 to help build program capacity and sustainability, to act as a bridge between researchers and practitioners, and to provide support and training to local authorities and agencies. In Year 1, six sites were awarded grants and attended training, and of the six, five began TFCO implementation. In Year 2, four additional sites received funding, six received funding in Year 3, and four in Year 4 (though one withdrew). Funding multiple sites each year allowed for group training, and the National Implementation Team facilitated the exchange of information and networking across the country between current and new sites. The rolling cohort model successfully established TFCO in England: 18 out of 20 sites that were awarded grants implemented TFCO, and the English government has developed a detailed, cost-saving financial model with recommendations for the minimum number of occupied foster placements per site.

Independent County/Site Implementation

Independent county implementation is the standard implementation model in which entities (counties, agencies) independently work with TFC Consultants, Inc. (the purveyor company) to implement TFCO in their communities. This is the most common or traditional method of implementing TFCO and other evidence-based models. On average, TFCO requires an intensive initial 18 months of training and consultation, followed by an application process to certify a site as having met fidelity and outcomes criteria similar to those achieved in the randomized controlled trials. As can be seen on the TFCO website (*www.tfcoregon.com*), there are over 40 certified TFCO programs worldwide; approximately 70% of these have implemented TFCO under this model.

Community Development Teams

The California Institute for Mental Health (CIMH; Sosna & Marsenich, 2006) developed the community development team (CDT) model to help public service systems in California implement evidence-based practices. CIMH serves as a state training and technical assistance center with well-established relationships with state child service providers (mental health, juvenile justice, child welfare). The CDT model is collaborative and relies heavily on building peer-to-peer networks of adopters who, with support from TFC Consultants, Inc., work together to develop TFCO implementation plans and overcome barriers (Chamberlain et al., 2012). This model consists of multicounty development team meetings attended by two CIMH technical assistance providers and key stakeholders from each county (i.e., consumers, practitioners, and system leaders). CDT meetings are intended to be structured yet informal and focus on discussions about state and county needs and policies, problem solving of barriers to implementation, review of fidelity data, highlighting successes, and providing support and feedback about progress and problems.

We conducted a large-scale randomized implementation study in 51 counties in California and Ohio to examine whether participation in the CDT process resulted in improved implementation of TFCO outcomes for participating counties. Results showed that although there was no evidence that using the CDT strategy (compared to independent implementation) led to higher numbers of counties implementing or to counties implementing faster, being in the CDT condition did increase the number of placements per site and the quality of the implementation. Those in the CDT condition placed over twice as many youth in their TFCO programs during the study period and were more likely to be certified as meeting fidelity criteria. Therefore, we found that CDT counties had more robust and sustainable TFCO programs compared to those who implemented independently (Brown et al., 2014).

FUTURE DIRECTIONS

Sixty-nine sites are currently implementing TFCO worldwide, including both certified and "in progress" teams in the United States, Denmark, Norway, the Netherlands, Sweden, and New Zealand. In Sweden, researchers have conducted a series of studies including a randomized trial showing results similar to those achieved in the U.S. trials (Bergström & Höjman, 2016). The results of these and other trials that examine outcomes within the context of a variety of child and family public service systems will yield much needed information about the translatability of the model and lead to future generations of research questions.

CONCLUDING COMMENTS

Over the past several years, community-based interventions such as TFCO have become more widely accepted for the treatment of delinquency and of serious emotional and behavioral problems. TFCO appeals to clinicians and policymakers because, compared to residential treatment, it is less intrusive, less expensive, and has demonstrated greater youth behavioral improvements. In addition, participation in TFCO reduces societal costs and saves taxpayer dollars.

There is much to be learned about "what it takes" to scale up evidence-based practices effectively in real-world settings. During the past decade there has been increasing attention on features that influence the adoption, implementation, and sustainability of evidence-based practices such as TFCO in child and family services sectors (Beidas & Kendall, 2014). However, studies comparing implementation strategies are limited, difficult to conduct, and expensive. Therefore, it is important to leverage real-world (often system-initiated) implementations to evaluate key factors and strategies related to successful–unsuccessful implementation. Studies using the new generation of effectiveness–implementation hybrid designs are well suited to address the complex problems of combining research on clinical effectiveness and research on implementation (Curran, Bauer, Mittman, Pyne, & Stetler, 2012).

ACKNOWLEDGMENTS

The research reported in this chapter was supported by the Oregon Youth Authority and grants from the National Institutes of Health (Nos. P30 MH046690, MH047458, MH054257, MH059127, MH076158, MH091611, P50 DA035763, P30 DA023920, DA015208, DA017592, DA021603, and DA024672).

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CHAPTER 12

Treating Serious Antisocial Behavior Using Multisystemic Therapy

Scott W. Henggeler and Cindy M. Schaeffer

OVERVIEW OF THE CLINICAL PROBLEM

Multisystemic Therapy® (MST; Henggeler, Schoenwald, Borduin, Rowland, & Cunningham, 2009) is a comprehensive and empirically supported treatment for adolescents with severe antisocial behavior and their families. Because of its relative intensity, MST is most appropriate and cost-effective for youth referred by the juvenile justice system with serious and chronic patterns of offending and at high risk for out-of-home placement (e.g., incarceration, residential treatment), as well as teenagers with conduct disturbances and substance abuse problems referred by the child welfare or mental health systems. Such youth often incur significant long-term social and economic costs to themselves, their families, and their communities. Thus, the provision of effective treatment for this population can provide many benefits for these youth (e.g., healthier and more successful lives) and society (e.g., reduced crime and associated costs).

CONCEPTUAL MODEL GUIDING THE TREATMENT PROGRAM

The development of MST began in the late 1970s, with the first clinical trial published in 1986 by Henggeler et al. At that time, existing treatments for juvenile offenders were office or institution based, rarely focused on the known risk factors for antisocial behavior in adolescents (i.e., family relations, peer associations, school performance), were narrow in their problem conceptualization, and had little empirical support. Hence, as explicated by Henggeler (1982) and his colleagues, it seemed reasonable to argue that in order to be effective, treatments for delinquency must be capable of attenuating a comprehensive array of risk factors, with the family viewed as the primary conduit. Moreover, in light of the extremely low rates of treatment attendance for families of delinquents, it was also clear that strategies had to be developed to overcome barriers to treatment delivery. These circumstances set the stage for the next 35 years of MST development and research.

Theoretical Framework

MST was designed to address the multiple risk factors associated with juvenile offending that have been identified through decades of basic research on the causes and correlates of antisocial behavior. Because these risk factors exist and interact within and across multiple domains of a person's life, Bronfenbrenner's (1979) social-ecological model provides a useful organizing framework for MST. The social-ecological model maintains that youth behavior is largely determined by the functioning of the multiple systems (i.e., family, school, peer, and neighborhood) in which the youth is embedded and the reciprocal interplay between these systems (e.g., contacts between caregivers and school personnel). Moreover, the youth's key systems are themselves embedded in larger contexts (e.g., the caregiver's workplace, the school system) that also indirectly affect youth functioning through their impact on more proximal systems (e.g., stress in the caregiver's workplace interferes with parenting, zero-tolerance policy decided by the school board results in expulsion for minor infractions). Thus, the social-ecological model asserts that all adolescent behavior is determined by multiple direct and indirect factors, and that these factors exert their influences in individualized ways based on each youth's unique social context.

In light of the social-ecological model and research on the determinants of antisocial behavior in adolescents (Heilbrun, DeMatteo, & Goldstein, 2016; Liberman, 2008), MST contends that for treatment of serious antisocial behavior to be effective, interventions must have the capacity to target known risk factors at multiple levels, including individual (e.g., cognitive biases, attention problems), family (e.g., lax parental supervision, caregiver substance abuse), peer (e.g., association with deviant peers), school (e.g., poor achievement, low bonding to school), and neighborhood (e.g., few opportunities for prosocial activities, availability of drugs). Similarly, interventions must have the capacity to address difficulties between systemic levels (e.g., caregiver interactions with the youth's peers and teachers). Factors in the broader ecology (e.g., caregiver work hours, lack of prosocial activities in neighborhood) that create barriers to the effective functioning of proximal systems (e.g., the caregiver's ability to supervise and set limits) also must be addressed for positive change to occur and be sustained.

The social-ecological perspective, therefore, emphasizes the importance of understanding behavior within its naturally occurring context, which has very important implications for the design of MST interventions. MST uses a home-based service delivery model that emphasizes ecological validity in the assessment and delivery of interventions. Ecologically valid assessments require that the clinician understand the youth's functioning in a variety of real-world settings (e.g., at home, in the classroom, during community activities), and that such understanding come from firsthand sources (e.g., caregivers, siblings, extended family, teachers, coaches) as much as possible. Similarly, therapeutic interventions are provided where problems occur—in homes, schools, and community locations—and, whenever possible, are delivered to the youth by key ecology members such as caregivers and teachers.

MST Theory of Change

In MST, caregivers are viewed as the main conduits of change, and interventions focus on empowering them with the resources and skills they need to be more effective with their children. Then, as caregiver effectiveness increases, the therapist guides caregiver efforts to, for example, disengage their teenagers from deviant peers and enhance school performance. Thus, the family is viewed as critical to achieving and sustaining decreased adolescent antisocial behavior and improved functioning. Importantly, the emphasis of MST on improved parenting and decreased youth association with deviant peers as central vehicles for change has been supported in quantitative research that assessed mediators of change in MST clinical trials (e.g., Dekovic, Asscher, Manders, Prins, & Van der Laan, 2012; Henggeler, Letourneau, et al., 2009; Huey, Henggeler, Brondino, & Pickrel, 2000) as well as qualitative research that examined the perceptions of family members who received MST interventions (Kaur, Pote, Fox, & Paradisopoulos, 2015; Paradisopoulos, Pote, Fox, & Kaur, 2015; Tighe, Pistrang, Casdagli, Baruch, & Butler, 2012).

From a more clinical perspective, the therapist collaborates with the family (Tuerk, McCart, & Henggeler, 2012), using family strengths (e.g., love for the adolescent, indigenous social support) to overcome barriers to caregiver effectiveness (e.g., caregiver substance abuse, debilitating stress, hopelessness). As caregiver effectiveness increases (e.g., ability to monitor, supervise, and support the child), the therapist helps the caregivers design and implement interventions aimed at decreasing youth antisocial behavior and improving youth functioning across family, peer, school, and community contexts. The ultimate aim is to surround the youth with a context that supports prosocial behavior (e.g., prosocial peers, involved and effective caregivers, supportive school), replacing the context that is conducive to antisocial behavior. Similarly, treatment aims to surround the caregivers with indigenous (i.e., extended family, friends, neighbors) support to help sustain the changes achieved during treatment.

CHARACTERISTICS OF THE TREATMENT PROGRAM

Treatment Delivery

MST is provided by full-time master's-level therapists, who each carry caseloads of four to six families. Two to four therapists work within a team, and each team is supervised by an advanced master's- or doctoral-level supervisor, who devotes at least 50% of his or her time to the team. Team members usually work for private service provider organizations contracted by public juvenile justice, child welfare, and mental health authorities. Teams also receive weekly consultation from an expert MST consultant, who helps facilitate model adherence.

MST clinicians provide 24-hour/7 days a week availability, which allows sessions to occur at times convenient for families and enables therapists to react quickly to crises that might threaten goal attainment (e.g., caregiver needs evening support to address an adolescent's drug relapse). Although the duration of treatment is relatively brief (3–5 months), the intervention process is intensive and often involves 60 hours or more of direct contact between the therapist and the family, as well as others in the youth's ecosystem. As noted previously, MST uses a home- and community-based (e.g., schools, workplaces) model of service delivery, which, in addition to enhancing the ecological validity of assessments and interventions, also decreases barriers to service access, supports therapeutic engagement, and promotes generalization of therapeutic gains.

Treatment Principles

Because of its highly individualized nature, MST does not follow a rigid manualized plan for treatment. Rather, nine treatment principles provide the underlying structure and framework on which therapists build their interventions. In addition to principles that stem from the social-ecological model, interventions are designed to be intensive (i.e., daily or weekly effort by family members), developmentally appropriate, present focused, and action oriented. Interventions also must aim to encourage responsible behavior by all parties and are designed from the beginning to promote the generalization and long-term maintenance of therapeutic gains. Thus, for example, while grounding an adolescent for 6 months might decrease antisocial behavior, such extended isolation will not likely meet the adolescent's developmental need for peer interaction, provide opportunities for the youth to demonstrate responsible behavior (e.g., coming home before curfew), or allow the caregiver to practice important new skills that will be essential for ongoing success (e.g., monitoring the youth's whereabouts and associations).

An overriding treatment principle is that all aspects of MST must be strengths based and that ecological strengths be used as levers for change. An optimistic perspective is communicated clearly to the family and other members of the youth's social network throughout the assessment and treatment process. Therapists look for potential strengths within the various ecological contexts, investigating factors pertaining to the child (e.g., competencies, attractiveness), caregivers and extended family (e.g., affective bonds, social support), peers (e.g., prosocial activities, achievement orientation), the school (e.g., management practices, course offerings), and the neighborhood/community (e.g., neighbor concern, recreational opportunities). Identified strengths then are leveraged in interventions. For example, a neighbor or extended family member might be enlisted to assist with monitoring the youth after school until the caregiver gets home from work. Clinicians are trained to incorporate this strengths-based approach throughout their work. For example, supervisors assist clinicians in identifying barriers to treatment success rather than perceiving clients as being resistant to change.

Clinical Procedures and Interventions

Clinical interventions adhere to the nine treatment principles and are applied using a standardized analytical/decision-making process that structures the treatment plan, its implementation, and the evaluation of its effectiveness (see Figure 12.1).

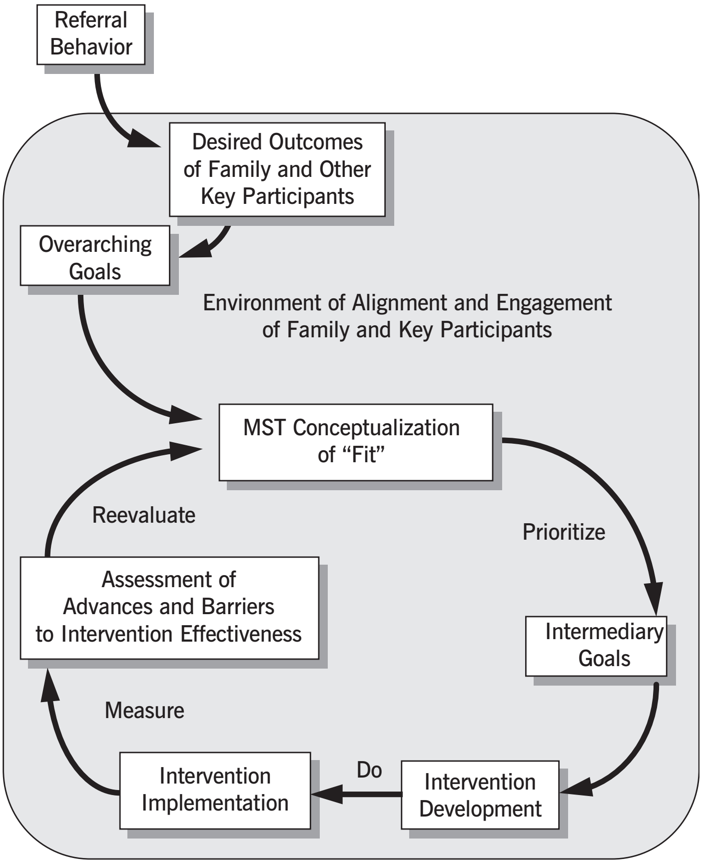

FIGURE 12.1. MST analytical process for clinical decision making.

Throughout this process, the adolescent's caregivers are viewed as key to achieving treatment goals and crucial for the generalizability and sustainability of treatment gains.

At the beginning of treatment, the referral behavior and other problem behaviors to be targeted are specified clearly from the perspectives of key stakeholders (e.g., family members, teachers, juvenile justice authorities). Ecological strengths also are identified, and stakeholder perspectives on why problem behaviors are occurring are assessed. The desired outcomes of each stakeholder are synthesized into several overarching goals for treatment at individual, family, peer, and social network levels. Then, based on multiple perspectives, the ecological factors that seem to be driving each problem are organized into a coherent conceptual framework (e.g., the youth's marijuana use seems to be associated with a lack of caregiver monitoring, association with substance-using peers, and poor school performance). Next, the MST therapist, with support from other team members (other therapists, supervisor, consultant), outlines a set of intermediary goals that must be achieved in order for overarching goals to be reached and designs specific intervention strategies to target prioritized "drivers." Strategies incorporate interventions from empirically supported, pragmatic, problem-focused treatments such as structural/strategic and behavioral family therapies, behavioral parent training, cognitive-behavioral therapy, motivational interviewing, and contingency management (Henggeler et al., 2012). In addition, when evidence indicates biological contributors to identified problems, evidence-based psychopharmacological interventions are incorporated into treatment.

A critical feature of MST, however, is that these empirically supported interventions are highly integrated, so that all treatment components focus on meeting the overarching goals of treatment. Such integration is achieved primarily through the use of a single therapist, who understands and responds to the needs and desires of family members and external stakeholders. An MST therapist, for example, might teach anger management techniques (e.g., relaxation) to an aggressive adolescent, while simultaneously working with the caregivers to implement a comprehensive behavior plan that includes rewards for the successful use of these techniques. Moreover, such interventions might occur in conjunction with both family therapy interventions to enhance positive communications and problem-solving skills and individual adult sessions to address anxiety symptoms the caregiver experiences when attempting to discipline the youth. Importantly, these integrated services are delivered in conjunction with select interventions that address other pertinent drivers of the identified problems in the youth's social ecology (e.g., supporting caregivers in advocating for more appropriate school services, connecting caregivers with the parents of the youth's peers) and barriers to treatment participation (e.g., meeting with families on weekends to accommodate the caregivers' work schedules).

Recursive Clinical Decision Making

As MST interventions are implemented, their effectiveness is monitored continuously from multiple perspectives. Using a recursive feedback process (Figure 12.1), identified drivers of problem behavior are reconceptualized when interventions are ineffective, and modifications are made until an effective strategy is developed. For example, if a youth's substance abuse was conceptualized as stemming primarily from his or her association with drug-abusing peers, interventions would be developed to eliminate or reduce the youth's association with such peers, while concomitantly building relations with more prosocial peers and engaging in more prosocial activities. However, if these interventions were successful but the youth was still using drugs (e.g., as evidenced by results of random urine screens), the fit of the youth's substance abuse would need to be reconceptualized (e.g., perhaps he or she is using drugs primarily for anxiety reduction), and interventions redesigned and implemented accordingly (e.g., relaxation training, a self-management plan for coping with cravings). The outcomes of these interventions would be evaluated again and implementation plans revised or not, accordingly. Throughout this process, intermediary goals are set so that ecology members can achieve them in just a few days (e.g., the youth practices relaxation techniques three consecutive days and parent provides a reward) to help ensure steady treatment progress and timely determination of intervention effectiveness.

This reiterative process reinforces two important features of the MST model. First, MST teams strive never to give up on youth and families, doing whatever it takes to help families reach treatment goals. Second, when interventions are not successful, the failure is the team's rather than the family's. In other words, when the team develops accurate hypotheses of the drivers, identifies barriers to implementation success, and delivers corresponding interventions appropriately, families tend to achieve their goals, and youth antisocial behavior usually diminishes.

Training, Supervision, and Ongoing Quality Assurance

As discussed more extensively by Schoenwald (2016), several processes and structures are set up within the MST model to support treatment fidelity and help therapists attain desired clinical outcomes. New therapists participate in a 5-day orientation training that provides initial grounding in MST, and all team members participate in quarterly booster trainings. The majority of MST clinical learning, however, occurs as therapists work with families and receive weekly structured supervision and feedback both from the on-site MST team supervisor and the off-site MST consultant. The MST team meets weekly with the supervisor as a group, and the supervisor follows a specified protocol for reviewing and addressing the issues in each case with the team. The entire team, in turn, discusses cases with an MST expert consultant once a week to obtain additional feedback and direction as needed.

MST training, supervision, and consultation take place within a comprehensive quality assurance/quality improvement (QA/QI) system designed to help ensure that the dissemination of MST occurs with fidelity to the key aspects of the model that are essential in attaining youth and family outcomes. The process underlying this system has been worked out through more than 20 years of experience assisting community-based agencies in developing and maintaining sustainable MST teams. Indeed, 23,000 youth and families are treated annually through MST programs in more than 30 states and 15 nations. In addition to the well-specified initial and ongoing training, supervision, and consultation protocols, key components of the QA/QI system include validated measures of implementation adherence at all levels (therapists, supervisors, and consultants) and a Web-based implementation tracking system to provide teams and provider organizations with ongoing team-specific feedback about adherence and youth outcomes. Importantly, many aspects of the QA/QI system have been validated in ongoing research, and findings suggest that there are significant associations between program (e.g., therapist, supervisor, consultant) fidelity and favorable youth outcomes (Schoenwald, 2016).

In addition to supporting practitioner implementation of MST on a case-by-case basis, MST consultants provide extensive organizational support to communities and provider organizations that are interested in establishing MST programs. Initially, this support involves conducting a community assessment to determine whether the needs that prompted stakeholder interest in MST are likely to be met by an MST program, determining whether an MST program is viable in a specific practice context (e.g., mechanisms are in place for reimbursement sufficient to support the MST program), and cultivating stakeholder buy-in and commitment to the success of the program. Once MST has been implemented in a community, ongoing organizational support involves semiannual program reviews, problem solving of organizational and stakeholder barriers to implementation, and support for program directors. More information regarding the development and sustainability of MST programs is available from Henggeler, Schoenwald, et al. (2009) and the MST Services website at *www.mstservices.com.*

EVIDENCE ON THE EFFECTS OF TREATMENT

A comprehensive and concise overview of MST research is provided in "Multisystemic Therapy: Research at a Glance" (*http://mstservices.com/files/outcomestudies.pdf*). This document summarizes key features (e.g., authors, sample, design, follow-up, findings) of the 62 MST outcome, implementation, and benchmarking studies published through 2016, yielding more than 120 peer-reviewed journal articles. The majority of these studies were authored by investigators independent of the MST model developers, and more than 48,000 families were included across studies. This chapter focuses on key findings from the 15 controlled (i.e., experimental or quasi-experimental designs) outcome studies that evaluated MST with serious juvenile offenders, including 10 randomized trials and six trials conducted by independent investigators. In addition, findings are summarized from the 10 controlled outcome studies that evaluated MST with adolescents with serious conduct problems, including six randomized trials and eight trials conducted by independent investigators. Because this chapter focuses on MST for adolescents with serious antisocial behavior and their families, MST outcome studies addressing child abuse and neglect (e.g., Swenson, Schaeffer, Henggeler, Faldowski, & Mayhew, 2010) and chronic health care conditions (e.g., Letourneau, Ellis, et al., 2013) are not included but can be viewed at the aforementioned website.

A recent and comprehensive meta-analysis including most of these studies (Van der Stouwe, Asscher, Stams, Dekovic, & Van der Laan, 2014) concluded that MST has significant treatment effects on delinquency, psychopathology, substance use, family functioning, peer relations, and out-of-home placements. In addition, and consistent with an earlier meta-analysis (Curtis, Ronan, & Borduin, 2004), efficacy studies had larger treatment effects than did effectiveness studies. Efficacy studies, by their nature, are conducted in ways that optimize the probability that a treatment will achieve favorable outcomes (e.g., homogenous client samples excluding participants with co-occurring disorders, close supervision to promote treatment fidelity, sheltering the program from real-world implementation challenges), assuming that the intervention is actually effective. Effectiveness studies, on the other hand, are generally conducted in collaboration with community-based provider organizations using public sector practitioners and, therefore, evaluate the capacity of the intervention to be transported effectively to community settings. From the outset, however, MST studies were never purely efficacy studies in nature. The initial outcome studies and several that followed were efficacy–effectiveness hybrids—conducted in university settings under close supervision, but including youth and family samples with a wide range of co-occurring behavioral and emotional problems (Henggeler, 2011).

Early Efficacy–Effectiveness Hybrid Trials with Juvenile Offenders

Initiated after two earlier MST efficacy–effectiveness studies that produced promising results (Brunk, Henggeler, & Whelan, 1987; Henggeler et al., 1986), the Missouri Delinquency Project (Borduin et al., 1995), the longest running, continuous MST research study, provides an excellent example of optimal results achieved in MST research. Borduin provided close supervision of therapists, who were highly motivated doctoral students, and the MST program was housed within a university clinic. Participants, however, were violent and chronic juvenile offenders with minimal exclusion criteria. At posttreatment in this randomized trial, the youth in the MST condition evidenced decreased behavior problems, parents reported fewer psychiatric symptoms, and family relations improved in comparison with counterparts who received individual counseling. At 4-year follow-up, youth in the MST condition evidenced a 63% reduction in recidivism relative to comparison youth. At a 22-year follow-up (Sawyer & Borduin, 2011), participants in the MST condition sustained significant reductions in felony arrests (36% reduction) and had 33% fewer days in adult confinement. Moreover, at a 25-year follow-up, even their siblings had fewer criminal convictions and years sentenced to incarceration (Wagner, Borduin, Sawyer, & Dopp, 2014).

Effectiveness Trials with Juvenile Offenders

The favorable results in the aforementioned efficacy–effectiveness hybrid trials led to randomized trials of MST conducted in collaboration with community mental health centers using public sector practitioners. Results from these studies (i.e., Henggeler, Melton, Brondino, Scherer, & Hanley, 1997; Henggeler, Melton, & Smith, 1992), which compared MST with usual community services, further supported the capacity of MST to improve family functioning and decrease the rearrest and incarceration rates of serious juvenile offenders (for a concise summary of study details, see *http://mstservices.com/files/outcomestudies.pdf*). Importantly, this work also highlighted the critical role that treatment fidelity plays in achieving favorable outcomes. For example, Henggeler et al. (1997) found that higher therapist fidelity to MST treatment protocols was significantly associated with better youth outcomes, an important finding replicated in several MST transportability studies (Schoenwald, 2016).

Timmons-Mitchell, Bender, Kishna, and Mitchell (2006) provided the first independent replication with serious juvenile offenders in the United States. In comparison with usual community services, MST improved youth functioning, decreased substance use problems, and decreased recidivism by 37%. Similarly, Butler, Baruch, Hickley, and Fonagy (2011) published the first independent replication of MST with juvenile offenders in Europe. In comparison with a tailored range of extensive and multicomponent evidence-based interventions, MST achieved substantive favorable outcomes, including 41% reductions in both offenses and out-of-home placements, as well as improved behavioral symptoms and parenting.

Trials with Juvenile Offenders with Substance Use Disorders

In light of favorable reductions in substance use achieved in early trials of MST with juvenile offenders (Henggeler et al., 1991), two subsequent randomized trials have been conducted with juvenile offenders meeting diagnostic criteria for substance abuse or dependence. The first study (Henggeler, Pickrel, & Brondino, 1999) compared MST with usual community services and demonstrated favorable MST effects in several areas, including reduced substance use, increased school attendance (Brown, Henggeler, Schoenwald, Brondino, & Pickrel, 1999) at post treatment, and a 74% reduction in violent crime at 4-year follow-up (Henggeler, Clingempeel, Brondino, & Pickrel, 2002). The second study (Henggeler et al., 2006) showed that MST enhanced the favorable effects of juvenile drug court in reducing substance use and criminal behavior. Sheidow and Henggeler (2012), as well as *http://mstservices.com/files/outcomestudies.pdf* provide a detailed overview of substance-related MST outcome research.

Trials with Juvenile Sex Offenders

Based on promising results from a small randomized efficacy–effectiveness hybrid trial with juvenile sex offenders (Borduin, Henggeler, Blaske, & Stein, 1990), larger efficacy–effectiveness hybrid and effectiveness trials were conducted with this challenging population. In the efficacy–effectiveness hybrid (Borduin, Schaeffer, & Heiblum, 2009), MST decreased youth behavior problems and symptoms, and improved family and peer relations at posttreatment in comparison with usual community services. Moreover, at a 9-year follow-up, sex offense recidivism was decreased by 83%, recidivism for other crimes was decreased by 50%, and days incarcerated by 80%. Although results of the effectiveness study comparing MST with usual sex offender specific treatment were not as dramatic (Letourneau et al., 2009; Letourneau, Henggeler, et al., 2013), favorable outcomes were achieved for several key variables and sustained at a 2-year follow-up for problem sexual behavior, self-reported delinquency, and out-of-home placements (59% reduction).

Trials with Adolescents with Serious Conduct Problems

These studies, the vast majority conducted by independent researchers, were usually implemented in collaboration with community-based provider organizations that receive referrals from a variety of community sources (e.g., schools, juvenile justice, child welfare) or in nations that do not have a juvenile justice system (e.g., Norway). All studies focused on youth with serious externalizing behavior problems, and in some (e.g., Henggeler, Rowland, et al., 1999; Huey et al., 2004; Rowland et al., 2005; Stambaugh et al., 2007) the adolescents had serious co-occurring internalizing disorders. In general, the findings from these studies are similar to those reported for studies of MST with juvenile justice samples. For example, in a randomized trial conducted in Norway, Ogden and colleagues (Ogden & Hagen, 2006; Ogden & Halliday-Boykins, 2004) demonstrated favorable MST effects for youth symptoms and social competence, out-of-home placements, and consumer satisfaction in comparison with usual child welfare services. Similarly, in a randomized trial in the Netherlands (Asscher, Dekovic, Manders, van der Laan, & Prins, 2013), favorable MST results, in comparison with usual community services, included decreased youth antisocial behavior and increased parental sense of competence, positive discipline, relationship quality, and youth association with prosocial peers. Findings in the United States have also been generally favorable as well. For example, in a study that randomized adolescents with serious conduct problems in self-contained classrooms to receive MST or not, Weiss et al. (2013) found that MST reduced externalizing problems, decreased school absences, and improved parenting and parental mental health symptoms. In their studies comparing MST with case management and wraparound, respectively, Painter (2009) and Stambaugh et al. (2007) observed that MST was more effective at improving youth functioning across several important life domains.

Although outcomes from MST evaluations have been almost always positive to at least some degree, a well-controlled randomized trial of MST with Swedish youth with conduct disorder showed no positive MST effects across a wide range of well-validated measures (Sundell et al., 2008) in comparison with usual child welfare services. As described subsequently in the section of this chapter on MST implementation research, failure to replicate favorable outcomes can provide extremely valuable information regarding the conditions needed for the effective transport of evidence-based treatments to community settings—provided that the original evaluation was methodologically rigorous, as with Sundell et al. If the original evaluation is not well conducted, a wide variety of research variables (e.g., inappropriate participant inclusion and exclusion criteria, poor measurement selection, high research attrition, inappropriate comparison conditions) can account for the failure of an otherwise effective treatment to achieve favorable outcomes.

Cost-Related Studies

The cost savings, cost-effectiveness, and cost–benefit ratio of MST have been supported in several studies conducted in conjunction with the aforementioned clinical trials. In the evaluation of MST with substance abusing and dependent juvenile offenders (Henggeler, Pickrel, et al., 1999), Schoenwald, Ward, Henggeler, Pickrel, and Patel (1996) found that the incremental cost of MST was nearly offset by between-group differences in out-of-home placement by 11-months postreferral. With youth referred for emergency psychiatric hospitalization (Henggeler, Rowland, et al., 1999), Sheidow et al. (2004) reported cost savings for MST at 4-months postrecruitment and equivalent costs compared to inpatient psychiatric hospitalization at 16 months. In the British study with juvenile offenders (i.e., Butler et al., 2011), MST showed cost savings due to crime reduction (Cary, Butler, Baruch, Hickey, & Byford, 2013), and in the Missouri Delinquency Project, a cost–benefit analysis showed savings of $35,582 per juvenile offender and $7,798 per sibling (Dopp, Borduin, Wagner, & Sawyer, 2014) at 25-year follow-up. Finally, in the sex offender study (Borduin et al., 2009), MST produced a cost–benefit of $343,455 per MST participant at the 9-year follow-up (Borduin & Dopp, 2015).

MST IMPLEMENTATION RESEARCH

The large-scale transport of MST in the United States and internationally has enabled investigators to examine the factors that influence the functioning of this evidence-based treatment in diverse and distal community settings. Indeed, much of the most recently published MST research has focused on systemic influences on MST effectiveness. Several of the most conceptually important implementation studies are presented here, and the full array of MST implementation research can be viewed at *http://mstservices.com/files/outcomestudies.pdf.*

Sundell et al. (2008) proposed several viable hypotheses for their aforementioned failure to replicate favorable MST outcomes, one of which pertained to the low treatment adherence observed for therapists in the study. This hypothesis was subsequently examined by Lofholm, Eichas, and Sundell (2014), who analyzed MST therapist adherence and youth outcomes from the time of their initial study, when MST was first being introduced in Sweden, to 6 years later, when MST programs were well established. The researchers found that treatment adherence and concomitant youth outcomes improved steadily during these years, and that greater program and therapist experience were associated with better outcomes. The authors' conclusion has important implications for all effectiveness research: "An outcome evaluation that is initiated during early stages of implementation may result in failure to find effect of the intervention, thus making it paramount to secure adequate treatment adherence before recruiting clients" (p. 653). As noted previously and summarized by Schoenwald (2016), several studies have demonstrated that therapist adherence to MST treatment protocols is associated with more favorable youth outcomes.

In a similar vein, Smith-Boydston, Holtzman, and Roberts (2014) examined the effects of withdrawing ongoing quality assurance from a well-functioning MST program. Due to the loss of state and federal funding, the provider organization in which this program was embedded decided to discontinue oversight by MST Services but to maintain the MST program in response to community support. The elimination of quality assurance support resulted in considerable program drift (e.g., 50% fewer family contacts, many fewer families meeting treatment goals) and significant increases in rearrest rates. This finding is consistent with both Lofholm et al. (2014) and a correlational implementation study including 496 MST teams and more than 25,000 families (Brunk, Chapman, & Schoenwald, 2014). Higher overall MST program fidelity was associated with fewer youth arrests and better team performance. Together, the results from these studies suggest that ongoing organizational support is critical to the successful implementation of MST, and that program drift can occur quickly when quality assurance procedures are not in place.

Finally, two recent studies, one in the United States and the other in South America, evaluated key components of the effective large-scale implementation of MST and drew similar conclusions. Welsh and Greenwood (2015) interviewed stakeholders in the five U.S. states with the most evidence-based programs (i.e., MST, functional family therapy, multidimensional treatment foster care) per million population and asked about the bases of their successful dissemination. Pantoja (2015) examined government documents pertaining to the decision-making process by which MST was adopted and implemented across the nation of Chile. Across studies, several features were cited as critical to successful program implementation: leadership by effective champions of the programs, structured collaboration among all stakeholders (e.g., government, justice authorities, provider organizations), special funding and pilot testing of new programs, and technical assistance for adopters.

In conclusion, as summarized by Schoenwald (2016), early research on the implementation of MST focused on validating the associations among components of the MST quality assurance protocol (e.g., therapist, supervisor, and consultant fidelity to MST protocols) and key youth outcomes. More recently, the widespread dissemination of MST programs has enabled investigators to evaluate factors that influence the functioning of such programs in varied community settings. Findings from this MST-related research can inform implementation research pertaining to other evidence-based treatments.

FUTURE DIRECTIONS

In light of the already extensive literature validating the effectiveness of MST in treating serious antisocial behavior in adolescents, the conduct of additional standard clinical trials for such adolescents and their families is not a priority. Rather, we suggest that investigative attention be devoted to a particularly challenging clinical-level issue and to further implementation research.

At the clinical level, evidence is accumulating that youth association with antisocial peers is a significant moderator of MST effectiveness, and favorable outcomes have been mediated by changes in peer relations (Huey et al., 2000). As discussed previously regarding the MST model of change and the research supporting this model, decreasing association with deviant peers and increasing relations with prosocial peers are key targets of MST interventions. Several studies have shown, however, that favorable outcomes can be attenuated by the severity of negative peer involvement (Boxer, 2011; Ryan et al., 2013). For perhaps the most challenging deviant peer context, Boxer, Kubik, Ostermann, and Veysey (2015) found that current gang membership significantly reduced successful completion of MST (33 vs. 80%) even controlling for risk factors. Gang ties can be intense, long-lasting, and difficult to sever. MST and the broader field of juvenile justice would benefit greatly from the development of more effective strategies for disengaging youth from deviant peers and encouraging friendships with prosocial peers.

Building on the innovative implementation research that is being conducted, two implementation-related suggestions are offered. First, in light of the worldwide transport of MST and other evidence-based treatments, a pressing need has emerged for the development and validation of effective and efficient strategies for recruiting, training, and retaining therapists, supervisors, and consultants. MST and other evidence-based treatments represent significant departures from traditional mental health practices, and the field knows little about how to retool the workforce to support the implementation of these innovations. Similarly, as also noted by Schoenwald (2016), increased research is needed on the organizational and service system factors that are critical for the sustainability of high-quality evidence-based programs. Therapists work in complicated ecological contexts (e.g., including supervisors, administrators, colleagues, organizational mandates and constraints, fiscal challenges), and it seems likely that various aspects of these contexts can attenuate or enhance therapist capacity to implement evidence-based practices with the fidelity needed to achieve desired results.

CONCLUDING COMMENTS

As presented in this chapter, MST has become an extensively validated and widely disseminated evidence-based treatment of antisocial behavior in adolescents. As described elsewhere (Henggeler, 2016), MST shares key features with other evidence-based treatments of antisocial behavior in adolescents (i.e., functional family therapy and multidimensional treatment foster care). These treatments

- Address known risk factors comprehensively.
- Focus on the family as the key change agent.
- Provide services in community settings, not in restrictive settings.
- Incorporate pragmatic, behaviorally oriented intervention techniques.
- Include well-conceived quality assurance protocols to support treatment fidelity and youth outcomes.

Moreover, implementation research is demonstrating the conditions under which evidence-based treatments such as MST can be transported effectively to diverse real-world settings. Together, MST and other evidence-based treatments provide tools that can be tapped by advocates and policymakers to better meet the public health needs of youth, families, and communities (Henggeler & Schoenwald, 2011).

ACKNOWLEDGMENTS

This chapter was supported by Grant Nos. R01DA34064 and R01DA29726 from the National Institute on Drug Abuse and Grant No. R43MH97349 from the National Institute of Mental Health. Scott W. Henggeler is a board member and stockholder of MST Services LLC, the Medical University of South Carolina-licensed organization that provides training in MST. Cindy M. Schaeffer provides occasional clinical trainings for MST Services and is paid for her time.

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CHAPTER 13

Summer Treatment Programs for Attention-Deficit/Hyperactivity Disorder

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OVERVIEW OF THE CLINICAL PROBLEM

Children with attention-deficit/hyperactivity disorder (ADHD) have serious problems in daily life functioning, including classroom functioning and achievement, peer relationships, and family relationships. ADHD results in considerable financial costs to society (Pelham, Foster, & Robb, 2007) and has poor long-term outcomes (Barkley, Murphy, & Fischer, 2008). It has become increasingly evident that ADHD should be viewed as a chronic disorder, and that models of treatment should be those pertinent to a chronic disease. Thus, interventions need to be effective, implemented across settings, and structured so that they can be conducted for years (Pelham & Fabiano, 2008). Two interventions have been repeatedly documented as solidly evidence-based for ADHD in short-term studies—central nervous system (CNS) stimulants and behavioral interventions (Pelham & Fabiano, 2008).

The most common form of treatment for ADHD is medication with CNS stimulants. They have an extensive evidence base and often result in large short-term improvements, but these medications have limitations. Among these are that (1) parents prefer nonpharmacological interventions, (2) medication has limited impact on key domains of functioning, (3) medication is insufficient to normalize functioning for many children, (4) long-term compliance with medication is poor, (5) medication used alone does not result in improved long-term outcomes (Molina et al., 2009), and (6) the long-term safety of stimulant medications has not been established (see Pelham, 2008, for a discussion of these limitations).

The second most common treatment for ADHD is behavior modification in the form of parent training and school interventions. Behavior modification has a large evidence base and has extensively documented short-term efficacy (Fabiano et al., 2009; Pelham & Fabiano, 2008). Unlike medication, behavioral interventions teach skills to parents, teachers, and children that overcome some of the key functional impairments associated with ADHD. At the same time, when implemented at a level typical of clinical practice (e.g., a dozen sessions of group parent training, in-clinic social skills groups, and a brief teacher consultation), there is increasing evidence that typical outpatient behavioral interventions alone are not sufficient for most children at improving acute functioning (Pelham et al., 2016). Arguably, relatively more intensive psychosocial treatment programs are necessary to produce substantive, lasting behavioral changes in these children (Pelham & Fabiano, 2008).

CONCEPTUAL MODEL GUIDING THE TREATMENT PROGRAM

We have argued elsewhere that various domains of functional impairment are far more important to both short- and long-term functioning in ADHD than are symptoms and should be foremost among targets of treatment (Pelham, Fabiano, & Massetti, 2005). It has long been known that impairment in three domains—(1) peer relationships, (2) parenting, and (3) academic/school functioning—predict a variety of negative long-term outcomes in children with a variety of psychopathologies *and* are thought to mediate these outcomes. Therefore, effective treatment must focus on these problems in daily life functioning.

First, with regard to peer relations, standard treatments such as clinic-based social skills training have *not* proven efficacious (Pelham & Fabiano, 2008). One reason for this failure is that it is difficult to work on peer relationships in the office or in the regular education classroom. However, peer relationships can be targeted in recreational settings in which children can be observed interacting directly with peers and be taught not only appropriate behavior and social skills, but also sports knowledge, teamwork, and appropriate sportsmanship.

Second, ADHD commonly co-occurs with learning problems, and stimulant medication alone has not been shown to produce long-term gains in achievement (Loe & Feldman, 2007). It has long been argued that children, particularly children at risk for achievement problems, *lose* academic skills during summer vacations (Borman & Boulay, 2004). Attendance at traditional summer school is modest at best. Arguably, combining academic instruction with recreational activities increases children's attendance and therefore would produce greater benefit from summer academic programming.

Finally, deficits in parenting skills and parent–child relationships have long been known to predict dysfunctional outcomes for children. Behavioral parent training that targets parenting skills is one of the most well-documented interventions for children with ADHD and other disruptive behavior disorders (DBDs; Pelham & Fabiano, 2008). Combining evening parent training with intensive work with children during the day is an ideal way to begin generalizing treatment effects to the home setting. Working with parents during the summer months also provides important opportunities to prepare parents for the transition to the school year.

In summary, the summer is an opportune time to focus on the domains of impairment that are most critical to children with ADHD. These children are likely to experience failure in traditional summer camps or their own neighborhoods, where they are often dismissed for their disruptive behavior or rejected by other children. If treatment being provided in traditional settings is interrupted during the summer, gains made during the school year may be lost. Given a chronic care model, year-round intervention is critical for children with ADHD.

This chapter describes the Summer Treatment Program (STP) and presents information on the efficacy, social validity, and exportability of the program. The STP includes intervention in a camp-like setting in which children engage in a variety of activities with peers, along with academic instruction and parent training. Program goals are to improve children's peer relationships (e.g., social skills, problem-solving skills), interactions with adults (e.g., compliance to requests), academic performance (e.g., classroom productivity), and self-efficacy (e.g., competence in sports), while concurrently training their parents in behavior management. Notably lacking is a focus on DSM symptoms of ADHD. Instead, each child's functional impairments are identified and explicitly targeted in treatment. Using a social learning theoretical approach, our intervention is a package of age-appropriate, evidence-based operant and cognitive-behavioral treatments, adding psychostimulant medication when necessary through a controlled assessment. If the standard treatment package does not produce the desired behavior change for a child, staff members conduct a functional analysis and develop individualized programs that target that child's unique problems in daily life functioning.

CHARACTERISTICS OF THE TREATMENT PROGRAM

The STP is a weekday program for children and adolescents ages 3–16 years with ADHD and related disorders. Programs typically run for 7–8 weeks, 8–9 hours per day, though shorter programs have been employed in community settings (Pelham, Fabiano, Gnagy, Greiner, & Hoza, 2005), and a 3-week program in Japan has proven efficacious (Yamashita et al., 2010). Children are placed in age-matched groups of 12 to 16, and four to five college student interns implement treatments. Groups stay together throughout the summer, so that children receive intensive experience in group functioning, in making friends, and in interacting appropriately with adults. Children spend 2–3 hours daily in classroom activities conducted by teachers and aides. The remainder of each day consists of recreationally based group activities (sports, swimming). Parent training is held weekly. A treatment manual and supporting documents (e.g., tracking forms, fidelity/integrity materials) describe the program in detail (Pelham, Greiner, & Gnagy, 2014) and are available at no charge at *http://ccf.fiu.edu.*

Treatment Components

Point System

Using a systematic reward–response cost program, children earn points for appropriate behavior and lose points for inappropriate behavior throughout the day. Such programs have an extensive history in behavior modification and have large, acute effects on children's behavior. The behaviors included in the STP point system are those that are commonly targeted for development (e.g., following rules, ignoring provocation, good sportsmanship, paying attention) and elimination (e.g., teasing, noncompliance, aggression) in children with ADHD, oppositional defiant disorder (ODD), and conduct disorder (CD). Children exchange points for prizes (e.g., shopping at a point store), privileges (e.g., Friday afternoon special activities), social honors, camp-based rewards (e.g., daily recess), and parent-administered rewards.

Social Reinforcement and Appropriate Commands

Social reinforcement in the form of praise and public recognition is ubiquitously employed to provide a positive, supportive atmosphere. Counselors praise the children for appropriate behavior, modeling appropriate social reinforcement for the parents during drop-offs and pick-ups. Children are informed about point losses in a neutral, nonadmonishing tone. In addition, staff members shape appropriate behavior by issuing commands with characteristics (e.g., brevity, specificity) that have been shown to maximize compliance.

Daily Report Cards and Parent Involvement

Daily report cards (DRCs) to parents have documented effectiveness for ADHD. In the STP, DRCs include individualized target behaviors across all settings. Target behaviors and criteria for meeting goals are set and revised in an ongoing manner to ensure that they are at appropriate levels to challenge the child but enable success. At the end of the day, each child's counselor meets briefly with the child and his or her parents to give feedback about the day and to model for parents how to respond to positive and negative performance on DRC goals. Parents provide rewards for reaching DRC goals, and are taught to establish home-based DRCs during weekly group parent training sessions. The parent training packages that we have employed (e.g., Cunningham, Bremner, & Secord-Gilbert, 1998) have been validated as effective with children with externalizing disorders. Parents who have previously completed parent training may participate in an advanced class incorporating *in vivo* training situations.

Time-Out

"Prudent punishment" (e.g., appropriate verbal reprimands, privilege loss, time-out) is necessary for effective intervention with ADHD children. Thus, children are disciplined for certain behaviors (i.e., intentional aggression, intentional destruction of property, repeated noncompliance), with discipline taking the form of loss of privileges (e.g., loss of recess time) or time-out from positive reinforcement (Fabiano et al., 2004).

Medication Assessment

The STP provides the opportunity for parents and physicians to obtain placebo-controlled evaluations of stimulant medication. Data gathered routinely in the STP are evaluated, in addition to daily records of side effects, to determine whether medication was helpful, *beyond the effects of concurrent behavioral interventions.*

Skills Building

SPORTS SKILLS TRAINING

Children with ADHD typically do not follow the rules of games and have poor motor skills, deficits that contribute to their social rejection and low self-esteem. Involvement in sports is thought to enhance self-efficacy, which in turn is thought to play a role in behavior change. Thus, 3 hours each day are devoted to sports skills training and play. Techniques that are designed to optimize skills training and practice for children are employed. The intensive practice and time that is necessary to improve sports skills highlights the value of the STP setting for this program component (O'Connor et al., 2013). Figure 13.1 shows a typical recreational hour in the STP.

PEER INTERVENTIONS

Social skills training is provided in daily 10-minute group sessions that include instruction, modeling, role playing, and review. Children also engage in group tasks (e.g., art projects) that are designed to contribute to cohesive peer relationships. What sets the STP apart from traditional social skills training is that children's implementation of the skills taught is continually prompted and reinforced using the point system throughout the daily activities. The combination of

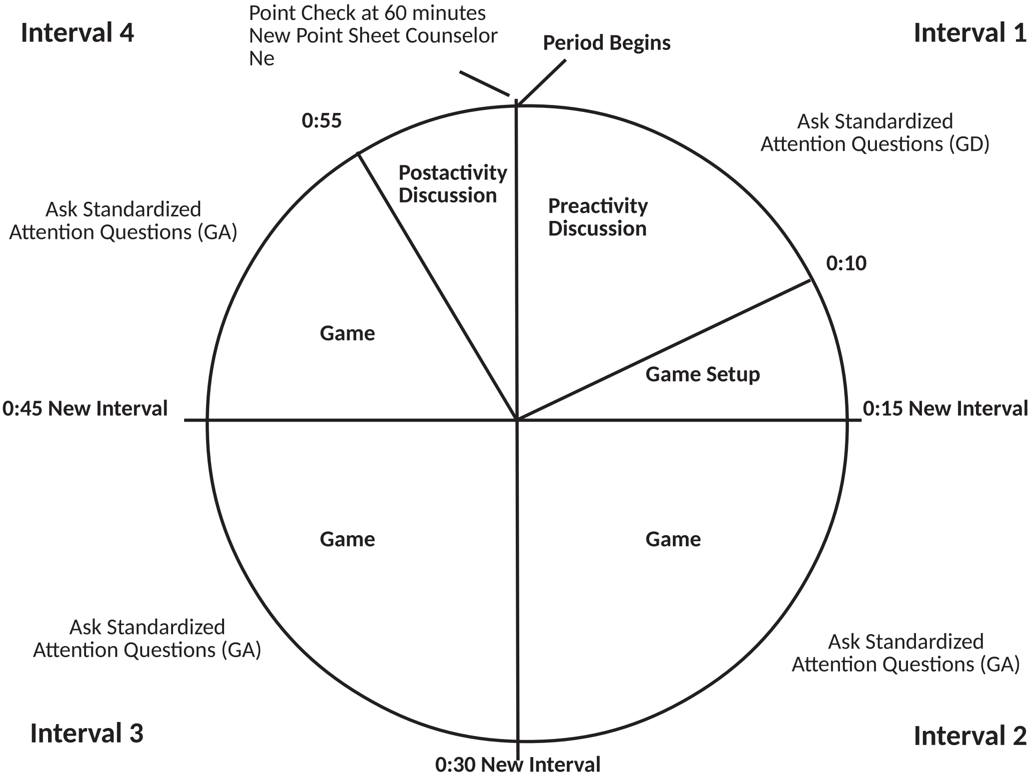

FIGURE 13.1. Timeline of a typical STP recreational period.

a reward–response cost program and social skills training has been shown to be necessary to effect the development of positive peer skills in children with externalizing disorders. Blending these components with parent training may be critical to enhancing change and generalization to the natural environment. Children also learn group problem-solving skills. This procedure is the basis for individual social problem solving that has long been applied with aggressive boys.

ACADEMIC SETTING

Children spend 2 hours daily in a classroom modeled after an academic special education classroom, and they spend a third hour in an art class. Behavior is managed using a simplified point system that includes earning points for work completion and accuracy, and losing points for rule violations. Public recognition and praise are given for assignment completion and accuracy. The behavior management system can be implemented by a teacher and a classroom aide, and is therefore generalizable to regular school settings.

During classroom periods, children engage in a variety of structured academic activities. Children complete assignments in major academic areas (e.g., arithmetic, reading comprehension, vocabulary, science) individualized according to each child's needs and abilities. Children may also complete cooperative peer reading tasks (see Lyon, Fletcher, Fuchs, & Chhabra, 2006), small-group instruction (see Morrow et al., 2014), or computer-based instruction. For young children at risk for reading disabilities, phonemic awareness training may be incorporated (see Lyon et al., 2006).

In the art class, children work on a variety of individual and cooperative group projects. Given that many children with ADHD have behavioral difficulties in less structured special areas in school, this class affords an opportunity to build skills for transfer to the regular school setting.

Modification for Preschoolers and Adolescents

Age-appropriate adaptations have been made for preschool-age children at risk for ADHD (Graziano, Slavec, Hart, Garcia, & Pelham, 2014) and for adolescents with ADHD (Sibley et al., 2011; Sibley, Smith, Evans, Pelham, & Gnagy, 2012). Modifications for preschoolers include classroom-based kindergarten readiness training and an age-appropriate modified feedback delivery system.

Modifications for adolescents include a less intensive feedback delivery system and age-appropriate modifications to daily activities. Components include behavioral contracting, supervised "job" training, conducting a group "business," parent–teen negotiation, and classroom interventions such as note taking and organizational skills.

Monitoring Treatment Response

Information on each child's treatment response is gathered daily from the point system; academic assignments; and counselor, teacher, and parent ratings; and is entered daily into a customized database. The information is immediately available to staff members and supervisors to monitor children's response to treatment and to make necessary individual modifications.

In addition, staff members and parents complete ratings of improvement at the end of the summer across a wide range of functional domains (e.g., compliance, peer relations, sports skills, self-esteem, academic productivity). These ratings have been shown to be sensitive to treatment effects (Pelham, Fabiano, Gnagy, et al., 2005).

Treatment Fidelity: Training, Supervision, Manuals, and Materials

The STP is extensively manualized and highly structured to facilitate implementation and fidelity (Pelham, Greiner, et al., 2014). The 375-page treatment manual provides comprehensive information on the intervention. An intensive 5- to 10-day staff training regimen has been implemented annually for approximately the past 30 years. Training requires preparatory reading of the treatment manual and includes written tests, presentations, supervised practice, and checkout activities. A video workshop that presents an extensive overview of the STP training is available at *http://ccf.fiu.edu*.

After training and throughout the treatment period, an extensive set of documented procedures is implemented to monitor and ensure treatment fidelity. Integrity materials cover every treatment component and include both lists of procedures and quality ratings. Supervisory staff members observe groups regularly to document adherence to the treatment protocol. Staff members meet regularly to receive structured feedback from supervisors and, if necessary, remedial activities are given. Documentation of program knowledge is evaluated by weekly written tests.

EVIDENCE ON THE EFFECTS OF TREATMENT

How Is Treatment Evaluated?

The STP was designed from the outset to facilitate clinical research. In contrast to traditional DSM symptom ratings, the STP provides a wealth of objective information on the child's behavior in the settings in which impairment is most evident (e.g., in the classroom, playing baseball with peers). Clinical records have sufficient fidelity, reliability, and validity to double as dependent measures in studies. Clinical observations generate research ideas, and results of empirical studies are used to modify subsequent treatment protocols. Through the summer of 2015, nearly 110 empirical studies have been conducted in the STP (for a full reference list, see *http://ccf.fiu.edu/research/publications*). These studies have added to our knowledge base of ADHD and include studies of medication, behavioral treatments, and combined interventions and their impact on cognition and behavior. In addition to the large number of treatment component studies conducted *within the context* of the STP, the STP *treatment package as a whole* has a substantial and growing evidence base.

The treatment program has been evaluated using a variety of sources. Primary among these are the treatment records of the children's behavior. Daily records from the point system, classroom work productivity and behavior, and DRCs provide objective data. Counselor, teacher, and parent ratings of child behavior supplement these measures and include measures of improvement in daily life functioning. Parent ratings of satisfaction with the treatment are also collected, and these provide an important social validity measure for program effectiveness. Finally, treatment integrity and fidelity measures demonstrate that the program can be implemented faithfully across different groups, years, and sites.

Status of the Evidence

A series of studies has demonstrated that the STP treatment and its components produce large, clinically meaningful changes in child behavior. In many of these studies, the effects of the STP behavioral interventions have been compared to medication with a CNS stimulant, which is a well-established intervention for ADHD, and the obtained effects have been comparable. Selected recent references are included herein (see Table 13.1 for a summary), and a more extensive list can

TABLE 13.1. Selected Summer Treatment Program Outcome Studies

Authors	Sample	Design summary	Outcomes measured	Results summary
Pelham & Hoza (1996)	258 boys ages 5–12	Posttreatment evaluations and pre–post ratings	Parent ratings of satisfaction, improvement, and behavior	Positive results of STP regardless of age, comorbidity, or family characteristics
Pelham et al. (2000)	94 boys, 23 girls at three STP sites as part of the MTA	Children attended the STP either steadily medicated or unmedicated	Child behavior, parent-rated improvement	Few differences found as a function of concurrent medication
Chronis et al. (2004)	40 boys, 4 girls ages 6–13	One-week withdrawal of all STP components	Child behavior, classroom performance, staff and parent effectiveness, and stress ratings	Large effects of the STP components across all measures
Pelham, Burrows-MacLean, et al. (2005)	25 boys, 2 girls ages 5–12	Full STP vs. no-BMOD crossed with placebo + three doses of methylphenidate	Child behavior, classroom performance, staff and parent effectiveness, and stress ratings	Large effects of STP similar or superior to medication alone; large effects of very low-dose medication when combined with STP
Fabiano et al. (2007); Pelham, Burrows-MacLean, et al. (2014)	44 boys, 4 girls ages 5–12	Full STP vs. low-intensity vs. no BMOD crossed with placebo + three doses of methylphenidate	Classroom behavior, classwork productivity, teacher ratings; child behavior in peer group settings (e.g., sports)	Both treatments were highly effective. Combining low-dose treatments produced substantial improvement over either single treatment
O'Connor et al. (2013)	73 boys, 25 girls ages 5–7	Between-groups comparison of children who attended the STP vs. typical summer activity	Gross motor coordination, specific sports skills, sports knowledge, parent-rated improvement	Sports training in STP improved sports knowledge, skills, and sportsmanship

Note. For a complete bibliography of research conducted in the STP, see *http://ccf.fiu.edu/research/publications.*

be found in Pelham, Fabiano, Gnagy, et al. (2005), Pelham and Fabiano (2008), and Fabiano et al. (2009).

A number of recent studies have provided evidence for the efficacy of the STP treatment package, compared with a no-treatment condition (Chronis et al., 2004, Fabiano et al., 2007; Pelham, Burrows-MacLean, et al., 2005; Pelham, Burrows-MacLean et al., 2014; Pelham et al., 2016). In a BAB (i.e., with treatment implemented, then withdrawn, then reinstated; Chronis et al., 2004) evaluation of the STP treatment package, the withdrawal of treatment produced highly significant deterioration in behavior, with very large effect sizes—regardless of whether children were receiving a concurrent medication regimen. A subsequent investigation removed the behavioral treatment in a BABAB design (Pelham, Burrows-MacLean, et al., 2005) and again showed large and significant effects of the STP treatment. The latter study compared the STP treatment package to moderate to high doses of stimulant medication (methylphenidate) and showed that the effects were comparable. Notably, on a measure of probability of reaching children's individualized daily goals, the behavioral treatment package produced far greater incremental improvement than did medication. In these and other studies, the impact of the STP treatment package is comparable to moderate to high doses of stimulant medication (e.g., Fabiano et al., 2007; Pelham, Burrows-MacLean, et al., 2014; Pelham et al., 2016).

These results from crossover studies have also been replicated in a randomized trial with 152 children with ADHD (see complete description below), in which no behavioral treatment, standard STP treatment, and a lower intensity, modified version of the STP package (i.e., behavioral feedback without points, DRC with daily and weekly contingencies, sit-outs rather than escalating–deescalating time-outs, no individualized programming, weekly rather than daily parental rewards, weekly rather than daily social skills training) were compared for 3 weeks with random assignment to treatment groups. Subjects who received the STP treatment—both the standard and the lower intensity conditions—were significantly superior to those who did not receive behavioral intervention on objective indices of functioning (Pelham et al., 2016). The standard treatment package was modestly superior to the reduced intensity package; larger differences between the two conditions were apparent in the absence of medication. Thus, the between-groups findings from this study replicate the within-subjects findings from this and previous studies in the context of the STP.

Studies have also evaluated the incremental contributions of individual treatment *components* of the STP (see Pelham, Fabiano, Gnagy, et al., 2005, for complete list and further discussion of component studies). One such study investigated the incremental benefit of including time-out in the treatment package (Fabiano et al., 2004), and found that the inclusion of time-out resulted in significant reductions of aggressive and noncompliant behavior. The classroom-based components of the STP (e.g., Fabiano et al., 2007) have also been shown to result in clinically and statistically significant improvements compared to a control condition across a variety of measures (e.g., disruptive behavior, teacher ratings, and classroom rule violations) with moderate to large effect sizes. These studies included a stimulant medication comparison condition and showed that the behavioral package produced effects comparable to moderate doses of methylphenidate (e.g., 0.3 mg/kg/dose).

In the recreational (nonclassroom) setting, one explicit goal of the STP is to increase the children's knowledge of sports rules and improve sports skills, and to encourage children to exhibit appropriate sportsmanship. The success of this approach is illustrated by improved sports skills, increased attention to game situations, and decreased unsportsmanlike behaviors in the context of the STP (Chronis et al., 2004; Pelham, Burrows-MacLean et al., 2014)—again with effects comparable to those produced by medication (e.g., see Figure 13.2). In a between-groups study, children who received the STP displayed more improvements in sports knowledge and fundamental skills than did children who did not attend the STP (O'Connor et al., 2013).

Additional uncontrolled studies across many STPs and sites have provided supporting data. In a pre–posttreatment evaluation, Pelham and Hoza (1996) reported on 258 boys who participated in STPs over a 6-year period. From pre- to post-STP, significant improvements were found in parent and staff ratings of ADHD and associated symptoms, impairment, improvement in multiple functional domains, and child ratings of self-perception. Results were consistent across demographic, diagnostic, and socioeconomic moderators (e.g., comorbid aggression, single- vs. two-parent household, family socioeconomic status [SES]). Since these variables often reduce the impact of psychosocial treatment, the fact that they did not moderate response to the STP is noteworthy. In the STPs conducted as part of the Multimodal Treatment Study of Children with ADHD (MTA; Pelham et al., 2000), the effects of the STP alone were so large that only minimal effects of additional medication were obtained during that phase of the study. Positive results of the STP have been replicated in five different STP sites—in both university and community settings (Pelham, Fabiano, Gnagy, et al., 2005). Similar positive outcomes have been reported in a Japanese setting (Yamashita et al., 2010).

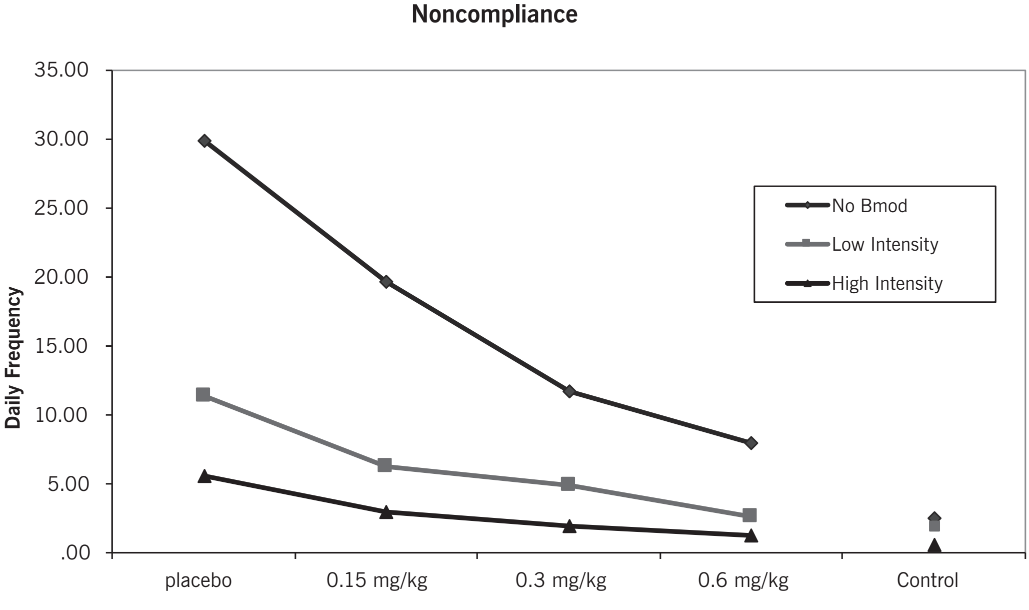

FIGURE 13.2. Daily noncompliance as a function of behavioral treatment and medication Data from Pelham, Burrows-MacLean, et al. (2014).

PreK and adolescent modifications have been evaluated in uncontrolled studies (Graziano et al., 2014; Sibley et al., 2011, 2012) and have shown benefits. Controlled evaluations of these programs have recently shown promising preliminary outcomes (e.g., Hart et al., 2016). Finally, the STP has been included as a component of the psychosocial treatment package in two large National Institutes of Health clinical trials (August, Realmuto, Hektner, & Bloomquist, 2001; MTA Cooperative Group, 1999).

A major difference between the STP and other programs is that the dropout rate is extremely low, with a completion rate of 98% (Pelham, Fabiano, Gnagy, et al., 2005). Daily attendance is routinely near 100%. Pelham and Hoza (1996) documented that the dropout rate in the STP is similarly low across family characteristics that are reliably associated with poor adherence to treatment. *A prerequisite to a successful long-term intervention for a chronic disorder such as ADHD is successful completion of the initial stage of treatment, and the STP virtually ensures the initial treatment completion.*

Perhaps contributing to the high rate of treatment completion, participants in the STP are overwhelmingly satisfied with the intervention. Pelham and Hoza (1996) and Pelham, Fabiano, Gnagy, et al. (2005) report very high parent satisfaction rates at six different STP sites across the United States. Parents routinely rate the STP as superior to other mental health services in which they have been involved. The high rate of consumer satisfaction has also been replicated in the two large studies in which the STP has been utilized as a component (August et al., 2001; Pelham, et al., 2000).

Finally, additional evidence for the benefit of the STP can be found in studies of the behavioral treatment in combination with stimulant medication. Several of the studies we reviewed earlier have included combined treatment conditions and have enabled evaluation of the STP as a component of multimodal treatment, including crossover studies comparing the single and combined effects of behavior modification and stimulant medication. The most recent studies (Fabiano et al., 2007; Pelham, Burrows-MacLean, et al., 2005, 2014, 2016) have documented a finding of major importance in ADHD treatment. These studies have involved crossover studies of (1) behavioral treatment in the STP with weekly or triweekly crossovers and (2) multiple doses of stimulant medication manipulated in daily repeat crossovers. Results have shown that if the STP behavioral treatment—either the lower intensity or the standard condition—is in place, then (1) the effect of medication is maximized at a very low methylphenidate dose (0.15 mg/kg/dose) that is insufficient when used alone and that produces no side effects, and (2) the effect of the multimodal intervention is equivalent to a considerably higher dose of medication (0.6 mg/kg/dose) alone. Given the growing concern regarding long-term side effects associated with long-term stimulant use (Swanson et al., 2007), this finding has important implications for chronic intervention with children with ADHD.

Overall Evaluation of the Treatment

In summary, numerous evaluations of the STP have documented program efficacy and effectiveness. Multiple studies utilizing different types of controlled designs, with measures from multiple settings, domains, and sources, provide detailed documentation of improvements. Notably, these changes are found in behaviors related to functional impairments (e.g., peer relationships, compliance with adult commands, academic work completion). These domains are the putative mediators of long-term outcomes among children with ADHD (Pelham, Fabiano, & Massetti, 2005; Pelham & Fabiano, 2008), and are therefore critical as treatment targets and goals. Furthermore, in a large number of these studies, the effects of the STP treatment are comparable to the effects of stimulant medication, a well-established intervention for ADHD. Finally, these changes have been obtained by multiple investigators across multiple summers, samples, and staff members implementing the STP in both university and community settings.

A final benefit of the STP is that it serves as a training site for students who are future mental health, health, and educational professionals. Across years and sites, more than 3,000 undergraduate students, graduate students, special education students, teachers, and mental health workers have worked in the STP. Students who receive training in the STP often go on to graduate or medical school and subsequent faculty positions, or applied mental health or educational positions. This includes, to our knowledge, more than 110 faculty members in university settings, and many times that number in applied settings. All leave the STP trained in state-of-the-art behavior modification strategies for treating ADHD and other childhood problems, and they apply this knowledge across academic, educational, and mental health settings. Many students say that the STP experience was the best of their training careers, and they virtually unanimously recommend it to others.

EVIDENCE REGARDING IMPLEMENTATION IN PRACTICE

Replications in Clinical Practice

An important question regarding a comprehensive intervention such as the STP is whether it can be replicated in clinical practice. The STP was developed as a clinical intervention and has been routinely offered in clinical settings. For example, at the University of Pittsburgh, it was conducted through the base service unit of the county mental health system that was operated by the Department of Psychiatry of the University of Pittsburgh Medical Center. As such, the procedures utilized (e.g., intakes, treatment plans, progress monitoring and recording, staffing requirements, client reports), fees charged, payment structures (insurance, self-pay, or Medicaid), and regulations governing the STP were those required by the county mental health system, with oversight from the state and the Joint Commission on the Accreditation of Healthcare Organizations. Thus, even the STP at the Western Psychiatric Institute and Clinic, which has been widely viewed as an academic endeavor, reflected real clinical practice in a psychiatric outpatient setting. In 1994, three community agencies in towns surrounding Pittsburgh received foundation grants to establish STPs. They have conducted them since that time, operating up to 29 STP sites around western Pennsylvania, with predominantly a Medicaid client base. Following this model, several community agencies in western New York and New York City operated STPs using the same mechanisms that they use to fund other services. Other STPs operate via self-pay only. Thus, STPs in various states and settings are paid through a combination of self-pay, Medicaid, scholarships via private donations, and third-party payers.

In addition to community sites, leading universities and medical centers in North America have operated STPs in departments of psychiatry, pediatrics, and psychology (e.g., The Cleveland Clinic, New York University, University of Alabama Birmingham, Vanderbilt University, Emory University, University of Illinois–Chicago, Dalhousie University, Royal Ottawa Hospital, Kansas City–Children's Mercy Hospitals and Clinics, University of California at Irvine, State University of New York at Buffalo, University of North Carolina at Greensboro, Florida International University, and Cincinnati Children's Hospital). All of these programs have been clinical services, and the majority continue to be offered. In all, the STP has been replicated in clinical practice at more than 30 independent sites in locations ranging from medical centers to community mental health agencies and private practices. The program has been translated to Japanese and has been implemented for 10 years in that country in a partnership between a university (Kurume) department of pediatrics and the local school system (Yamashita et al., 2010). Internally, our group has replicated the STP for 35 years at multiple sites and with different staff members each time. As documented by the program evaluations we reported earlier, the results across years and sites on a variety of measures have been uniformly positive.

Addressing Barriers to Implementation

The most basic requirement of programmatic replication and implementation in practice is that the procedures are completely documented, and we have done that for the STP. We have made available the manual and materials necessary to track a child's progress at a very low or no cost. We have provided consultation and training in the first year of operation for many of these STPs. Each summer, a weeklong, intensive training session is provided at low cost by experienced STP staff members. An online workshop for interested sites is also available at *http://ccf.fiu.edu*. Arrangements regarding materials and/or training can be made with us at *http://ccf.fiu.edu*. After initial training, sites have typically taken over complete responsibility for their STPs.

The format of the STP removes some of the well-known barriers to treatment associated with poor response and early termination in ADHD and associated disorders (Pelham & Fabiano, 2008; Pelham & Hoza, 1996; Pelham, Fabiano, Gnagy, et al., 2005). For example, group parent training sessions are conducted in the evenings and include structured child care activities. Daily contact between counselors, parents, and children maximizes the therapeutic alliance that professionals and parents must have for success in a long-term model of treatment. The fact that almost all the children enjoy attending the STP (Pelham & Hoza, 1996) no doubt contributes to the fact that treatment completion is high. Finally, summer day camps are ubiquitous in every community in North America to provide summer activities for children in a manner that allows parents flexibility for their own schedules. By structuring the STP with the hours and length of a typical summer camp, we have adapted the STP as a mental health service to match what is available for typical children in the summer. We believe that this approach removes a major barrier to treatment—making services fit with family schedules.

Barriers exist not only for families but also for agencies, and the STP addresses some potential barriers. The STP can be adapted to almost any setting where appropriate facilities (e.g., field space, classrooms) and resources for follow-up are available, including mental health centers, schools, group private practices, and hospitals. The STP package can also be adapted for use in a variety of other treatment settings. Providers have modified and integrated STP components into other services they routinely offer, such as afterschool programs, recreation programs, wraparound services, school-based services, and summer school (Frazier, Chacko, Van Gessel, O'Boyle, & Pelham, 2012; O'Connor et al., 2012). A major benefit for agencies is that training in evidence-based behavioral interventions that their staff receive in the STP carries over to their other services, improving program implementation agency-wide.

The STP and afterschool program currently offered by the Center for Children and Families (CCF) at Florida International University are funded by the Children's Trust (CT) of Miami–Dade County, a publicly funded agency that provides funding for children's services. Two of the major initiatives of the CT are summer- and afterschool programming for children; the CT funds hundreds of agencies in Miami to provide these services. The CT emphasizes projects that support children with disabilities and economic need, and the CCF's summer and afterschool programs are funded under those umbrellas at public school sites. This is an excellent example of a university-developed program becoming an integral part of a publicly funded entity's services for children and youth in a major U.S. city.

A major barrier to implementation of the STP in clinical practice is that the prevailing model of mental health services for children—weekly individual therapy in a clinic for 3–4 months—is incompatible with the approach that is explicit in the STP model. There is an enormous mismatch between the contemporary models of mental health services and the treatments that have an evidence base for ADHD and the other DBDs. These disorders require intensive and ongoing interventions for many, if not most, children. For example, it has been estimated that a typical child with ADHD has nearly a half-million negative interpersonal interactions annually (Pelham & Fabiano, 2008). This means that an 8-year-old child referred for peer problems has a long history of maladaptive learning with regard to peer relationships. It is silly for mental health professionals to assume that a brief intervention (e.g., 12 weekly, one-to-one sessions of individual counseling or social skills training) will have a sufficient impact on such a strong learning history of maladaptive skills. Instead, intensive summer programs and similar services delivered in schools, after school, and on weekends would appear far more likely to impact this domain positively. Agencies that wish to provide benefit for a child with ADHD must adapt their structure, facilities, and staffing patterns to offer these more appropriate and evidence-based services.

FUTURE DIRECTIONS

There is a very strong evidence base for the short-term effectiveness of the STP. As is the case with all other interventions—both psychosocial and pharmacological—for childhood mental health disorders, there is considerably less evidence for the long-term impact of the STP in treated children. As have others, we have argued that systematic plans for maintenance need to be implemented by parents and teachers in order to maintain acute behavioral treatment effects (Fabiano et al., 2009; Pelham & Fabiano, 2008).

We have reviewed elsewhere the evidence for behavioral treatments in ADHD and directions for future research (Pelham & Fabiano, 2008). In our view, the area most in need of further research is this question of how to maintain effects over time. Translated into practice, this means how to get families and schools to continue the short-term interventions that have proven effectiveness. ADHD is a chronic disorder, and interventions for most children need to be continued in one form or another for very long time periods—perhaps never ended but modified across developmental stages. We have not systematically investigated the effects of follow-up interventions, but we have employed several different types in our clinical practice. One is a 3-hour Saturday Treatment Program (SatTP) that employs the STP recreational procedures. We and others have offered after-school programs that employ the same procedures. We also routinely employ follow-up school consultations to establish DRCs in the classrooms to which children return after the STP, as well as the option for parents to attend booster parent training groups. Our only systematic evaluation of follow-up intervention shows that compared to treatment as usual, providing parent boosters and school DRC consultation after an STP results in a substantially lowered probability of needing stimulant medication during the subsequent school year (Coles et al., 2016). Another study showed that beginning treatment for children with ADHD with behavioral interventions (parent training, school consultation) is more effective and less costly than beginning treatment with stimulant medication (Pelham et al., 2016; Page et al., 2016). Furthermore, in those studies, substantial portions of the sample were sufficiently treated with relatively low "doses" of intervention. Thus, key areas of future research are how best to initiate and sequence treatments, what "dose" of psychosocial intervention to employ at what stage of treatment, and how to incorporate long-term follow-up treatments and maintain families and teachers in some form of active intervention over the child's lifetime.

One other clear need for future research is intervention for adolescents with ADHD. It is perhaps unsurprising given the paucity of treatment research on adolescents with ADHD that the adolescent version of the STP is understudied. Since it is becoming clear that the vast majority of children with ADHD continue to have problems with peers, academics, and parents in adolescence, such work is clearly needed.

CONCLUDING COMMENTS

We have described the STP, including the intervention, fidelity procedures, outcome measures, and studies supporting its short-term effectiveness. Perhaps reflecting our confidence in its impact on children with ADHD, the STP has received numerous awards. In 1993, it was selected in a national competition as one of 20 Model Programs for Service Delivery for Child and Family Mental Health by the Section on Clinical Child Psychology (Section 1, Division 12) and Division of Child, Youth, and Family Services of the American Psychological Association. In 2003, the STP was named Innovative Program of the Year by Children and Adults with ADHD (CHADD), a national advocacy organization for people with ADHD.

Effective treatment for ADHD needs to follow a comprehensive, chronic care model: implementation across domains (peer, family, school); conducted long-term; focused on functional impairment rather than DSM symptoms; responsive to family needs; and relatively more intensive than currently common models in the mental health field. As we outlined earlier, STPs add to this model of intervention by offering the potential for unique combinations of treatment components that focus on peer, academic, and home domains, and that make treatment especially palatable for families and therefore more likely to be continued in a chronic care model than current treatments for ADHD. Competencies such as sports skills that are necessary for children to function well in peer group settings can be intensively taught in STP contexts. Academic intervention can be given that adds 80 hours to the 200–250 hours during which children are typically on-task in academics during the school year. Parent training can be offered in a setting that doubles the probability of attendance compared to traditional clinic-based training. The STP packs 380 hours of child treatment, sports skills training, academic intervention, and parent training into an 8-week period. We believe that such comprehensive regimens are needed to change the long-term trajectory of most children with ADHD.

ACKNOWLEDGMENTS

The research reported in this chapter was supported by grants from the National Institutes of Health (Nos. MH50467, MH53554, MH062946, MH048157, MH069434, MH080791, MH045576, MH069614, MH085796, MH099030, AA11873, DA12414), the Institute of Education Sciences (Nos. L03000665A, R32 4B060045, R32 4A120136, R32 4A120169), Head Start (Research Grant Nos. 90YR0017, 90YR0037), the McCune Foundation, the John R. Oishei Foundation, and the Children's Trust.

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SECTION C

OTHER DISORDERS AND SPECIAL APPLICATIONS

CHAPTER 14

Developing and Testing Interventions for Suicidal and Nonsuicidal Self-Injury among Adolescents

Anthony Spirito, Christianne Esposito-Smythers, and Jennifer Wolff

OVERVIEW OF THE CLINICAL PROBLEM

Suicidal behavior and nonsuicidal self-injury (NSSI) are significant public health problems. Suicide is currently the second leading cause of death among adolescents. In 2014, 1,295 adolescents (ages 12–17) died by suicide in the United States. This equates to a crude rate of 5.18 deaths per 100,000 adolescents (Centers for Disease Control and Prevention [CDC], 2015). "Suicide attempts," defined as self-harm inflicted with at least *some* intent to die (e.g., self-poisoning, severe cutting, hanging/suffocation, jumping from heights, use of firearm; Nock, 2010), significantly increase risk for death by suicide. In a nationally representative survey of adolescents that employed structured psychiatric interviews (National Comorbidity Replication Adolescent Supplement [NCS-A]), 4.1% of adolescents reported a lifetime suicide attempt (Nock et al., 2013). Higher rates are reported in studies that use anonymous self-report instruments. According to data from the Youth Risk Behavior Surveillance System (YRBSS) survey, which is administered to high school students across the United States, 8% of adolescents reported a suicide attempt in the previous year (Kann et al., 2014). Many adolescents make more than one suicide attempt. Adolescent suicide attempters are almost 18 times more likely to attempt suicide again compared to those who have never made an attempt (Lewinsohn, Rohde, & Seeley, 1994). It is estimated that up to 11% of adolescent attempters eventually die by suicide (Ho, 2003).

NSSI, defined as self-harm inflicted in the *absence* of any intent to die (e.g., cutting/carving on skin, burning, head banging, self-hitting, scratching to the point of drawing blood), is more common than suicidal behavior (Nock, 2010). A systematic review of international research on adolescent NSSI found an average 12-month prevalence rate of 19% (Muehlenkamp, Claes, Havertape, & Plener, 2012). This rate was higher when a checklist of items was used (28.4%) to assess NSSI relative to a single item (9.6%). Rates of both NSSI and suicide attempts are higher in clinical than epidemiological or community-based samples, as NSSI often precipitates treatment referrals (Asarnow et al., 2011). NSSI occurs more frequently and repetitiously than suicide attempts across all types of studies (Hamza, Stewart, & Willoughby, 2012).

Notably, NSSI and suicide attempts show a similar clinical course and commonly co-occur in clinical adolescent samples. Both behaviors are rare prior to the age of 11–12 and rise precipitously during adolescence (Nock et al., 2013). Approximately one-third of adolescents who engage in NSSI report a lifetime suicide attempt (Asarnow et al., 2011). Indeed, NSSI is a robust predictor of suicide attempts, particularly among adolescents with more severe and frequent NSSI (e.g., Asarnow et al., 2011; Hamza et al., 2012). NSSI also occurs more frequently among adolescents with a more severe suicide history (e.g., multiple attempts; Esposito, Spirito, Boergers, & Donaldson, 2003) and is associated with slower remission of suicidal ideation after discharge from psychiatric hospitalization (Prinstein et al., 2008). In the large, multisite Treatment of SSRI-Resistant Depression in Adolescents Study, NSSI and suicide attempts co-occurred in 14% of the sample, and these youth reported the highest levels of suicidal ideation, depression, hopelessness, family conflict, and histories of physical or sexual abuse. NSSI was a significant predictor of suicide attempts through Week 24, and a stronger predictor than baseline suicide attempt history (Asarnow et al., 2011). A history of attempts at baseline also predicted NSSI incidents over the 24-week treatment trial, suggesting that making attempts may also increase NSSI risk (Asarnow et al., 2011). Thus, interventions designed for youth who engage in self-harm must be able to effectively address both suicidal and nonsuicidal self-harm.

CONCEPTUAL MODEL GUIDING THE TREATMENT PROGRAM

Our cognitive-behavioral model of adolescent suicidal behavior is grounded in social-cognitive learning theory (Bandura, 1986), as well as empirical research, and is based on the presumption that suicidal behavior results from faulty experiences that are reflected in maladaptive cognition, behavior, and emotion (see Spirito & Esposito-Smythers, 2006, for more detailed description of the model). Broadly, we propose that adolescents with predisposing vulnerabilities (e.g., psychiatric disorders, severe trauma, peer victimization, family history of mental health problems) have difficulty effectively processing and managing stressors, due in part to compromised learning histories, which increases their risk for suicide. Specifically, when a significant stressor occurs (e.g., interpersonal conflict, loss, worsening of psychiatric symptoms), in their attempts at processing the stressor, vulnerable adolescents may experience cognitive distortions (e.g., negative thoughts of self, world, and future) and cognitive errors (e.g., catastrophizing, personalization) that increase negative affect. Depending on the degree of distortion and repetitiveness of the stressor, adolescents may attempt to generate solutions to the stressor. However, vulnerable adolescents often have trouble generating multiple solutions. Moreover, when they do generate solutions, they tend to be either ineffective solutions or they are effective but adolescents do not believe in their ability to implement them. This inability to generate and implement effective solutions leaves adolescents feeling "stuck," which further fuels distorted cognitive processing, affective distress (depression, anxiety, anger, etc.), and uncomfortable physiological arousal. In an effort to temporarily relieve their cognitive and affective distress, adolescents may engage in maladaptive behaviors to self-soothe (e.g., NSSI, substance abuse) and push others away to decrease conflict and associated emotional pain (e.g., via aggressive behavior, social withdrawal). The maladaptive behaviors selected are often those that have been modeled by the adolescent's parents, peers, or significant others.

When the initial stressor remains unresolved or additional stressors emerge, as is common when adolescents engage in maladaptive coping behavior, adolescents' cognitive processing becomes even more distorted, and negative affect worsens to the point that adolescents begin thinking about suicide as a viable means of escape from existing stressors and emotional pain. Over time, these thoughts may increase in frequency and adolescents may develop a suicide plan. A subset of adolescents will act on these thoughts and make an attempt shortly after developing the suicide plan. This is most likely to occur among adolescents with a lower threshold for affective distress, greater impulsivity, more social isolation, poorer social support, and availability of the planned suicide method (e.g., pills, razors, firearms), as well as those who are intoxicated. Other adolescents may cycle through this reciprocal cognitive, affective, and behavioral process numerous times, with each cycle leading to greater dysfunction. If this cycle is not interrupted, the adolescent may become hopeless and eventually attempt suicide because it is perceived to be the only viable means of escape from the intense emotional pain.

CHARACTERISTICS OF THE TREATMENT PROGRAM

We selected cognitive-behavioral therapy (CBT) as the primary modality for our treatment work with suicidal adolescents, because it addresses maladaptive cognition, behavior, and affective responses that are postulated in our model. Our treatment program is designed to accommodate the complex symptom presentation of suicidal youth and the heterogeneity of stressors that trigger suicidal behavior. Because adolescents exist within multiple systems (family, peer, school, etc.), and dysfunction within these systems prevents optimal treatment gains, the treatment model includes individual, parent, and family sessions, as well as coordination of services across providers (e.g., psychiatrists, pediatricians) and settings (e.g., schools).

With increasing clinical knowledge, experience with this population, and a stronger research base on which to draw as suicidology science progressed, our treatment model has evolved to a more comprehensive protocol that better addresses the needs of suicidal youth and their families. The first version, referred to here as brief CBT (B-CBT), was a 10-session, individually –focused program delivered by one therapist, and solely targeted suicidal behavior, with a particular focus on problem solving and affect regulation around suicide triggers (Donaldson, Spirito, & Esposito-Smythers, 2005). The second version of the manual, geared toward those with co-occurring suicidality and substance use, was referred to as integrated CBT (I-CBT; Esposito-Smythers, Spirito, Hunt, Kahler, & Monti, 2011) and the current version of the manual is referred to as family-focused CBT (F-CBT). These newer treatment models were designed to better address the growing symptom severity of psychiatrically hospitalized suicidal youth we encountered over a 15-year period and three different treatment trials.

Our program is manualized and includes individual adolescent, individual parent, and family modules (see Table 14.1 for a list of sessions and description of content). For each family, two therapists are assigned, one who works individually with the adolescent and another who works with the parents. The parent therapist leads any family sessions, but both therapists participate in these joint sessions. Some individual sessions are "core" sessions (problem solving, cognitive restructuring, behavioral activation, and affect regulation) that all families receive, and others are "supplemental" and only used as needed (e.g., an exposure session for adolescents with social anxiety). All individual modules can be used with the adolescent or parent to address individual skills deficits, for example, in affect regulation. Parents also have modules specifically designed to improve parenting skills. All sessions are 1 hour in length (with the exception of the introduction to treatment session, which is 90 minutes) and have common components, including a safety check-in (around suicidal ideation, self-harm, substance use, and adherence to medication), homework review, agenda setting, new skills introduction/skills practice, agenda discussion, homework assignment, and parent–teen check-in.

Although core skills are taught in the first portion of the treatment, the protocol is flexible and allows for tailoring of the treatment protocol and management of crises while staying "in-protocol." As the protocol proceeds, therapists typically choose to practice a previously learned skill rather than teach a new skill. Furthermore, though there are many sessions, most build on core skills (e.g., problem solving, cognitive restructuring, affect regulation) to address different problems areas. For example, problem solving is used in the "Building Healthy Social Supports" session to help adolescents generate options for increasing their supports. This was tdone deliberately to facilitate adolescent and parental skills acquisition and generalization, as well as improve ease of training for study therapists and likelihood of dissemination. Motivational interviewing sessions and techniques can be interwoven throughout sessions as needed to enhance treatment engagement.

Consistent with our conceptual model, our program places particular emphasis on problem solving, cognitive restructuring, and affect regulation as foundational skills to address primary suicide and NSSI triggers. For example, when addressing the primary trigger for a suicide attempt, the therapist helps the adolescent identify and define the problem situation, generate potential options, evaluate pros and cons, and select the best option. The therapist then reframes the suicide attempt as a failure in problem solving. This explanation helps provide adolescents with a better sense of control over future problems that arise. The therapist points out

TABLE 14.1. Overview of Treatment Modules in I-CBT and F-CBT Protocols

Name of session	Module	Objective
Introduction to Treatment	Family[a,b]	Orient to treatment program and conduct safety planning
Behavioral Activation	Teen,[a,b] Parent[b]	Decrease sedentary behavior and increase the frequency of healthy pleasant activities
Problem Solving	Teen,[a,b] Parent,[a,b] Family[a,b]	Learn how to generate and evaluate options to problems, and identify the most effective solution
Cognitive Restructuring	Teen,[a,b] Parent[a,b]	Become aware of the link between thoughts and feelings; identify and dispute thinking traps[a,b]
Affect Regulation	Teen,[a,b] Parent[a,b]	Become aware of triggers and signs (physiological, cognitive, and behavioral) of affect arousal and develop coping plan
Relaxation	Teen,[a,b] Parent[b]	Decrease stress through deep breathing, muscle relaxation, and the use of imagination
Motivational Interviewing	Teen,[a,b] Parent[a,b]	Increase awareness of benefits and consequences related to substance use, treatment engagement, or other identified problems to increase motivation for change
Chain Analysis	Teen,[a,b] Parent[b]	Identify and address the sequence of thoughts, feelings, and behaviors that culminate in risky behaviors and poor parenting choices
Assertiveness Training	Teen,[a,b] Parent[b]	Differentiate among communication styles, learn benefits of assertive communication, and when/how to use assertive communication skills
Increasing Social Support	Teen,[a,b] Parent[b]	Identify supporters, learn how to increase support from current support system and add new supporters[a,b]
Planning for Emergencies	Teen,[a,b] Parent[b]	Identify unanticipated situations that place teen risk for making poor decisions and develop a coping plan[a,b]
Coping with Urges	Teen[a,b]	Become aware of triggers for urges (i.e., NSSI, substance use, binging/purging), and learn coping strategies
Alcohol/Drug Refusal Skills	Teen[a,b]	Develop communication skills needed to effectively refuse offers to use alcohol and drugs
Grief	Teen[a,b]	Educate about normal grief symptoms and work through negative thought patterns that get in the way of healing
Parental Monitoring	Parent[a,b]	Teach how to monitor teen behaviors, activities, and friends to help teen avoid risky situations and dangerous moods and behaviors

(continued)

TABLE 14.1. *(continued)*

Name of session	Module	Objective
Attending to Teen Positive Behavior	Parent[a,b]	Recognize and praise the teen for good behaviors
Contingency Management	Parent/Family[a,b]	Identify appropriate limits and set up rewards and consequences to help change teen behavior
Family Communication	Family[a,b]	Learn and practice positive communication skills
Emotion Coaching	Parent[b]	Identify and respond empathically to teen's feelings
Distress Tolerance	Teen[b]	Develop safe, effective coping skills to help tolerate situations that trigger significant negative emotions
Healthy Lifestyle	Teen,[b] Parent[b]	Teach importance of physical health, sleep, nutrition, and exercise in maintaining emotional stability
Trauma Narrative	Teen[b]	Educate about the effects of trauma and encourage exposure to thoughts of trauma through a narrative
Exposure (Anxiety)	Teen[b]	Become aware of triggers for anxiety, identify skills to help manage it effectively, and practice exposures in session
Suicide Ideation/Attempt Risk Assessment	Teen[b]	Conduct risk assessment of current suicidal thoughts and behaviors, and make plans to ensure safety
Skills Practice	Teen,[a,b] Parent,[a,b] Family[a,b]	Practice applying previously learned skills to current problem
Relapse Prevention	Family[a,b]	Review treatment progress, recommendations, and prevention plan, and conclude treatment

[a] Included in the I-CBT manual.
[b] Included in F-CBT.

that many teenagers who attempt suicide pick the only option they think they have, which is to hurt themselves. The therapist emphasizes that the more adolescents practice coming up with a list of "Options," the more potential solutions they have to choose from when distressed, and the less likely they will feel that the only thing they can do is to hurt themselves. The therapist then helps adolescents identify and restructure thoughts that interfere with their ability to effectively carry out optimal solutions to the problem situation, view the situation in a more true/helpful manner, and manage associated emotions. Multiple affect regulation skills are also taught to help adolescents reduce and tolerate distressing physiological sensations and emotions.

EVIDENCE ON THE EFFECTS OF TREATMENT

Early Research Leading to Interventions

Given the state of the literature at the time that we began our research program, our first studies were designed to understand the outcomes for adolescents following a suicide attempt. The first study followed 104 adolescents who had attempted suicide. The large majority were evaluated in a pediatric emergency department (ED) and discharged home, but some were admitted to our inpatient psychiatric unit and then discharged home. A 9% rate of reattempts at 3 months was found for those discharged from the ED, and a 14% rate of reattempts for those discharged from the inpatient unit. About 14% of the sample never attended any outpatient psychotherapy, 14% attended one or two sessions, and about 20% attended three or four sessions (Spirito et al., 1992).

This observed trend of poor adherence to outpatient treatment led to our first intervention study designed to determine whether we could improve follow-through with referrals for outpatient care (Spirito, Boergers, Donaldson, Bishop, & Lewander, 2002). Adolescents treated in our ED for a suicide attempt, who were deemed appropriate to discharge home, were randomly assigned to standard disposition planning or an adherence enhancement intervention using a problem-solving format. The 1-hour experimental intervention in the ED included a review of parent and adolescent expectations and misconceptions about outpatient treatment; a review of factors that could impede treatment attendance; and a verbal contract between adolescent and parent to attend at least four outpatient sessions, the modal number of sessions attended in our naturalistic follow-up study (Spirito et al., 1992).

The adolescents and their parents were also contacted separately by telephone 1, 2, 4, and 8 weeks after discharge; 83% completed all four telephone calls. The telephone sessions were structured to provide support, facilitate problem solving, and help with any obstacles in obtaining care. In the course of this study, we became aware of significant barriers to receiving services in the community that were beyond the family's control, such as being placed on a waiting list for treatment at an agency or difficulties with insurance coverage. When such barriers to treatment were reported, or adolescent or family resistance to treatment was evident, a problem-solving exercise similar to that delivered in the ED was implemented. Findings indicated that participants in the adherence enhancement group attended significantly more treatment sessions than participants in the standard disposition-planning group (mean = 8.4 vs. 5.8 sessions), but only after we controlled for barriers to service in the community.

These findings regarding barriers to treatment following a suicide attempt led to a decision point on how to proceed with this research: We could either try to effect change at a systems level to improve coordination of care from the ED to the community or develop our own brief treatment protocol. We opted for the latter and designed the protocol to consider both the limited number of outpatient sessions typically allowed by insurance companies at that time, and the reality of how many sessions families typically attended following an adolescent's suicide attempt.

B-CBT for Adolescent Suicidal Behavior

Rationale for the Approach

At the time we were proposing our first trial, the literature on the treatment of adolescent suicidal behavior was very limited. Quasi-experimental designs had been used to examine the efficacy of dialectical behavioral therapy (DBT; Rathus & Miller, 2002) and a six-session outpatient family therapy program (Rotheram-Borus, Piacentini, Miller, Graae, & Castro-Blanco, 1994). Both studies had positive effects, but suicidal behavior was still evident at follow-up. In another study of family therapy conducted in Britain, Harrington et al. (1998) found that a home-based family intervention resulted in reduced suicidal ideation compared to routine care, but only for adolescents without major depression. There were no differences in rate of suicide reattempts. In another British study, Wood, Trainor, Rothwell, Moore, and Harrington (2001) found that adolescents who had attempted suicide and received group therapy were less likely to make more than one repeat suicide attempt than adolescents who had routine care (2/32 vs. 10/31), but an Australian study conducted several years later using the same intervention did not replicate these positive results (Hazell et al., 2009).

We developed our B-CBT protocol based on the literature, our clinical work, and data from a recently completed survey of community therapists reporting on psychotherapy delivered to 63 adolescents who required treatment in our ED after a suicide attempt and then were referred for outpatient therapy (Spirito, Stanton, Donaldson, & Boergers, 2002). Two-thirds of the adolescents received some combination of individual plus parent–adolescent sessions, and the remainder received only individual therapy. The average number of sessions attended was seven; 52% attended six or fewer sessions, and 58% of the families dropped out of therapy against medical advice. Supportive psychotherapy techniques were reported by about three-fourths of the therapists, with psychodynamic and cognitive techniques reported by about half of the therapists. Based on these data, supportive relational therapy (SRT) was selected as the comparison condition to our B-CBT protocol in our first randomized controlled trial (RCT), a 10-week acute treatment protocol (Donaldson et al., 2005).

Randomized Controlled Trial

B-CBT was compared to SRT in a sample of 39 adolescents (ages 12–17 years) who presented to a general pediatric ED or the inpatient unit of an affiliated child psychiatric hospital following a suicide attempt. Adolescents reported high rates of psychiatric disorders (71% major depressive disorder, 55% disruptive behavior disorder, 55% alcohol use disorder, and 17% cannabis use disorder) and half reported more than one suicide attempt. The SRT was adapted from Brent and Kolko's (1991) *Supportive Relationship Treatment Manual.* It employed nondirective techniques in an unstructured fashion to address mood and behavior difficulties, as well as individual and environmental factors that contribute to adolescent suicidal behavior. The SRT protocol followed the same session safety check-in procedure, format (six individual sessions and one family session, supplemental family and crisis sessions), and length (session and treatment duration) as the B-CBT protocol but did not include any specific skills instruction or homework assignments. Both treatments were delivered weekly in an individual format for 3 months and once per month in the third through sixth months. Seven different therapists provided both the CBT and SRT treatments in order to control for therapist effects.

B-CBT and SRT were associated with comparable reductions in suicidal ideation and depressed mood at both 3 and 6 months, with no between-group differences. Six adolescents (15%) reattempted suicide over the course of 6 months, with no differences across conditions. Families in both conditions attended an average of nine sessions.

Lessons Learned

Based on the literature, our own longitudinal studies, and the limited number of outpatient sessions that insurance companies were allowing in the dawning of the era of managed care, our first treatment protocol consisted of 10 sessions. Surprisingly, the majority of the families completed the entire protocol, and many asked to continue in therapy. Why was that? In both conditions, the early sessions in the protocol emphasized the importance of attending therapy, something rarely done in community practice. More importantly, clinical trials do not have the types of service barriers (e.g., the waiting lists and inflexible scheduling) often encountered in the community (Spirito et al., 2002). Also, our therapists had small caseloads, and we were invested in keeping families in therapy. Therapists in both conditions had weekly supervision over the course of the trial, a factor that has been shown to be important in treatment outcome in other trials of difficult-to-treat patients (Linehan, 1993). Supervision also helps ensure treatment integrity in both conditions, and a consistent therapeutic orientation, regardless of the approach, has been suggested as a factor in positive outcomes of treatment (Kolko, Brent, Baugher, Bridge, & Birmaher, 2000). Finally, the same therapists conducted both treatments. Nonspecific therapist factors (e.g., therapist warmth and genuineness) may have led to improvement in both conditions (Norcross, 2011). In addition, our therapists consisted of postdoctoral fellows and junior faculty in an academic medical center, with more training than the therapists with a master's degree who often are the front line in providing psychotherapy with difficult populations in the community.

I-CBT for Adolescents with Suicidality and Substance Abuse

Rationale for the Approach

Around the time we were considering our next steps, the push to conduct studies with fewer inclusion–exclusion criteria was becoming prominent. In addition, there was a burgeoning interest in looking at combined treatment for adolescents with both psychiatric and substance use problems. We had conducted a review of the literature that included virtually no treatment research on substance use and suicidal behavior among adolescents (Esposito-Smythers & Spirito, 2004). Yet studies indicate that substance use increases risk for adolescent suicidal behavior (e.g., Wong, Zhou, Goebert, & Hishinuma, 2013).

Based on our review of the literature, we speculated that for some adolescents, the acute effects of intoxication might heighten impulsive behavior, increase aggressiveness, and inhibit the generation and implementation of adaptive coping strategies, which in turn might result in suicidal behavior. For internalizing adolescents, substance use may serve as a means of self-medication for distressed mood and result in a suicide attempt if substance use does not improve affect (Esposito-Smythers & Spirito, 2004). The I-CBT protocol we designed for our next RCT was flexible enough to address substance use, regardless of its underlying etiology, as well as emotional and behavioral problems.

The I-CBT protocol was informed by results of an open pilot trial (Esposito-Smythers, Spirito, Uth, & LaChance, 2006). This initial protocol incorporated individual sessions to address substance use but only had a few family sessions and no parent training sessions. Those enrolled were referred to outside providers for family therapy. While this protocol was associated with reductions in suicidal ideation and substance use, two adolescents reattempted suicide over the course of treatment. Outside family therapists provided conflicting treatment recommendations with those of study therapists, which complicated treatment, and it was clear that parents did not have the skills needed to manage or monitor their adolescents' suicidality or substance abuse. Therefore, we moved to a two-therapist model (adolescent and parent/family therapist) and added parent training and additional family sessions to the protocol.

Randomized Controlled Trial

In an RCT, I-CBT was compared to standard care that was augmented with case management services and medication management (enhanced standard care [ESC]). Because almost all of the adolescents were prescribed a variety of medications during their inpatient admission, it was not clinically or ethically defensible to require them to be medication free. Instead, patients in both conditions were prescribed medications by the study child psychiatrist. Participants included 40 adolescents recruited from our psychiatric inpatient unit with suicidality (clinically significant suicidal ideation in the last month or a suicide attempt in the last 3 months) and a co-occurring substance use disorder (alcohol and/or marijuana). Members of this sample were depressed for an average of 3.2 years (86% were diagnosed with major depressive disorder) and had multiple comorbidities (17% generalized anxiety, 34% social anxiety, 20% posttraumatic stress, 34% conduct, 37% alcohol abuse, 28% alcohol dependence, 29% marijuana abuse, and 54% marijuana dependence disorders). All adolescents reported clinically significant suicidal ideation, and 75% reported a suicide attempt at baseline (43% had multiple attempts).

In the I-CBT protocol, participants who completed at least an acute dose of outpatient treatment, equivalent to 24 sessions for adolescents and 12 sessions for parents, were defined as "treatment completers." Based on these criteria, approximately 74% of adolescents, 90% of parents, or 74% of families (M = 34.3 sessions, range = 11–48) randomized to I-CBT were treatment completers. Using these same criteria, approximately 44% of adolescents, 25% of parents, or 19% of families (M = 19.9 sessions, range = 0–41), randomized to the ESC condition would be considered treatment completers. Notably, dose of treatment was not associated with outcomes.

At 18-month follow-up from baseline, relative to ESC, I-CBT resulted in significantly fewer suicide attempts (5.3 vs. 35.3%), rehospitalizations (15.8 vs. 52.9%), and emergency department visits (15.8 vs. 58.8%). No participants in I-CBT were placed in residential treatment compared to three in ESC. These data point to a significant cost savings in the I-CBT group. Remission of psychiatric disorders diagnosed at baseline and reassessed at 18 months was, overall, higher in I-CBT than in ESC, with medium to large effect sizes across conditions. Moreover, I-CBT was associated, on average, with a more than 50% reduction in the expected number of heavy drinking days and a more than 60% reduction in the expected number of marijuana use days over time compared to ESC. I-CBT relative to ESC was also associated with greater reductions in marijuana-related problems over time. Adolescents across conditions showed comparable reductions in suicidal ideation, drinking days, and alcohol-related problems (Esposito-Smythers et al., 2011).

Lessons Learned

The cost savings, with respect to rehospitalizations and ED visits, easily justify the two-therapist treatment approach we used in this trial. However, we quickly learned that adding substance use to suicidality resulted in a very high level of patient acuity. This study was the equivalent of running a high-risk clinic with 24/7 coverage. The amount of time and effort necessary to manage both the research components of the project and the clinical demands of the patients precluded us from being able to control the treatment of the comparison group.

With respect to substance use, our effects were on heavy volume alcohol use, marijuana use, and marijuana-related problems, but there were no significant effects on drinking days. This may reflect the philosophy of the protocol; much greater emphasis was placed on decreasing volume of alcohol intake than on abstinence given that risk for suicidal behavior increases when adolescents are intoxicated (Esposito-Smythers & Spirito, 2004). We have found in all our work that convincing adolescents of the problems associated with excessive alcohol use is much easier than convincing them about the risks of marijuana use. Systematic monitoring of substance use, via urine drug screens, may have also affected substance use. However, we did have a few adolescents for whom random urine drug screens (UDS) resulted in a decrease in marijuana and other drug use, because those substances could be detected, but an increase in alcohol use, as we were unable to monitor alcohol in our urine testing. Concerns about iatrogenic effects of UDS need to be considered in both clinical care and clinical research.

FUTURE DIRECTIONS

Based on our findings with the I-CBT protocol, we have explored over the last seven years, via treatment development grants, whether this modular protocol might be adapted for use with other populations. We have (1) added a concurrent CBT intervention for depressed parents to I-CBT for depressed suicidal youth to determine whether this improved outcomes over youth treatment alone (Spirito et al., 2014); (2) added an exercise/healthy lifestyle component to I-CBT to determine whether it improved depression outcomes compared to I-CBT alone in overweight, depressed adolescents (Jelalian et al., 2016); (3) compared I-CBT to sequential treatment of depressed mood and behavior problems in older children (Wolff, Garcia, Frazier, Seaboyer, & Spirito, 2016); (4) integrated core I-CBT skills with HIV prevention skills into a family-based suicide, substance abuse, and HIV prevention workshop for youth in mental health treatment and compared it to an assessment-only control condition (Esposito-Smythers, Hadley, Curby, & Brown, 2017); and (5) compared I-CBT integrated with HIV prevention to standard care for court-involved youth and their families (follow-up under way; Christianne Esposito-Smythers, Co-Principal Investigator).

An important future direction is how to best treat, within the context of one protocol, the broad range of even more acute and impairing psychopathology seen among psychiatrically hospitalized adolescents over the course of 15 years and our multiple clinical trials (see Table 14.2). Our research group is in the process of testing such a comprehensive treatment protocol, F-CBT, that is designed for suicidal youth with multiple comorbidities and complex presentations, those with a mood disorder and either a suicide attempt, NSSI, and/or a substance use disorder (Grant No. 1R01 MH 099703). As described earlier, it has a greater parent training and family focus than our prior protocols. F-CBT also attempts to better address severe affect dysregulation common to suicidal youth with NSSI, via individual, parent training, and family work.

We are comparing F-CBT to standard outpatient care in an RCT. We have completed the randomization phase (n = 130), but follow-up data are still being collected at this writing. Members of the sample reported suicidal ideation on about half of the days over the month prior to enrollment in the study, with two-thirds having both made a suicide attempt (mean age at first attempt was around 13) and having a friend who attempted suicide. Lifetime NSSI was reported by 90% of the sample, and about three-fourths reported NSSI in the month prior to admission. The presenting problems of this group are much worse than those in our prior studies and indicate a group of patients at high-risk for repetitive self-harm.

A major challenge for future research is the clinical management of such high-risk patients within the context of a specified treatment protocol. Though it is rare, death by suicide is a very real possibility in trials with depressed and suicidal patients. Though more common in trials with adults, suicides also occur in studies with adolescents. These very suicidal patients, however, are our field's Stage IV patients, to use an analogy from cancer treatment research, and they have been underrepresented in empirical research. For the most severe cases, chronic care models may be most appropriate. For example, typical clinical trials, including our own, prescribe a limited number of therapy sessions and/or months in treatment, after which participants are transferred for ongoing care. This research procedure made sense when single-symptom, low acuity patients were the focus of treatment trials. But with our most psychiatrically impaired patients, this approach does not match the chronicity of the symptomatology. A chronic care design may not pass the muster of grant reviewers, but it is clearly a model of care that needs to be examined in future research.

Another major focus of future research in this area is the dissemination and implementation of comprehensive evidence-based treatment protocols in real-world

TABLE 14.2. Overview of Studies with Suicidal Adolescents

Study	Sample	Demographics	Therapists and fidelity	Treatment conditions	Suicide variables	Suicide results
Donaldson et al. (2005)	Recruited from emergency department and inpatient psychiatric unit; 100% SA	N = 39; age: 12–17; gender: 82% female; race: 85% white, 10% Hispanic, 5% black	B-CBT and SRT: Master's- and doctoral-level psychologists; trained by author; weekly supervision and audiotape review; fidelity ratings completed	B-CBT (n = 15); sessions = 9.7 (SD = 2.4) SRT (n =16); sessions = 9.5 (SD = 1.3)	SI: Suicidal Ideation Questionnaire—Senior; SA: structured follow-up interview	Equivalent reductions in SI at middle and end of treatment (3 and 6 months postbaseline) across CBT and SRT groups. No difference in SA.
Esposito-Smythers et al. (2011)	Recruited from inpatient psychiatric unit; 75% SA, 100% SI, 100% SUD (63.9% alcohol, 83.3% cannabis)	N = 36; age: 13–17; gender: 67% female; race: 88.9% white; 13.8% Hispanic	I-CBT: Master's- and doctoral-level psychologists; trained by author; weekly supervision and audiotape review; fidelity ratings completed	I-CBT (n = 19); sessions: M = 45.7 (SD = 15.7) TAU (n = 17); session: M = 24.6 (SD = 13.2)	SI: Suicidal Ideation Questionnaire—Senior; SA: K-SADS-PL; other: child and adolescent services assessment	I-CBT had fewer SAs, psychiatric hospitalizations, and emergency department visits at 6-month follow-up (18 months postbaseline). No difference in SI.
Spirito et al. (2014)	Recruited from inpatient psychiatric unit or partial hospitalization program; outpatient; Met criteria for MDD and endorsed SA, NSSI, or SUD	Age: 12–18	F-CBT: Master's-level community therapists; trained by author; weekly supervision and audiotape review; fidelity ratings completed	F-CBT (projected n = 60) TAU (projected n = 60)	SI: Suicidal Ideation Questionnaire—Senior; SA: Columbia Suicide Severity Rating Scale; other: child and adolescent services assessment	In progress
Spirito et al. (2014)	Recruited from community clinic; require in-home intensive outpatient services; met criteria for SUD plus a comorbid psychiatric disorder	Age: 12–18	F-CBT: Master's- and doctoral-level psychologists; trained by author; weekly supervision and audiotape review; fidelity ratings completed	F-CBT (projected n = 60) TAU (projected n = 60)	SI: Suicidal Ideation Questionnaire—Senior; SA: Columbia Suicide Severity Rating Scale; other: child and adolescent services assessment	In progress

Note. SI, suicidal ideation; SA, suicide attempt; NSSI, nonsuicidal self-injury; SUD, substance use disorder; MDD, major depressive disorder; B-CBT, brief cognitive-behavioral therapy; SRT, supportive relationship therapy; I-CBT, integrated cognitive-behavioral therapy; F-CBT, family-focused cognitive-behavioral therapy; TAU, treatment as usual; K-SADS-PL, Kiddie Schedule for Affective Disorders and Schizophrenia for School-Age Children—Present and Lifetime Versions.

settings. Along these lines, we are also currently using our F-CBT protocol (Grant No. 1R01AA020705) in a community mental health clinic intensive outpatient program (IOP) for adolescents with co-occurring substance use and psychiatric disorders, many of whom have suicidal thoughts and NSSI. All adolescents have failed prior outpatient therapy and require more intensive services. Baseline data indicate a much higher proportion of externalizing disorders in this community clinic sample than in our psychiatric samples. In addition, about one-fifth of the adolescents are in foster care, and half have state caseworkers or are involved in the juvenile justice system. A major aim of this study is to determine whether our intensive F-CBT protocol can be implemented in a resource-constrained environment, with less highly trained clinicians, consistent with that found in community-based agencies. A two-group randomized design is being used to test whether our F-CBT protocol will produce better treatment outcomes at 6 and 12 months compared to standard care (SC) in the IOP, which typically comprises more eclectic treatment that includes some use of CBT techniques. At the time of this publication, the 12-month follow-up data was being collected.

Both F-CBT and SC are being delivered by master's-level mental health counselors who work in pairs to deliver primarily home-based treatment. These counselors are typically unlicensed and use their job to accrue hours toward licensure. Clinicians in both conditions receive weekly supervision by a licensed social worker that is eclectic in nature (i.e., integrates multiple theoretical perspectives), the most common supervision format reported in our survey of community clinicians (Spirito et al., 2011). Clinicians in the F-CBT condition also receive weekly supervision from the research team that focuses on use of the F-CBT protocol. In order to make the protocol consistent with community care, it is being delivered within the constraints of the session limits of a family's insurance plan, which can vary substantially.

Our experience with this treatment study in the "mental health ecosystem" (Weisz, Ugueto, Cheron, & Herren, 2013) has presented a different set of research challenges, including the fact that the myriad different insurance plans make it difficult to plan a research protocol under naturally occurring conditions with complex patients. Also, clinicians with the least experience are often employed to treat the most severe clinical cases in community agencies. Thus, therapist training and supervision must be a priority in such agencies, but release time and funding for such training is typically limited. We have found that community agencies are very receptive to such training but that variability in therapist competence makes training more challenging.

Another major challenge for future treatment research will be to further address methodological challenges associated with conducting treatment research with suicidal youth. One significant methodological challenge for our team has arisen when we use SC as the comparison condition. Conducting a comparative effectiveness trial would be very difficult due to the manpower needs to treat a large number of such high-risk patients in intensive therapy in both conditions. Using treatment as usual poses its own unique problems. One recently recognized problem detected in our current trial is that patients in the experimental treatment arm of our studies may be more likely to ascribe suicidal intent to their self-injurious behaviors and/or to report suicidal events than do SC patients. For example, in our

F-CBT clinical trial for suicidal adolescents, we found that a number of participants in the SC arm failed to report an attempt that was documented in their hospital medical record. This was not the case for any of the participants in the I-CBT protocol. We believe that the I-CBT patients are desensitized to questions about suicidality, because every session starts with a check-in about suicidality, and therapists stress that asking the question is *not* designed to lead to hospitalization but rather to ensure patient safety. Indeed, concern about being rehospitalized is a well-documented barrier to youths' willingness to disclose suicidal ideation (Cigularov, Chen, Thurber, & Stallones, 2008). Thus, it will be important for researchers to explore other methods of verification of suicidal events, other than self- and parent report, to improve accuracy of results and avoid concluding that an intervention is not efficacious when it has had an effect.

CONCLUDING COMMENTS

In this chapter we have described a modular CBT protocol for suicidal adolescents that includes individual, parent, and family sessions. Our protocol has evolved to address the complex symptom presentation of suicidal youth, the heterogeneity of stressors that trigger suicidal behavior, and the dysfunction typically encountered within the family and peer systems. Consistent with our conceptual model, the protocol places particular emphasis on problem solving, cognitive restructuring, and affect regulation as foundational skills to address primary suicide and NSSI triggers. The protocol is flexible, and we have adapted it for use with other populations, including youth with substance misuse, weight concerns, co-occurring conduct problems, and youth at risk for HIV infection. The importance of a flexible, comprehensive protocol cannot be emphasized enough, because the severity of problems presented by psychiatrically hospitalized youth and the risk for continued self-injurious behavior have escalated dramatically over the course of the last 15 years of clinical research. Also, clinicians with the least experience are often employed to treat the most severe clinical cases in community agencies. Thus, therapist training and supervision must be a priority in clinical research protocols disseminated to community agencies with such high-acuity cases.

The need to address multiple symptoms in severe patients makes conducting clinical trial research challenging. The complex presentation of these patients poses a problem for a field in which design precision is a hallmark but has resulted in many studies with participants who do not represent the patients seen in clinical practice (Weisz et al., 2013). Future research will need to balance scientific precision with real-world patient care realities if we are to move forward the adoption of evidence-based treatments in the community, especially in settings with limited resources and where clinicians are less highly trained than doctoral level professionals.

ACKNOWLEDGMENTS

The research described in this chapter was supported by National Institutes of Health grants (Nos. R03MH57349, R21MH52411, R01MH097703, R01AA016854, R01AA020705,

R34MH083092, R34 MH082211, R01AA014191, and R01MH087520), as well as by private grants from the van Ameringen Foundation and the American Foundation for Suicide Prevention.

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CHAPTER 15

Trauma-Focused Cognitive-Behavioral Therapy for Traumatized Children

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OVERVIEW OF THE CLINICAL PROBLEM

Trauma-focused cognitive-behavioral therapy (TF-CBT) addresses problems specifically associated with significantly traumatic events that children experience or witness. The prototypical disorder associated with trauma exposure is posttraumatic stress disorder (PTSD); TF-CBT targets PTSD symptoms, as well as other trauma-related outcomes. After trauma exposure, many children develop significant PTSD symptoms without meeting full PTSD diagnostic criteria, and these children are also appropriate candidates for TF-CBT treatment. DSM-5 PTSD includes negative cognitions about oneself, others, and/or the world (e.g., shame, self-blame, poor self-esteem, diminished sense of safety or trust), as well as negative affective states (e.g., sadness, anger). Research has demonstrated that traumatized children may experience dysregulation in affective, behavioral, cognitive, and physiological areas of functioning. Some children may develop depressive, anxiety, behavioral, or physical disorders in response to trauma exposure rather than PTSD. These problems are addressed in greater detail elsewhere (Cohen, Mannarino, & Deblinger, 2017). TF-CBT includes components that target reregulation in each of these realms, with a goal of optimizing children's adaptive functioning after trauma.

TF-CBT is therefore intended for children who have primary trauma symptoms (e.g., PTSD, depression, anxiety, shame, cognitive distortions) that the core components of this model would be expected to improve. The core target of TF-CBT is to help children overcome traumatic avoidance, shame, sadness, fear, and other trauma-specific emotional and behavioral difficulties. TF-CBT would likely not be the first line of treatment for traumatized children who have no or few symptoms of PTSD or depression, or who engage in dangerous acting-out behaviors, active suicidal behavior, and/or active substance abuse difficulties. Such children would be expected to benefit much more from evidence-based interventions that directly address those difficulties. Once stabilized, such children may be reassessed to determine their appropriateness for TF-CBT. This is why assessment is crucial. Regardless of trauma history, if children's clinical presentation suggests that their core problems are not directly related to the traumatic experiences, TF-CBT typically would not be the first treatment of choice. However, if such children respond to another treatment approach with improved emotional or behavioral regulation, then are discovered to have remaining PTSD or depressive symptoms, or to have more significant trauma symptoms than were initially apparent, it would certainly be appropriate to provide TF-CBT at that point.

CONCEPTUAL MODEL GUIDING THE TREATMENT PROGRAM

TF-CBT is a hybrid model incorporating cognitive-behavioral, attachment, family, humanistic, and psychodynamic therapy principles, as well as research findings about the psychophysiology of childhood trauma. Traumatic childhood experiences affect children on many different levels and have the potential to disrupt their physical, emotional, cognitive, behavioral, and social adjustment and development. Cognitive-behavioral models of treatment assume that overall levels of adjustment in all these areas of functioning impact one another and influence overall well-being. Thus, dysfunction in one area of well-being likely will lead to difficulties in another. Similarly, improved well-being in one area (e.g., emotional) will likely enhance well-being in another realm (e.g., physical). TF-CBT is designed to address the impact of childhood trauma across these areas of functioning, thereby reducing the likelihood of disrupted development and maladaptive functioning.

Several psychological theories have been proposed to explain the development of posttraumatic difficulties. Classical conditioning may produce behavioral and emotional reactions that are natural and, in many cases, productive responses to trauma (e.g., arousal, fear). Later, these distressing reactions may generalize to innocuous trauma reminders (e.g., memories, darkness, a loud noise, men with beards) that may not warrant but automatically elicit arousal, fear, and other distressing responses. Avoidant behaviors may then develop and be reinforced (via operant conditioning) in an effort to minimize the experiencing of trauma-related symptoms and emotions. Unfortunately, although this avoidance may be adaptive in the short term, it will increasingly limit children's capacity to engage in interactions with others, as well as the world, which are critical to healthy emotional and social development. Emotional processing theory (Foa & Rothbaum, 1998) similarly suggests that posttraumatic symptoms reflect the development of a problematic fear structure comprising many stimuli, responses, and meaning representations that, when triggered, produce maladaptive reactions. These theories argue for the importance of exposure to trauma memories and reminders by (1) promoting habituation and reducing reinforcement of avoidance and (2) simultaneously allowing the feared memories and emotions to be paired with therapeutic, corrective experiences that may produce new adaptive associations between trauma memories and feelings of safety and mastery. Social-cognitive theory focuses on the impact of trauma on preexisting or developing beliefs about one's self, others, and the world. These theorists highlight the value of reviewing trauma-related feelings and thoughts not for purposes of habituation but rather to process the experience fully, thereby correcting dysfunctional beliefs and addressing secondary emotional reactions such as shame and self-blame. These theories underscore the psychoeducation, skills building, trauma narrative/processing, and *in vivo* components of TF-CBT, in that these components are all designed to provide opportunities for corrective experiences and information, enhanced feelings of competence, and the processing of trauma-related thoughts and feelings. Through the use of gradual exposure (GE), included in each of the TF-CBT treatment components, children are able to master and appropriately process trauma reminders rather than be overwhelmed by and feel a need to avoid them.

Attachment, humanistic, family, and psychodynamic theories support the central role of the therapist–client relationship, as well as the value of parental/family involvement in optimizing outcomes. The TF-CBT model recognizes the critical contribution of the therapeutic relationship and the importance of parental/family involvement in treatment whenever possible. The therapist serves as not only an educator but also a role model and coach with respect to skills building and nonavoidance of trauma-related material. The therapist provides a safe, therapeutic environment for children, adolescents, and parents to share their innermost thoughts and feelings, and to overcome the stigma, shame, and self-blame associated with traumatic experiences.

TF-CBT was originally designed to help parents cope with their own distress in the aftermath of trauma, while enhancing their skills in responding to their children's trauma-related difficulties. In so doing, TF-CBT reduces parental distress and simultaneously enhances parents' support for their children, both factors that contribute in important ways to children's enhanced recovery.

CHARACTERISTICS OF THE TREATMENT PROGRAM

Goals and Themes of TF-CBT

Goals and themes of TF-CBT include (1) mastering skills to manage stress and improve affective, behavioral, and cognitive regulation early in treatment; (2) inclusion of parents or other caretaking adults in treatment whenever feasible; (3) mastering trauma reminders and traumatic avoidance through the use of GE throughout the TF-CBT model; (4) making meaning and contextualizing traumatic experiences through affective and cognitive processing—moving beyond victimization; and (5) enhancing safety and optimizing future development.

Who Is Seen and in What Format: Special Settings

TF-CBT addresses trauma-related symptoms for children ages 3–18. The treatment model is adapted for children of different developmental levels. Children and their parents or primary caretakers receive TF-CBT in both parallel individual sessions and joint child–parent or family sessions; children can receive TF-CBT alone if parents or caretakers are not available to participate in treatment. Children in foster care, group homes, residential treatment facilities, day hospitals, and inpatient programs can receive TF-CBT.

Content of TF-CBT and Sequence of Sessions

TF-CBT is a components-based model. The TF-CBT components are summarized by the acronym PRACTICE: Psychoeducation, Parenting skills, Relaxation skills, *A*ffective expression and modulation skills, Cognitive coping skills, Trauma narration and cognitive processing of traumatic experiences, *In vivo* mastery of trauma reminders, Conjoint child–parent sessions, and Enhancing safety and future developmental trajectory. The sequence of TF-CBT components generally follows the PRACTICE order, with early PRAC skills-based components preceding the more trauma-specific TICE components as described later. The model is progressive, with each component building on previously mastered skills. TF-CBT fidelity checklists are available to monitor therapists' adherence to the treatment model. Fidelity requires the following: (1) All TF-CBT components are provided during treatment unless justification exists to not provide a component (e.g., if no parent is available to participate, parenting skills would not be provided; if no generalization of trauma reminders existed, *in vivo* mastery would not be provided); (2) PRACTICE components are generally provided in sequence unless compelling clinical justification exists to provide a component out of sequence; (3) progression from one component to the next is achieved at a pace that is appropriate for the clinical circumstances (treatment is usually completed within 8–20 sessions; children in foster care or residential settings typically require more sessions than those living in other settings as a result of having experienced multiple placements with inconsistent behavioral expectations, which frequently result in more behavioral dysregulation; (4) GE is included in all treatment components. GE involves incrementally increasing the intensity or duration with which exposure to trauma reminders is included in each sequential TF-CBT component. GE may be achieved through talking, writing, creating arts, or other activities that directly engage the children and parents in mastering avoidance of thoughts, feelings, reminders, and memories of the traumatic experiences. Specific examples of how GE is included in each PRACTICE component are included in the following description.

Skills and Accomplishments Emphasized in TF-CBT: PRACTICE Components

The PRACTICE components are the core of the TF-CBT model. As noted, TF-CBT is provided in parallel individual child and parent sessions, with additional conjoint child–parent sessions. Each component includes interventions provided to both child and parent. The therapist spends approximately equal amounts of time with the parent and with the child during each session; for example, during 60-minute sessions, about 30 minutes would be spent with the child and 30 minutes with the parent.

Psychoeducation

Exposure to traumatic events is common, but most families feel alone in their experiences and are afraid of the long-term impact of the trauma(s) on their children. Psychoeducation provides information to children and parents about the nature of the traumatic experiences, such as the numbers of other children who experience this type of trauma, its causes, and common reactions of children and parents. Important aspects of the latter include providing information about trauma reminders (i.e., any internal or external cues that remind children of their original trauma experiences and elicit trauma responses), starting to identify the child's individual trauma reminders and connecting these to the child's personal trauma responses. This helps to "make sense of trauma" and in many cases assists children and parents in understanding that the children's current emotional and/or behavioral problems are trauma-related, rather than a result of the child being a "bad child." Normalizing children's and parents experience can reassure them that they are not alone or abnormal; providing information that treatment such as TF-CBT is structured and usually time limited, and documented to be highly successful brings hope for recovery.

Psychoeducation typically occurs throughout TF-CBT. During initial psychoeducation sessions, GE is implemented by referring to children's traumatic experiences by name (e.g., "sexual abuse"; "domestic violence"; "car accident"; "your father's death") rather than euphemism (e.g., "the bad thing that happened"). This models nonavoidance for the children and parents early in treatment. In a similar manner, children who experience sexual abuse are taught "the doctor's names" for private body parts instead of vaguely referring to them by, for example, nicknames. Domestic violence, physical abuse, bullying, and other traumas are described factually: Children who witnessed traumatic death are educated about the cause of death in an age-appropriate manner, without the use of euphemisms, and these words are used even with young children to help diminish avoidance and to decrease any shame that might have come to be associated with the experiences. This occurs during psychoeducation, and this information is repeated during other PRAC components. Whenever therapists refer to the children's experiences, they use the words of the children's traumatic experiences with the children and parents. Nonverbal behavior similarly conveys the importance of directly addressing the children's traumatic experiences. TF-CBT therapists are specifically trained to directly look at and face children and parents when using the words that describe the traumatic experiences, not to lower their voice tone in a way that might inadvertently convey secrecy, shame, or discomfort, or to say things that suggest that talking about the traumatic experience is something that should be avoided (e.g., "This is going to be really hard to talk about. You can stop whenever you want"). Therapists are also trained to recognize their own avoidance reactions, which are often well-intentioned attempts to avoid retraumatizing the children that may instead encourage the very avoidance that the children need help in overcoming.

Parenting Skills

In the TF-CBT model, parents or other primary caretakers (hereafter referred to as "parents") are viewed as primary agents of change for children. The hour per week that most therapists spend with children is dwarfed by the amount of time parents spend with children during the course of their lives. When parents address their personal traumatic reactions and become sources of strength, support, and belief in the children's recovery, this can strongly contribute to positive child outcomes. As noted, traumatized children may experience dysregulation of attachment, affect, behavior, biology, and cognitions. To assist parents in recognizing and optimally addressing these symptoms, the TF-CBT parenting component addresses the children's symptoms, provides parents with interventions that parallel those the children are receiving in sessions, reinforces and practices what the children are learning in treatment, and addresses parents' emotional response to the children's trauma. Depending on whether parents experienced their children's trauma themselves (e.g., a disaster or domestic violence), they may have personal trauma symptoms. Alternatively, parents may develop vicarious trauma symptoms related to hearing about their children's experiences. The parenting skills component focuses on enhancing parents' ability to provide positive parenting to their children (e.g., using praise, positive attention, and appropriate behavioral interventions for behavioral problems), decreasing parental distress related to the children's trauma, enhancing parental support of the children and the overall child–parent relationship. Although TF-CBT is child focused, and the goal is not to address parents' personal past trauma issues, these sometimes arise when children have experienced traumas such as sexual abuse or domestic violence. In these situations, parents may require additional referrals to personal therapy. GE in the parenting component typically includes making connections between parenting or child behaviors and the children's trauma experiences. For example, a mother who brought her 8-year-old daughter for treatment after the child disclosed a 5-year history of sexual abuse by the father, was focused on the child's inappropriate sexual behavior toward her younger brother (e.g., "humping" and trying to perform oral sex on him). The mother said, "This is the last thing I need now." She was overwhelmed by the multiple financial and legal issues related to her daughter's disclosure, the arrest of her husband, the loss of his income, and the need to get a job to support herself and her two children. The mother was so frustrated she admitted that she had screamed at her daughter, "You're disgusting, like your father!" The therapist took this opportunity to again talk with the mother about the impact of severe trauma on children's and adults' physiological arousal systems and to explore the symptoms they were both experiencing. The mother described that in addition to the inappropriate sexual behaviors, her daughter was clingy, refusing to sleep in her own bed, and frequently crying. The therapist suggested that all of the child's behaviors were symptoms of PTSD and indicative of the child's elevated fear responses, rather than of becoming a sexual offender as mother feared. The mother started to cry, admitting that both she and her daughter were on edge and they needed help getting their lives back, even if they could never be normal again. The therapist provided specific suggestions for supervising the daughter around other children, praising her for positive/appropriate behaviors. The therapist met with the child to address "OK" and "not OK" touches, the use of relaxation strategies (described below), and appropriate affectionate behaviors to replace inappropriate touching. Together with the mother, the therapist and child developed a behavior plan for the child to earn stars each day for only having "OK" touching each day. The mother felt much calmer knowing that a plan was in place.

Relaxation Skills

Physiological dysregulation in traumatized children has been documented in several areas of the central and peripheral nervous system. These children also experience increased rates of medical illnesses such as asthma, allergy, headaches, and gastrointestinal upset. Relaxation interventions such as focused breathing, progressive muscle relaxation, yoga, and other mind–body techniques have proven effective in reversing some of these adverse impacts in adults. Relaxation skills are also useful as distraction from upsetting and traumatic thoughts or from reenactment of traumatic behaviors, such as sexually inappropriate behaviors that are anxiety-driven: They refocus children and parents on enjoyable activities and encourage both to learn how to self-soothe, and they are fun. Music, dance, exercise, sports, blowing bubbles, drawing, reading, and praying, among other activities, may be included as relaxation or calming techniques. Children and parents develop a relaxation plan with the therapist; most include different activities for different settings. Teachers or other adults may also be included to assist children in implementing the plan in different settings. Children practice these during the week, and plans are modified each session until the children are able to self-soothe with increasing skill in diverse settings. GE is implemented in this component by helping children and parents develop a variety of relaxation strategies for different scenarios (e.g., at school, at bedtime, at friends' houses) when they experience trauma reminders and to practice selecting the best strategy for different specific settings when these reminders occur. The child in the previous example said that she would like to have a soft stuffed animal to stroke when she had scary thoughts about her father sexually abusing her (which had been serving as a trauma reminder and an antecedent to her inappropriate sexual behaviors). Her mother took her to the store to select a stuffed animal of her choice, and also practiced with her daughter each night using a variety of relaxation strategies, including patting the stuffed bunny while singing the child's favorite songs. Soon the child was able to use these soothing strategies spontaneously, even when mother was not present. The sexually inappropriate behaviors soon stopped.

Affective Modulation

Many traumatized children have affective dysregulation. Some have learned that expressing any feelings is dangerous; for example, some children who have lived with chronic abuse or domestic violence may have correctly learned that protesting against what was being done to them or to a parent would further endanger themselves or another family member. Such children may have learned to suppress their feelings. Others may believe that the only "safe" feeling to express is anger. For these children, the first step is to feel safe identifying and expressing feelings in therapy. A variety of techniques are used in TF-CBT to encourage expression of feelings, including the use of games, photographs of faces, drawing, and other creative interventions to encourage affective expression. After affective expression has begun, affective modulation skills are introduced to help children manage disruptive feelings. These include a variety of interpersonal and cognitive techniques, such as problem solving, negotiating, social skills, role playing, seeking social support, thought interruption, positive imagery, ensuring safety in the moment, and others described elsewhere (Cohen et al., 2017). During their sessions, parents express their own feelings about what has happened to their children and develop personalized optimal ways of coping with them. They also learn to assist children in expressing a variety of feelings; learn to understand, tolerate, and encourage their children's expression of a range of feelings; and are assisted in expressing their own feelings in therapy and modeling appropriate affect expression and modulation for their children. If parents are not able to tolerate affective expression in children, then this is addressed in treatment, and parents are helped to assist their children with appropriate affective modulation skills. GE is implemented in this component by helping children identify and practice strategies for coping with negative affective states associated with trauma reminders.

Cognitive Coping

Once children start to master affective expression, they are taught the important affective modulation skill of "cognitive coping," or understanding the connections among thoughts, feelings, and behaviors. Therapists provide children and parents with examples from daily life (not traumatic experiences) in which their thoughts may not be accurate or helpful. For example, the therapist may present the following scenario: Jane comes to school, but when she sees her friend Maria, Maria doesn't ask Jane to play with her. Jane thinks to herself, "Maria doesn't like me anymore." The therapist asks the child, "How would Jane feel if this were her thought?" The child might respond, "Sad, mad, upset, or rejected." When asked, "If Jane felt like that, how would she act?" the child might say, "She would sit by herself, or she might not talk to Maria, or she might even say mean things about her to other girls." The therapist asks the child, "Can you think of a different thought that Jane could tell herself, instead of that Maria doesn't like her anymore, that might explain why Maria didn't play with her?" The child might not be able to come up with any explanation, in which case the therapist says, "What if Jane thinks that maybe Maria's parents had a really bad argument last night and she was upset about that? Or maybe Maria has a big test today and she is worried about it. If that was Jane's thought, how would she feel?" The child says, "She might feel sorry for Maria." The therapist says, "And if she felt sorry for Maria, what would Jane do?" The child says, "She might ask if she could sit with her, or she might just leave her alone and talk to her later. But she wouldn't be mad at Maria." The therapist then points out to the child that there is no easy way for Jane to know what Maria was really thinking, but that Jane can change what she herself is thinking. By using examples like this from ordinary life, children and parents learn to examine their own patterns of negative thinking ("Is my thought accurate? Is it helpful? Does it make me feel better?"), and to change dysfunctional thoughts about everyday events. GE is used during cognitive coping for *parents* to apply the above techniques for processing their maladaptive thoughts about the child's traumatic events. However, the therapist does not encourage the *child* to apply these techniques to maladaptive thoughts until the next component (trauma narration and processing).

Trauma Narration and Cognitive Processing

During this component, the therapist helps traumatized children to develop and cognitively process a detailed narrative about their traumatic experiences. "Trauma narration" is the interactive therapeutic process that occurs over several sessions, during which therapists gradually encourage children to share their traumatic memories, including feelings, sensations, thoughts, and increasing details, and come to a more accurate and helpful understanding about one or more traumatic experiences. During this interactive process, the child typically develops a concrete product (often, but not always, a written book). However, like other materials children produce during therapy (e.g., drawings), the written product is not the actual trauma narrative but only a small part of this process. Narratives are often organized according to the temporal sequences of the children's life. Children who have experienced chronic or complex trauma may prefer to develop a life narrative. This can be accomplished by developing a timeline from birth to the present and filling in important dates or events. Life narratives should include positive, as well as traumatic, events in order to contextualize the children's traumatic experiences.

During subsequent sessions, as children review their trauma narratives, they include more details about what happened, as well as how they were feeling, what they were thinking, and their body sensations at the time the traumatic experiences occurred. This allows therapists to identify dysfunctional cognitions that children would not necessarily share during initial direct questioning. Cognitive processing of the narrative includes addressing these inaccurate and unhelpful cognitions and replacing them with more optimal thoughts, which can be added to the narrative.

While the children develop the narrative, the therapist typically continues to work on skills building with parents, while also sharing information from children's narratives when clinically appropriate during parallel parent sessions (with the children's consent). The therapist assures children that parents are ready and able to tolerate what they are telling in their narratives. If this is not the case, the narratives should not be shared with parents. As noted, if GE has been used properly during the earlier components, developing the narrative should not be a sudden leap in exposure but rather a gradual, incremental increase from previous sessions.

In Vivo Mastery of Trauma Reminders

For children with generalized avoidance of trauma reminders (e.g., those who refuse to use the bathroom after being sexually abused in the bathroom), it is first necessary to ascertain whether the feared stimulus (the bathroom) is truly innocuous (i.e., have the perpetrator and other potential abusers been removed from the home?) If not, *in vivo* exposure is not an appropriate intervention; working with the nonoffending parent, legal interventions, or safety planning is instead pursued, because the stimulus is an appropriate cue for being vigilant to potential danger. In such a situation, desensitizing a child to danger is not warranted or appropriate. However, if the bathroom is safe, *in vivo* desensitization is indicated. The therapist, child, and parent collaborate to assist the child in tolerating increasingly distressing reminders (e.g., walking past the bathroom without going in; walking into the bathroom for 1 minute; staying in the bathroom and sitting on the toilet without using it; staying in the bathroom and using the toilet; staying in the bathroom and getting undressed, without using the shower; staying in the bathroom, getting undressed, and getting into the shower without turning it on; staying in the bathroom, getting undressed, and turning on the shower for 2 minutes; taking a full shower in the bathroom once; taking a shower in the bathroom every day for a week). As each milestone is achieved, the child overcomes the maladaptive emotional reactions to trauma reminders and gains additional feelings of mastery, for which he or she is praised. The child uses the PRAC skills learned earlier in treatment to process and tolerate fear. and identifies specific trauma cues if these occur in the course of the *in vivo* exposure. The therapist is particularly available during *in vivo* work to provide support and to develop new coping strategies if this occurs. It is particularly important to help parents and children commit to complete follow-through on the *in vivo* treatment plan: Abandoning the plan midway can serve to reinforce avoidance even more strongly. GE is of greater intensity during *in vivo* exposure than during the narrative because children are exposed to the feared, but innocuous, trauma reminder in real life.

Conjoint Child–Parent Sessions

TF-CBT is delivered as individual child and parent sessions as described earlier. Brief joint parent–child sessions also can be convened as needed earlier during TF-CBT therapy (e.g., to develop a behavioral plan for the child's inappropriate sexual behaviors). Conjoint parent–child sessions are an integral part of the TF-CBT model after children have completed trauma narration and processing. At this point in treatment, children are typically able to share their narratives with their parents, and parents are prepared to encourage, hear, and praise children for talking openly about their traumatic experiences. This is an important step in transferring agency of change from therapist to parent, as family members prepare to move forward together after the end of therapy. In addition to sharing the children's narratives, therapists work to optimize open family communication about the trauma and other matters, such as behavior problems and issues that are often difficult to talk about (e.g., dating, sex, drugs, or choosing appropriate peers). Safety planning is often begun during conjoint sessions. GE is implemented in this component by sharing the children's narratives, as well as through an interchange of questions about the children's traumatic experiences that often occurs between child and parent.

Enhancing Safety and Future Developmental Trajectory

Safety planning is important for children who have experienced trauma, particularly for those who may still encounter dangerous situations, such as living with ongoing domestic or community violence. Since traumatized children are often at high risk for revictimization, personal safety skills training is an important component of treatment. Parents and therapists carefully consider the children's developmental level and actual situation in developing a safety plan. Care is taken to not suggest that the children could or should have done something differently in the past that might have prevented their previous victimization, because this is rarely accurate. GE is implemented in this component by discussing prevention of future traumatic events.

Duration, and Determining When TF-CBT Is "Finished"

TF-CBT typically lasts 8–20 sessions, with treatment extending to 16–25 sessions for youth with complex trauma. It is completed when all of the components have been provided. However, many children who have experienced trauma have other problems and may need additional interventions or ongoing provision of TF-CBT components to consolidate these skills. Periodic assessment can guide determination of when TF-CBT treatment goals have been met, whether additional treatment goals that go beyond the TF-CBT model need to be established, and when treatment should be terminated. The time-limited nature of TF-CBT may help to enhance clients' commitment to completing the treatment process.

Manuals and Other Supporting Materials

The TF-CBT manual (Cohen et al., 2017), an updated applications book (Cohen, Mannarino, & Deblinger, 2012), and additional resources are available for implementing TF-CBT, including a free Web-based training course, TF-CBT*Web,* available at *www.musc.edu/tfcbt.* This Web-based course includes many treatment resources, such as printable scripts, handouts, streaming video demonstrations, games and books used in the model, and links to other resources. Additional resources include Dutch, German, Chinese, Korean, Polish, and Japanese translations of the treatment manual, and Spanish translations of various treatment resources; yearlong TF-CBT Learning Collaboratives sponsored by the National Child Traumatic Stress Network (*www.nctsn.org*); and TF-CBT Train the Trainer, Train the Consultant, and Train the Supervisor programs. U.S. mental health therapists can become nationally certified; details are available at *https://tfcbt.org*.

EVIDENCE ON THE EFFECTS OF TREATMENT

Table 15.1 summarizes completed TF-CBT randomized controlled trials (RCTs). These studies provide significant evidence for the efficacy and effectiveness of TF-CBT in treating PTSD and other symptoms in traumatized children. In addition, these studies have documented the benefits of TF-CBT in enhancing parental support and effective parenting practices, while also reducing parental levels of depressive and trauma-related symptoms. Several TF-CBT studies have also examined the potential role of mediating factors in children's symptom reductions. For example, Cohen and Mannarino (1998) documented that for preschool children parental emotional distress and parental support were significant predictors of children's symptoms. Another study (Cohen & Mannarino, 2000) demonstrated that children's abuse-related attributions and perceptions, as well as parental support, predicted treatment outcome in older children with a history of sexual abuse. A third study (Deblinger, Mannarino, Cohen, & Steer, 2006) revealed that multiple-trauma history and higher levels of pretreatment depression served as moderators, respectively, but only for children receiving child-centered therapy (CCT). These findings suggest that TF-CBT may be particularly preferential for children with multiple traumas and those with more depressive symptoms. Finally, the findings of several studies suggest that TF-CBT may be particularly effective in helping overcome trauma-related behavioral and depressive problems (Deblinger, Lippmann, & Steer, 1996; Deblinger, Mannarino, Cohen, Runyon, & Steer, 2011; Diehle, Opmeer, Boer, Mannarino, & Lindauer, 2015).

TABLE 15.1. Summary of Completed TF-CBT Randomized Controlled Trials

Study	Target population (*N* = subjects starting study or treatment)	Number/ length of sessions	Treatment/control (*N* = subjects in data analyses)	Major findings
Cohen & Mannarino (1996)	Sexually abused U.S. preschool children, ages 3–6 years; *N* = 86	12, 1.5 hours	TF-CBT 39 TF-CBT 28 NST	TF-CBT superior to NST in improving PTSD, internalizing, and sexual behavior symptoms.
Deblinger, Lippmann, & Steer (1996)	Sexually abused U.S. children, ages 8–14 years; *N* = 100	12, 1.5 hours	TF-CBT 22 TF-CBT parent only 24 TF-CBT child only 22 TF-CBT parent + child 22 community control	TF-CBT provided to child (combined groups) significantly superior to control for improving PTSD symptoms; TF-CBT provided to parents (combined groups) significantly superior to control for improving child depression, behavior problems, and parenting skills.
Cohen & Mannarino (1998)	Sexually abused U.S. children, ages 8–14 years (PTSD symptoms not required for entry); *N* = 82	12, 1.5 hours	TF-CBT 30 TF-CBT 19 NST	TF-CBT superior[a] to NST in improving depression and social competence at post-treatment and in improving PTSD and dissociation at 12-month FU among treatment completers.
King et al. (2000)	Sexually abused Australian children, ages 5–17 years; *N* = 36	20, 100 minutes	TF-CBT 12 TF-CBT child 12 TF-CBT family 12 WL	TF-CBT significantly superior to WL in improving PTSD symptoms; inclusion of family only minimally improved child outcomes.
Deblinger, Stauffer, & Steer (2001)	Sexually abused children, ages 2–8 years; *N* = 44	11, 1.75 hours	21 TF-CBT group 23 support group	TF-CBT produced larger effect sizes for mothers' symptoms than supportive group and greater gains in children's safety knowledge.
Cohen, Deblinger, Mannarino, & Steer (2004)	Sexually abused multiply traumatized U.S. children, ages 8–14 years; *N* = 203	12, 1.5 hours	TF-CBT 89 TF-CBT 91 CCT	TF-CBT significantly superior to CCT in improving PTSD, depressive, behavior, and shame symptoms in children, and a number of parenting problems among participating parents.
Cohen, Mannarino, Perel, & Staron (2007)	Sexually abused children, ages 10–17 years; *N* = 24	12, 1.5 hours	TF-CBT + sertraline = 12 TF-CBT + placebo = 12	Both groups experienced significant improvement in PTSD and depression, with no significant differences between groups.

(continued)

TABLE 15.1. *(continued)*

Study	Target population (*N* = subjects starting study or treatment)	Number/ length of sessions	Treatment/control (*N* = subjects in data analyses)	Major findings
Jaycox et al. (2010)	Traumatized children in schools after Hurricane Katrina, grades 4–8, treated in clinics or schools; *N* = 118	TF-CBT 12, 1 hour; CBITS 13, 1 hour	TF-CBT 60 TF-CBT 58 CBITS	Significant reduction in PTSD in both groups, with no significant difference between groups; access significantly greater for school-based CBITS than clinic-based TF-CBT.
Cohen, Mannarino, & Iyengar (2011)	Children exposed to DV, treated in community DV clinic, ages 7–14 years; *N* = 124	8, 1.5 hours	TF-CBT 64 TF-CBT 60 CCT	TF-CBT significantly superior to CCT in improving PTSD and anxiety and for preventing serious adverse events.
Deblinger et al. (2011)	Sexually abused children, ages 4–11 years; *N* = 210	TF-CBT-N 8 or 16, 1.5 hours TF-CBT-Y 8 or 16, 1.5 hours	TF-CBT 52: 8 sessions TF-CBT-TN-Y 52: 8 sessions TF-CBT-TN-N 54: 16 sessions TF-CBT-TN-Y 52: 16 sessions TF-CBT-TN-N	Dismantling study. Most symptoms improved significantly without significant differences between conditions. Eight sessions with TN was most effective and efficient at improving children's fear and anxiety and parents' abuse-specific distress. Sixteen sessions without TN led to significantly greater improvement in child externalizing behaviors and parenting skills.
Jensen et al. (2013)	Multiply traumatized Norwegian children, ages 10–18, treated in community clinics; *N* = 156	15, 1 hour	TF-CBT 79 TF-CBT 77 TAU	TF-CBT significantly superior to TAU for improving PTSD, depression, and general mental health symptoms.
O'Callaghan et al. (2013)	Commercially sexually exploited, war-exposed Congolese girls, ages 12–17, treatment provided by non-mental-health facilitators; *N* = 52	15, 1.5 hour groups over 5 weeks	TF-CBT 24 TF-CBT group 28 WL	TF-CBT significantly superior to WL for improving PTSD, depression, anxiety, conduct problems, and prosocial behavior.
McMullen et al. (2013)	War–exposed Congolese boys (predominantly former boy soldiers), ages 13–17, treatment provided by non-mental-health facilitators; *N* = 50	15, 1.5 hour groups over 5 weeks	TF-CBT 25 TF-CBT group 25 WL	TF-CBT significantly superior to WL for improving PTSD, anxiety, depression, conduct problems and prosocial behavior as well as overall psychological distress

(continued)

TABLE 15.1. *(continued)*

Study	Target population (*N* = subjects starting study or treatment)	Number/ length of sessions	Treatment/control (*N* = subjects in data analyses)	Major findings
Dorsey et al. (2014)	Traumatized children in foster care, ages 6–15 years, treated by therapists in community health agencies; *N* = 47	11 minimum, 1 hour	TF-CBT 25 Engagement-TF-CBT 22 Standard TF-CBT	Engagement-TF-CBT significantly more likely than Standard TF-CBT to retain foster families in treatment through four sessions and to prevent premature treatment dropout. No significant differences in session cancellations, no-shows, treatment satisfaction, or clinical outcomes.
Diehle et al. (2015)	Traumatized Dutch children, ages 8–18 years; *N* = 48	8, 1 hour	TF-CBT 24 TF-CBT 24 EMDR	TF-CBT and EMDR equally effective and efficient in improving PTSD symptoms; TF-CBT significantly superior for improving children's depressive and hyperactivity symptoms.
Murray et al. (2015)	Multiply traumatized, HIV-affected Zambian children, ages 5–18, treatment provided by trained lay counselors; *N* = 257	10–16 sessions, flexible to accommodate cultural needs of setting	TF-CBT 131 TF-CBT 126 UCC	TF-CBT significantly superior to UCC for improving PTSD and adaptive impairment.
Goldbeck et al. (2016)	Multiply traumatized German children, ages 7–17, treated in community clinics; *N* = 159	12, 1 hour	TF-CBT 76 TF-CBT 83 WL	TF-CBT significantly superior to WL for improving PTSD symptoms; maladaptive cognitions; adaptive functioning; and depressive, anxiety, and behavioral symptoms but not quality of life. Improvement in PTSD symptoms was parallel for youth with complex and typical PTSD.

Note. Only studies with nontrauma comparison or control condition are included. CBITS, cognitive-behavioral intervention for trauma in schools; DV, domestic violence; EMDR, eye movement desensitization and reprocessing; FU, follow-up; PTSD, posttraumatic stress disorder; TF-CBT, trauma-focused cognitive-behavioral therapy; TF-CBT-TN-N, trauma-focused cognitive-behavioral therapy without trauma narration and processing phase; TF-CBT-TN-Y, trauma-focused cognitive-behavioral therapy with trauma narration and processing phase; NST, nonsupportive therapy; CCT, child-centered therapy; WL, wait list; CBT, cognitive-behavioral therapy; TN, trauma narration; TAU, treatment as usual; UCC, usual clinical care.

[a] Based on $p < .05$.

Evidence Regarding Dissemination and Implementation

Children in Foster Care

A study in the Illinois foster care Systems of Care (SOC) program compared outcomes among children who had received SOC treatment as usual (TAU), or one of three evidence-based practices (EBPs). Children in all three EBPs experienced significantly less placement disruption than comparable children receiving SOC TAU. Children receiving TF-CBT also experienced significantly greater improvement in PTSD symptoms and in behavioral and emotional symptoms than comparable children receiving SOC TAU, and were significantly less likely to run away from their foster homes.

More recently, a randomized trial involving children and their foster parents demonstrated that TF-CBT combined with an evidence-based engagement strategy produced significantly better retention and completion rates among participating families than did TF-CBT without such engagement (Dorsey et al., 2014). The findings demonstrated the critical importance of therapeutic engagement at the start of treatment, as well as the importance of successful treatment completion, inasmuch as no significant differences were found across these conditions for those participants who completed TF-CBT.

Web-Based Distance Learning

The TF-CBT*Web* course described earlier is available to learners who have at least a master's degree. From the time of its public launching on October 1, 2005, to October 1, 2012, 123,848 learners registered for TF-CBT*Web,* with almost 70% completing the course (Heck, Saunders, & Smith, 2015). All learners demonstrated increases in knowledge on each of the practice components of TF-CBT based on pretest and posttest scores. Learners from the United States, those with master's degrees, and those with fewer years of experience working with child trauma victims tended to be more likely to complete the course. Demand for in-person training continues to increase nationally, suggesting that there is ongoing interest in dissemination of EBT for traumatized children and that the availability of free Web-based training in this model actually may be contributing to demand for increased training.

TF-CBT for Disasters

TF-CBT was found to be effective for children affected by the World Trade Center terrorist attacks (CATS Consortium, 2010) and Hurricane Katrina (Jaycox et al., 2010). TF-CBT continues to be utilized in the field following wide spread disasters. In the aftermath of the tsunami in Japan, pilot findings with children and families impacted by the tsunami, as well other diverse traumas, provided further documentation of the feasibility and effectiveness of TF-CBT with such populations of children (Satomi et al., 2015).

Children Impacted by Trauma around the World

Increasingly, TF-CBT is being utilized with youth and their families across the world with recent randomized trials completed in Norway and Germany respectively

(Jensen, et al., 2013); (Goldbeck, Muche, Sachser, Tutus, & Rosner, 2016). In addition, TF-CBT has been applied in low-resource settings with children impacted by multiple trauma(s), including war exposure. Several recent studies have documented the efficacy of TF-CBT in group and individual formats with war-exposed children in the Democratic Republic of the Congo (O'Callaghan, McMullen, Shannon, Rafferty, & Black, 2013; McMullen, O'Callaghan, Shannon, Black, & Eakin, 2013) and with orphaned and vulnerable children in Tanzania and Zambia, respectively (O'Donnell et al., 2014; Murray et al., 2015).

FUTURE DIRECTIONS

TF-CBT has been highly successful in treating diverse samples of traumatized children, with 80–90% remission rates of PTSD diagnoses in some studies. These results compare favorably to outcomes for other child mental health problems. However, many challenges remain. Recent research has examined the cost-effectiveness of TF-CBT and the development of stepped-care approaches that may help to individually tailor treatment to children, potentially leading to methods to further reduce costs, while simultaneously enhancing impact (Greer, Grasso, Cohen, & Webb, 2014). Results from several studies suggest that TF-CBT may be optimally tailored to address the needs of children with distinct symptom presentations, such that some children may benefit from different lengths of treatment and different implementations with respect to component use and intensity (Deblinger et al., 2011).

Other issues that have not been explored pertain to the optimal timing of treatment for traumatized children. Although natural recovery occurs, many children continue to suffer without intervention. For these children, earlier intervention is probably better than waiting for symptoms to become entrenched, but no studies have confirmed this. The issue of optimal timing of interventions is especially critical in the case of large-scale community disasters. No well-designed treatment studies have been conducted in the acute aftermath of disasters because of the many challenges inherent in obtaining Institutional Review Board (IRB) approval and funding to conduct such studies. Data from Hurricane Katrina challenge the presumption that natural recovery is the norm; substantial proportions of children were found to have significant trauma symptoms, many apparently from retriggering of past traumatic experiences. This suggests that there is a pressing need to prepare proactively for, fund, and provide mechanisms for IRB approval before disasters to conduct acute intervention research for children afterward.

Other areas that warrant further exploration include how to ensure that TF-CBT fidelity is maintained when dissemination occurs, how organizational readiness is optimally developed before dissemination begins, and whether it is feasible to train students in TF-CBT so that rather than disseminating it to practitioners who may be less receptive to change, TF-CBT could become a standard model of intervention for a new generation of therapists. Another critical area of exploration that is currently under way is the examination of supervision strategies that will not only optimize initial implementation but also support the ongoing use of TF-CBT, as well as similar EBPs with fidelity (Dorsey et al., 2013). All of these are fertile areas for dissemination research.

CONCLUDING COMMENTS

The more evidence accumulates about the potentially severe and long-term consequences of childhood trauma, the more crucial it becomes for us to learn what works best for traumatized children and how to get effective treatments into the hands of the therapists who see these children. In almost 25 years, we have gone from having no published RCTs to establishment of TF-CBT as an EBT for treating traumatized children.

Our future goals include evaluating comparative models of disseminating TF-CBT, more thoroughly evaluating stepped-care treatment approaches that can reduce costs without compromising positive outcomes, and developing optimal strategies for distinct symptom presentations in the aftermath of trauma. Finally, we hope to examine the effectiveness of introducing TF-CBT and other EBTs during graduate and postgraduate training to further enhance the availability and widespread dissemination of the efficacious treatment model. TF-CBT is an evolving model that we hope will continue to develop. Our consistent goal is to help children transcend trauma.

ACKNOWLEDGMENTS

Preparation of this chapter was supported by a grant from the Substance Abuse and Mental Health Services Administration (No. SM 61257).

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CHAPTER 16

Treating Autism Spectrum Disorder with the Early Start Denver Model

Katherine S. Davlantis, Geraldine Dawson, and Sally J. Rogers

OVERVIEW OF THE CLINICAL PROBLEM

Autism spectrum disorder (ASD) is one of the most commonly occurring neurodevelopmental disorders. It is characterized by persistent deficits in social communication and social interaction (e.g., social–emotional reciprocity, nonverbal communicative behaviors, developing, maintaining, and understanding relationships) and presence of restricted, repetitive patterns of behavior, interests, or activities (e.g., stereotyped or repetitive motor movements or speech, insistence on sameness, fixated interests that are abnormal in intensity or focus, hyper- or hyporeactivity to sensory input). Symptoms of ASD cause clinically significant impairment in social, occupational, or other important areas of functioning (American Psychiatric Association, 2013).

The most recent estimates suggest that one out of every 68 children in the United States is diagnosed with ASD (Christensen et al., 2016). Our ability to diagnose ASD at younger ages is improving, and this provides us with both an opportunity and a challenge. The opportunity lies in the fact that as children are diagnosed at even earlier ages, there exists the prospect of offering them earlier intervention services. The challenge is that there exist very few empirically validated intervention approaches that address the needs of children with ASD who are under 3 years of age. One such early intervention approach is the Early Start Denver Model (ESDM).

CONCEPTUAL MODEL GUIDING THE TREATMENT PROGRAM

ESDM (Rogers & Dawson, 2010a) is a comprehensive, naturalistic, developmental, behavioral early intervention designed for delivery to children ages 12–60 months who are diagnosed with or are at risk for ASD. The model uses knowledge of both typical development and the ways in which ASD affects early development to facilitate an appropriate developmental trajectory in children with ASD. The goals of ESDM are to accelerate children's developmental rates in cognitive, social–emotional, language, and adaptive domains, and to reduce the disabling effects of ASD symptoms.

Several key approaches underlie ESDM and converge to provide its foundation, including the Denver Model, Rogers and Pennington's model of interpersonal development in autism (Rogers & Pennington, 1991), Dawson's social motivation hypothesis of autism, applied behavior analysis (ABA), and pivotal response training (PRT).

The Denver Model was developed by Rogers and colleagues, beginning in 1981, at the University of Colorado Health Science Center in Denver. This model was a developmentally based group preschool program that focused on play, relationships, and language development for children with ASD or related disorders. The model focused on building close relationships between children with ASD and adults and other children in order to facilitate development. It utilized lively, dynamic interactions and adult positive affect within fun, motivating social games. These "sensory social routines," which became a key component of ESDM, motivated children to seek out social partners, initiate routines, and continue them through nonverbal and verbal communication. Additional tenets that became key principles of ESDM include a focus on assessing and teaching to all developmental areas; the use of an interdisciplinary team; a focus on teaching play and imitation skills, and utilizing imitation to teach skills in other domains; an emphasis on both verbal and nonverbal communication; and partnership with parents (Rogers, Hall, Oaski, Reaven, & Herbison, 2000; Rogers, Herbison, Lewis, Pantone, & Reis, 1986; Rogers & Lewis, 1989).

In 1991, Rogers and Pennington published a model of ASD that was strongly influenced by the writings of Stern (1985) and by prior infant research. They noted that early in life, children with ASD demonstrate impairment in imitation, thus disrupting the establishment of bodily synchrony with others. Because synchrony is an early way that infants and adults typically attune to one another, this impairment negatively impacts the emotional coordination between child and adult, leading to deficits in understanding feelings and mental states, and using intentional communication. By using imitation both as a focus of teaching and as a tool for teaching, ESDM focuses on strengthening the imitation skills in young children with ASD.

In the mid-2000s, Dawson began to collaborate with Rogers. Together, they created ESDM, which reflected an adaptation, expansion, and refinement of the Denver Model that was extended downward developmentally to address the needs of toddlers with ASD. A decision tree was added that describes how to alter teaching strategies when progress is not occurring at the expected rate. They published a manual that articulated ESDM principles, teaching practices, and methods for assessing fidelity of implementation (Rogers & Dawson, 2010a). A detailed curriculum tool that assesses child skills across many developmental domains also accompanies the manual, which guides assessment and treatment planning across the toddler–preschool period (Rogers & Dawson, 2010b).

ESDM was influenced by the social motivation hypothesis, proposed by Dawson and colleagues, which suggests that children with ASD demonstrate impaired sensitivity to the reward value of social stimuli, which leads to reduced attention to and interaction with such stimuli and fewer opportunities for social learning. Over time, the lack of social interaction leads to increased impairments in communication and social–emotional skills (Dawson et al., 2002; Dawson et al., 2004). A primary goal of ESDM is to enhance the reward value of social interaction and bring children back into the social loop, which leads to increased learning opportunities. Several principles of ESDM work together to accomplish this, including the use of sensory social routines and a focus on building interactive routines around objects and actions the children find inherently rewarding.

Within the context of a relationship-focused ESDM approach, the adult uses teaching strategies that have been defined and tested by scientists who study learning in young children. These strategies are typically associated with ABA. According to the basic principles of ABA, antecedent, behavior, and consequence are the three components that are critical to teach any person—including an infant or toddler who has or is at risk for ASD (Cooper, Heron, & Heward, 2006; Lovaas, 2002). ESDM uses principles from ABA, including delivering clear antecedents; providing appropriate consequences after children engage in behavior; and use of shaping, fading, prompting, and chaining behaviors to help children learn new skills.

PRT, an evidence-based early intervention for children with ASD, also influenced the evolution from the Denver Model to ESDM. PRT is based on ABA strategies, and is delivered in a naturalistic, interactive format, with a strong focus on optimizing a child's motivation to learn. PRT uses several techniques that are also central tenets of ESDM, including offering children choices within play, reinforcing children's attempts at exhibiting a new skill, and using inherent reinforcement (Koegel & Koegel, 1988; Schreibman & Pierce, 1993).

CHARACTERISTICS OF THE TREATMENT PROGRAM

In ESDM, ASD is understood as a developmental disorder that affects nearly every developmental domain. This understanding underlies the model's curriculum, which is laid out in the ESDM Curriculum Checklist (Rogers & Dawson, 2010b). This checklist includes skills in several domains, including receptive and expressive language, imitation, and joint attention. Within each domain, skills are sequenced developmentally. Upon entry into ESDM, each child is assessed using the ESDM Curriculum Checklist. From this, developmentally appropriate treatment objectives are written, which are then targeted over a 12-week period.

Treatment objectives within ESDM are important pieces of the model, as they guide the intervention and help keep intervention providers on track. From the curriculum assessment, the two to three skills per developmental domain that are chosen represent the skills that are next in line developmentally. These skills are turned into measureable treatment objectives containing clear descriptions of the antecedent(s) that should cue the demonstration of the skill, the skill itself, and requirements for mastery and generalization of the skill. Although the treatment objectives stem from items within the manualized curriculum, they are individualized to the particular child and his or her environment, and in addition to data from the curriculum assessment, parents' goals are used to develop objectives. Each of these treatment objectives is then broken into several teaching steps based on a task analysis of the skill, beginning with the child's current baseline level and ending with the fully mastered and generalized skill. These teaching steps are the focus of data that are collected on a regular basis and guide teaching within ESDM.

Teaching within ESDM is designed to be carried out in all types of naturalistic interactions, including daily caretaking and play activities. It is also flexible in terms of who can deliver the intervention, and where he or she can deliver it. ESDM can be delivered in preschool/day care programs, at home, in the clinic, and in the community, and by trained therapists or by parents. The intervention is often delivered in an intensive format, with trained therapists delivering multiple hours of therapy per week, primarily in children's homes. In addition, parents are often taught by highly trained parent coaches to use ESDM techniques in their everyday interactions. In these cases, parents often meet together with their coaches for 1–2 hours per week to learn and practice the techniques, and to discuss how the use of techniques is going at home. Finally, ESDM can be utilized within preschool/day care programs, with highly trained teacher–therapists delivering the model to one or many children at a time. Parent coaching is also frequently used as a component of intensive delivery and preschool/day care delivery, so that the child is surrounded by individuals providing high-quality, frequent teaching opportunities throughout the day.

EVIDENCE ON THE EFFECTS OF TREATMENT

ESDM is an evidence-based intervention, with many studies demonstrating its efficacy and effectiveness in a variety of formats. Overall, effects on child performance have been demonstrated in social communication, language, cognition, adaptive behaviors, and ASD symptoms. For parents, effects have been demonstrated in their interaction skills with their children and levels of stress and working alliances with therapists. Table 16.1 presents a review of published research articles.

Studies of Intensive Delivery

A series of three articles has reported on the results of the first randomized controlled trial (RCT) of intensive delivery of ESDM. In 2010, Dawson and colleagues published results of an RCT in which 48 toddlers with ASD, ages 18–30 months, were assigned to either an ESDM group or a comparison group that received treatment as usual in the community. Children in the ESDM group were offered 20 hours per week of one-on-one ESDM delivered in their homes by trained therapists, and the parents of those children were offered parent coaching twice per month. Those in the comparison group received approximately the same number of hours of

TABLE 16.1. Review of Published Research Articles Examining ESDM

Author(s) and year	Sample	Treatment procedures	Primary measures	Findings
Intensive delivery				
Dawson et al. (2010)	48 children ages 18–30 mo with autistic disorder/ASD	Random assignment to ESDM or community services group; ESDM group offered 20 hr/wk at home from trained therapists and parent coaching 2x/month; comparison group received community services; 2 yr of treatment	ADOS; ADI-R; MSEL; VABS; RBS	Children in ESDM group demonstrated significant improvements over comparison group in IQ, adaptive behavior, and diagnostic status.
Dawson et al. (2012)	Same as Dawson et al. (2010), plus age-matched typically developing children	Same as Dawson et al. (2010)	EEG activity during presentation of social vs. nonsocial stimuli	Children in ESDM group and typically developing children showed a shorter Nc latency and increased cortical activation when viewing faces, while those in the control group showed the opposite pattern.
Estes et al. (2015)	39 children followed up at 6 yr of age from the Dawson et al. (2010) study	Same as Dawson et al. (2010)	DAS—School Age Level; VABS; ADOS; RBS-R; ABC; ADI-R	Children in ESDM group maintained gains made in overall intellectual ability, adaptive behavior, symptom severity, and challenging behavior; while no group differences in core ASD symptoms were found immediately posttreatment, at age 6 yr children in the ESDM group demonstrated improved core ASD symptoms as compared to those in the control group.
Parent coaching				
Vismara, Colombi, & Rogers (2009)	8 children ages 12–36 mo with/at risk for autistic disorder	Parent coaching sessions for 1 hr/wk for 12 wk, plus four follow-up sessions	MSEL; ADOS; ESDM Curriculum Checklist; ESDM Teaching Fidelity Rating System; parent–child and therapist–child free play coded for child social	Majority of parents acquired ESDM strategies at level of mastery by the sixth session and maintained these through follow-up; children demonstrated sustained change and growth

			communication behaviors and child engagement	in social communication behaviors; children's number of spontaneous verbal utterances showed largest gains once parents demonstrated mastery of ESDM techniques.
Vismara, Young, Stahmer, Griffith, & Rogers (2009)	Four early intervention community sites with two to three therapists each; 29 children ages 24–51 mo with autistic disorder	Effectiveness trial to assess distance learning vs. live instruction for training community-based therapists to implement ESDM; for 5 mo, therapists learned how to use ESDM with children, and for another 5 mo, they learned how to impart this knowledge to parents; five of the therapists were trained live, and five were trained via telehealth technology	ESDM Teaching Fidelity Rating System (assessing therapist–child and parent–child fidelity); fidelity measure assessing parent coaching techniques; free play coded for child social communication behaviors and child engagement; Therapist Satisfaction Survey	Distance learning and live instruction were equally effective for teaching therapists to implement ESDM and to train parents; didactic workshops and team supervision were required to improve therapists' skill use; significant child gains occurred over time and across teaching modalities; parents implemented ESDM after coaching.
Vismara, Young, & Rogers (2012)	9 children ages 16–38 mo with ASD	Parent coaching sessions (via telehealth technology) for 1 hr/wk for 12 wk, plus three follow-up sessions	Parent–child free play coded for child social communication; Maternal Behavior Rating Scale; Child Behavior Rating Scale; ESDM Teaching Fidelity Rating System; MCDI; VABS-II; Feasibility and Acceptability Questionnaire	Parents were able to learn to deliver the intervention (average time to achieve fidelity: 6.41 wk); child social communication increased in concert with parent implementation.
Rogers et al. (2012)	98 children ages 14–24 mo with/at risk for ASD	Random assignment to ESDM parent coaching or control group to receive community services; ESDM group received 12 wk of parent coaching in ESDM (once weekly 1-hr sessions)	ADOS; MSEL; MCDI; VABS-II; imitation and social engagement probes; ESDM Teaching Fidelity Rating System (assessing parent–child fidelity); Working Alliance Scale for Interventions with Children; CPEA Intervention History Interview	No effect of group assignment on parent–child interaction characteristics or on child outcomes (both groups of parents improved interaction skills, and both groups of children demonstrated progress); parents in ESDM group demonstrated significantly stronger working alliances with their therapists than did those in the community group; children in the community group received significantly more intervention hours than those in the ESDM group.

(continued)

TABLE 16.1. *(continued)*

Author(s) and year	Sample	Treatment procedures	Primary measures	Findings
Vismara, McCormick, Young, Nadhan, & Monlux (2013)	8 children ages 18–45 mo with ASD	Parent coaching sessions (via telehealth technology) for 1.5 hr/wk for 12 wk, plus three follow-up sessions; self-guided website also available for parents	Parent–child free play coded for child social communication; Maternal Behavior Rating Scale; ESDM Teaching Fidelity Rating System; MCDI; Parent Satisfaction Questionnaire; tracking of parent website usage	Parents were able to learn to deliver the intervention (average time to achieve fidelity: 7.33 wk); child social communication increased in concert with parent implementation.
Estes et al. (2014)	Same as Rogers et al. (2012)	Same as Rogers et al. (2012)	Parent Sense of Competence Scale; Questionnaire on Resources and Stress; Life Experiences Survey	Parents in the ESDM group reported no increase in parenting stress, while those in the community group did; parental sense of competence did not differ between groups.
Vismara et al. (2016)	24 children ages 18–48 mo with ASD	Random assignment to ESDM parent coaching (via telehealth technology) or community early intervention; ESDM group received 12 wk of parent coaching (telehealth; once weekly 1.5-hr sessions) and had access to self-guided website; community group received monthly 1.5-hr conferencing sessions and accessed the same website (with alternate early intervention information replacing ESDM information)	Parent–child free play coded for child social communication; ESDM Teaching Fidelity Rating System; Parent Satisfaction Questionnaire; tracking of parent website usage	ESDM parents improved in their fidelity over those in the community group, although some in the community group also improved and not all ESDM parents met fidelity by end of treatment; ESDM parents used the website more and were more satisfied with the program; no treatment effect for social communication (skills improved for both groups).
Preschool/day care delivery				
Eapen, Crncec, & Walter (2013)	26 children ages 36–58 mo with autistic disorder	ESDM delivered by trained therapists during children's attendance at child care center for preschool-age children with ASD; 15–20 hr of group-based ESDM and 1 hr of one-on-one ESDM per wk for 10 mo	MSEL; SCQ; VABS-II	Significant postintervention improvements were found for children's DQ and specific performance on the visual reception, receptive language, and expressive language domains of the MSEL; parents reported significant

				increases in their children's receptive communication and motor skills on the VABS-II and a significant decrease in ASD-specific features on the SCQ.
Vivanti et al. (2013)	21 children ages 22–58 mo with ASD	Goal was to examine predictors of outcome; ESDM delivered at a staff–child ratio of 1:3 by trained therapists in an ASD-specific early learning and care center; 15–25 hr of group-based ESDM per wk for 1 yr; parent information session offered, but parents were not required to demonstrate fidelity of implementation	Functional use of objects task; predictive gaze paradigms to measure goal understanding and social attention; imitation task; MSEL; ADOS	Children with more advanced skills in functional use of objects, goal understanding, and imitation made the most gains in 1 yr of treatment.
Fulton et al. (2014)	38 children ages 38–63 mo with autistic disorder or PDD-NOS	ESDM delivered by trained therapists during children's attendance at child care center for preschool-age children with ASD; 1 hr of one-on-one ESDM per wk, 1 hr of intensive small group ESDM daily, and 15–20 hr/wk of group ESDM; maladaptive behaviors assessed at entry, 12 wk postentry, and at exit (after 11 mo of treatment)	ESDM behavior rating; VABS-II; SCQ; MSEL	Significant reductions were found in children's maladaptive behaviors over the course of the intervention, with 68% of children showing a treatment response by 12 wk and 79% by exit; change was accompanied by improvement in children's overall developmental level (MSEL), but not by significant changes on the VABS-II or SCQ.
Vivanti et al. (2014)	57 children ages 18–60 mo with ASD	27 children enrolled in ESDM program, who received 15–25 hr/wk of group ESDM delivered by trained therapists (six parent information sessions also offered, but parents were not required to demonstrate fidelity of implementation); 30 children enrolled in control program, who received a nonmanualized, community-based educational program in a similar setting and with a similar level of intensity; 12 mo of treatment	MSEL; ADOS; VABS-II; feasibility measures	Children in both groups made gains in cognitive, adaptive, and social skills; children in the ESDM group showed significantly higher gains in developmental rate and receptive language.

(continued)

TABLE 16.1. *(continued)*

Author(s) and year	Sample	Treatment procedures	Primary measures	Findings
Infant ESDM				
Rogers et al. (2014)	7 infants ages 7–15 mo who exhibited symptoms of ASD, plus several comparison groups matched from a study of infant siblings	Adapted version of ESDM appropriate for infants was utilized; aimed to reduce or alter six target symptoms and developmental patterns of early ASD; 12 wk of parent coaching (once weekly 1-hr sessions)	Infant Start Parent Fidelity Measure; Parent Satisfaction Rating; Working Alliance Scale for Interventions with Children; ADOS; MSEL; CPEA Intervention History Interview; Clinical Best Estimate Outcome Classification	Parents mastered the intervention and maintained skills after treatment ended; treated infants were significantly more symptomatic than those in most of the comparison groups at 9 mo of age but were significantly less symptomatic than the two most affected groups between 18 and 36 mo of age; at 36 mo of age, the treated infants had much lower rates of ASD and DQs under 70 than infants in a similarly symptomatic group who did not enroll in the treatment study.

Note. Hr, hour; wk, week; x, times; yr, year; DQ, developmental quotient; Nc, negative central; ADOS, Autism Diagnostic Observation Schedule; ADI-R, Autism Diagnostic Interview—Revised; MSEL, Mullen Scales of Early Learning; VABS, Vineland Adaptive Behavior Scales; PDD-NOS, pervasive developmental disorder not otherwise specified; RBS, Repetitive Behavior Scale; DAS, Differential Ability Scales; RBS-R, Repetitive Behavior Scale—Revised; ABC, Aberrant Behavior Checklist; MCDI, MacArthur-Bates Communicative Development Inventory; VABS-II, Vineland Adaptive Behavior Scales-II; CPEA, Collaborative Programs of Excellence in Autism; SCQ, Social Communication Questionnaire.

community services. After 2 years of treatment, children in the ESDM group demonstrated significant improvements compared to those in the community group in terms of intellectual quotient (IQ), adaptive behavior, and language skills, and significantly reduced ASD diagnostic severity compared to the community-treated children. In 2012, Dawson and colleagues published a study further investigating the sample from the 2010 study on the effects of ESDM on brain activity. This study is discussed in more detail later in the chapter.

Two years after completion of treatment, researchers conducted a follow-up study (Estes et al., 2015). Thirty-nine children, who were approximately 6 years old, were administered a comprehensive assessment battery to investigate group differences. Estes et al. found that children who had received ESDM earlier maintained the gains they had made in overall intellectual ability, adaptive behavior, symptom severity, and challenging behavior. While no group differences in ASD symptoms had been found at the conclusion of the original study, at age 6 years, children who had been in the ESDM group demonstrated improved core ASD symptoms. Children who had been in the ESDM group, too, received fewer intervention hours during the follow-up period.

Studies of Parent Coaching

Several research studies specifically investigated ESDM parent coaching. The studies that have used single-subject designs have consistently demonstrated positive effects of parent coaching on child learning, particularly in the areas of language, play, and imitation. In addition, two RCTs have been completed and published.

One of the RCTs was a multisite study assessing the efficacy of ESDM parent coaching (Estes et al., 2014; Rogers et al., 2012). In this study, parents of children with or at risk for ASD, ages 14–24 months, were randomly assigned to an ESDM or comparison group. Those in the ESDM group received 12 weeks of coaching that comprised once weekly 1-hour sessions, while those in the comparison group received community services. There was no effect of group assignment on parent–child interaction characteristics or on child outcome, but parents and children in both groups improved equivalently over time. Interestingly, the comparison group received more than twice as much intervention as did the ESDM group. In addition, parents in the ESDM group reported significantly stronger working alliances with their therapists than did those in the comparison group, and parents in the ESDM group reported no increase in parenting stress, while those in the comparison group did.

The second RCT investigated ESDM parent coaching delivered via telehealth technology (Vismara et al., 2016). In this study, 24 parents of children with ASD, ages 18–48 months, were randomized to receive either ESDM parent coaching or community services. Those in the ESDM group received 12 weeks of coaching that comprised once weekly 1.5-hour remote sessions plus access to a self-guided website containing information on ESDM. Those in the community group received monthly 1.5-hour conferencing sessions and accessed the same website, with alternative early intervention information substituted for ESDM content. It was found that ESDM parents improved in their fidelity of implementation over those in the community group, although some in the community group also improved, and not all ESDM parents met fidelity by the end of treatment. Parents in the ESDM group tended to use the website more and were more satisfied with the program. No treatment effect for child social communication was found, but skills of children in both groups improved over time.

Studies of Preschool/Day Care Delivery

More recently, researchers have investigated the use of ESDM in preschools and day care programs. For example, researchers conducted a well-controlled, comparative study assessing the progress of 27 children with ASD, ages 18–60 months, enrolled in a public day care-based ESDM program, compared to the progress of 30 children enrolled in a high-quality, public ASD specialty program that used an eclectic approach. Settings and treatment intensity for the two groups were similar. Those in the ESDM program received 15–25 hours of group-based ESDM per week, and their parents were offered six information sessions on ESDM. Children in both programs made gains in cognitive, adaptive, and social skills, but children in the ESDM program made significantly higher gains in developmental rate and receptive language skills (Vivanti et al., 2014).

ESDM Adapted for Use with Infants

One recent pilot study (Rogers et al., 2014) investigated an adaptation of ESDM for use with infants ages 7–12 months who exhibited signs of ASD. The treatment aimed to reduce or alter six target symptoms (e.g., visual fixation on objects and lack of intentional communicative acts) and was provided via parent coaching for 12 weeks (once weekly 1-hour sessions). Investigators compared the outcomes of seven treated infants to several control groups, including infant siblings of older children diagnosed with ASD, and found that treated infants were significantly less symptomatic at follow-up than those in the control groups.

Neural Mechanisms Underlying ESDM Treatment

Dawson et al. (2012) reported on the first study to demonstrate that early intensive behavioral intervention based on ESDM was associated with improvements in brain activity. Children who participated in the Dawson et al. (2010) RCT of ESDM participated in an assessment of brain activity at the end of the trial, and were compared to an age-matched group of typically developing children. Electroencephalographic (EEG) activity (event-related potentials [ERPs] and spectral power) was measured in the anterior and posterior left- and right-hemisphere regions and the anterior and posterior central regions during the presentation of photos of female faces versus objects. The ESDM group and typically developing children showed a more rapid (shorter) Nc ERP peak (reflecting attentional engagement) and increased cortical activation (decreased alpha power and increased theta power) when viewing faces compared to objects, whereas the community intervention group showed the opposite pattern. Greater cortical activation while viewing faces was associated with improved social behavior by parent-report measure.

This study was proof of the principle that early behavioral intervention can alter both behavioral and brain developmental outcome in young children with ASD. These findings suggested that the strategies used in ESDM not only serve to change children's patterns of attention toward the social environment, reflected in increased attention toward and engagement with people, but also to enhance brain activity in regions related to social processing. A number of potential neural mechanisms may contribute to the efficacy of ESDM intervention (Sullivan, Stone, & Dawson, 2014).

First, by beginning behavioral intervention early in life, the intervention capitalizes on the experience-expectant plasticity of the immature brain. If intervention begins early enough, skills are taught during the period when language and social skills would typically emerge. The neural readiness of the brain during the natural period of skill acquisition might account for the relative ease with which children with ASD can acquire skills at younger ages. As the young infant's brain develops and engages with the environment, neural circuits become established that reflect his or her unique experience. If that infant is mostly paying attention to the world of objects, neural circuits underlying object perception become strengthened, while those underlying language and social processing are neglected. As time progresses, the flexibility of the brain decreases as more neural tissue becomes specialized for acquired skills. By intervening early, there is a greater opportunity to facilitate the normal brain specialization for language and social skills, such as the specialization of the left temporal region for language and the right temporal region for face processing.

Several studies have shown that children with ASD show atypical brain specialization, such as right-hemisphere or lack of hemispheric specialization for linguistic processing (e.g., Eyler, Pierce, & Courchesne, 2012; Lombardo et al., 2015). In a study that examined brain ERPs to linguistic stimuli, it was found that, on average, 2-year-olds with ASD exhibited atypical patterns of hemispheric specialization during speech processing. Those who exhibited left-hemisphere specialization for linguistic stimuli had better outcomes at age 6 years in several developmental domains (Kuhl et al., 2013).

A second neural mechanism that may contribute to the positive effects of ESDM pertains to the hypothesized deficiencies in social motivation associated with ASD. Such deficiencies might reflect dysfunction in the dopaminergic projections to the striatum and frontal cortex, particularly the orbitofrontal cortex, which has been shown to mediate the effects of reward on approach behavior. Representations regarding the anticipated reward value of a stimulus begin to motivate and direct attention by the second half of the first year of life. In a prospective study of infant siblings of children with ASD, Jones and Klin (2013) reported that infants who later developed ASD showed normal attention to social stimuli early in life but subsequently showed a decline in attention to eyes from ages 2–6 months. It has been found that by 8–10 months of age, infants who later develop ASD fail to orient when their names are called and pay less attention to people (Werner, Dawson, Osterling, & Dinno, 2000). Studies have demonstrated that preschool-age and older children with ASD fail to orient to social and language stimuli (Dawson et al., 2004; Dawson, Meltzoff, Osterling, Rinaldi, & Brown, 1998; Magrelli et al., 2013; Sasson et al., 2007) and orient to nonsocial contingencies rather than biological motion (Klin, Lin, Gorrindo, Ramsay, & Jones, 2009).

It is possible that this decline in social attention represents differences in the development of reward-related neural circuitry. Furthermore, the development of representations regarding anticipated stimulus reward value depends on long-range functional connectivity between the frontal lobe and other brain regions (i.e., connectivity across rather than within regions). It has also been suggested that the inability to process complex multisensory stimuli, which could be related to deficient functional connectivity, makes complex social stimuli difficult to comprehend and, therefore, less rewarding (Stevenson, Segers, Ferber, Barense, & Wallace, 2014).

ESDM is designed to address deficits in social motivation and attention by drawing the child's attention to social information and making social interactions rewarding. By monitoring the child's approach–withdrawal behavior, the adult is vigilant about the possibility that the interaction is overstimulating and modulates his or her own behavior to optimize the arousal level of the child. ESDM's use of sensory social routines is designed to directly address deficiencies in social motivation. Such routines are ones that the child finds emotionally rewarding and involve direct interaction between the child and adult. Through such routines, the young child with ASD begins to associate social interaction with reward. Other strategies are designed to reward spontaneous visual attention to the adult's face and eyes by providing access to highly preferred objects and experiences directly following gaze toward the adult's face. Over time, the child begins to learn that paying attention to people results in positive experiences and begins spontaneously paying attention to other people.

The third potential neural mechanism hypothesized to contribute to the efficacy of ESDM is the use of strategies that simultaneously target multiple objectives and multisensory experiences. Some ASD interventions break teaching objectives into small units, whereas ESDM targets multiple objectives simultaneously. One benefit is that this requires the coordination of multiple brain regions and likely promotes enhanced long-range neural functional connectivity. ASD has been conceptualized as a disconnection syndrome (Geschwind & Levitt, 2007) based on numerous studies using EEG (Murias, Webb, Greenson, & Dawson, 2007; Orekhova et al., 2014) and fMRI (Williams et al., 2006) that have demonstrated deficient long-range functional connectivity in individuals with ASD. Elison et al. (2013) reported that differences in frontal–limbic connectivity, based on measures of diffusion tensor imaging, begin to emerge by 6 months of age in infants who later develop ASD and are associated with later impairments in joint attention.

FUTURE DIRECTIONS

Our pilot study of infant treatment (Rogers et al., 2014), combined with recent studies of treatment of infant siblings (Green et al., 2015), represents the closest the field has come to reaching the goal of early ASD screening efforts. These efforts refer to identifying infants at risk of developing ASD as early as possible, then providing a supportive, scalable intervention that can prevent, reverse, or minimize the effects of symptoms on their development. These arguments suggest that the earlier supportive intervention begins, the greater the opportunity for canalizing infant development into more typical trajectories and maximizing children's behavioral and brain development into patterns that support social communication, social learning, and social motivation.

While this goal has been driving early identification, screening, and diagnosis efforts for years, several realities highlight the complexity of the task. The first reality is the variable onset of ASD in terms of both age and pattern. The longitudinal studies of infant siblings have made it clear that many children with ASD do not have behavioral symptoms that predict diagnosis before the age of 12 months. In addition, while many biological reports offer the promise of a biological marker of ASD that may help us detect ASD risk in infancy, we currently do not have biological or behavioral markers detectable in children under 12 months of age that differentially predict later onset of ASD.

The idea that ASD is present in the infant at or before birth reflects our grounding in the biological basis of ASD. However, ASD is defined by behavior, not biology, and it is behavior that differentiates it from other neurodevelopmental disorders. The infant sibling studies make it clear that the behavioral symptoms of ASD—the defining features of the disorder—most often emerge in infants who have not demonstrated visible social differences in the first 6 months of life. A surprising proportion of children (estimates vary from approximately 38% [Shumway et al., 2011] to 61.5% [Ozonoff et al., 2011]) who develop ASD develop it well into their second and even third years of life. Thus, even if we had excellent infant screeners, we would not be able to identify the children whose ASD does not become apparent until toddlerhood.

The second challenge is that we do not have infant screeners that are very successful in predicting later diagnosis in infants much younger than 12 months (Ozonoff et al., 2010; Zwaigenbaum et al., 2005). While we have a working knowledge of the early symptoms from studies of infants who do show very early and continuing symptoms of ASD (Bryson et al., 2007), we have also learned that these symptoms are transient in a high-risk group and therefore do not predict later diagnosis.

The third challenge is that symptoms associated with ASD in infants under 12 months of age are not specific to ASD. The attachment literature has carefully defined the behaviors associated with ambivalent, avoidant, and disorganized attachment patterns, and these symptoms involve repetitive and stereotypic behavior, poor eye contact, atypical affect, and avoidance or lack of typical social interaction patterns with caregivers.

The promise of improving outcomes for infants who are in the process of developing ASD continues to motivate early interventionists, and more and more parents are reaching out to clinicians with concerns about ASD developing in their infants. Our field will develop the tools and interventions needed to identify, differentiate, and treat infants who are in the process of developing ASD, and when we do, it is likely that outcomes for these infants will be even more successful than the outcomes for toddlers with ASD who receive the best treatments that our field can currently offer. However, given what we know about the onset of ASD, we will have to have screening efforts that continue across the first 4 years of life in order to provide appropriate interventions as early as possible for each child with ASD.

CONCLUDING COMMENTS

ESDM is one of the few empirically validated intervention approaches that addresses the needs of children with ASD who are under 3 years of age. A comprehensive, naturalistic, developmental, behavioral early intervention, the model uses knowledge of typical development and knowledge of the ways in which ASD affects early development to facilitate an appropriate developmental trajectory in these children. A great deal of evidence supports the efficacy and effectiveness of ESDM in a variety of formats, including intensive delivery, parent coaching, and preschool/day care delivery. ESDM, too, has been adapted for infants ages 7–12 months who exhibit signs of ASD, and is therefore promising for addressing the need for empirically validated interventions for very young children with ASD, a need that only grows greater as our field makes strides in identifying and diagnosing children at younger and younger ages.

We are aware that there are significant challenges in disseminating empirically validated interventions within community settings, especially within those settings that have low resources. Many children with ASD do not have access to high-quality, intensive early interventions such as ESDM, so our focus now turns toward dissemination of the model. There is an urgent need to scale up services for developmental disorders both in the United States and globally, and two strategies for doing so in remote and low-resource communities have received recent attention. First, early interventions that can be delivered by people who are not trained professionals, including both parents and paraprofessionals, will allow communities greater access to treatment. Second, the use of telehealth programs that can provide training from remote locations to both professionals and parents promises to expand access to expertise and support. Efforts focused on both of these strategies within ESDM are currently underway, in the hope that this empirically validated intervention will become more available across the globe to infants and toddlers with or at risk for developing ASD.

ACKNOWLEDGMENTS

The writing of this chapter was supported by grants (to Geraldine Dawson) from the Marcus Foundation and the National Institutes of Health (No. U19 MH108206–01).

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CHAPTER 17

Pivotal Response Treatment for Individuals with Autism Spectrum Disorder

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OVERVIEW OF THE CLINICAL PROBLEM

Autism spectrum disorder (ASD) has received much attention because of both the steady rise in prevalence and the fact that the etiological basis continues to remain largely unknown. Once rare, the Centers for Disease Control and Prevention (CDC; 2015) indicate that the prevalence is currently 1 in 68. Since Kanner's (1943) recognition of ASD as a distinct developmental disorder, the defining characteristics of persistent impairments in social communication and interaction, and restricted and repetitive patterns of behaviors, interests, or activities, have remained largely unchanged.

The social vulnerabilities associated with ASD have a lifelong, cascading impact on subsequent development (Jones & Klin, 2009). For example, difficulties with social communication in individuals with ASD may also result in disruptive behaviors, such as tantrums, aggression, and self-injury, and problem behaviors are a significant source of stress to families (Hastings, 2003; Lecavalier, Leone, & Wiltz, 2006). Thus, there has been a growing demand for systematically evaluated interventions that address the comprehensive needs of the child and the family as a whole, and that result in meaningful outcomes over time and across widespread areas of functioning (R. Koegel & Koegel, 2012).

CONCEPTUAL MODEL GUIDING THE TREATMENT PROGRAM

Initially developed interventions for ASD, derived from speculative causation theories rather than empirical evidence, were generally ineffective (R. Koegel, Schreibman, O'Neill, & Burke, 1983). Subsequent empirically based treatment procedures in the 1960s used operationally defined behavioral principles and resulted in measurable improvements; however, the interventions proved to be extremely labor and time intensive (Lovaas, 1977). In an effort to improve the effectiveness and efficiency of interventions, researchers began to focus on the identification of pivotal responses. The theoretical underpinning of identifying pivotal responses was that if certain core areas were targeted, widespread collateral changes in numerous other untargeted behaviors would occur, resulting in very fluid integrated behavioral gains. This concept of producing widespread generalized changes is supported by the research on response covariation (Kazdin, 1982). This chapter focuses on the pivotal area of motivation for children with ASD, which results in widespread collateral behavioral gains in the core ASD symptoms, as well as increasing the child's learning curve, improving parental and child affect, decreasing parental stress, and decreasing disruptive and interfering behaviors. This core area of motivation underlies other important pivotal areas such as child self-initiations, joint attention and responsivity to multiple stimulus input, and self-regulation of behavior. In the next section, we focus on the core area of motivation and its pivotal roles in multiple areas of functioning for children with ASD.

Motivation

Motivation to respond to social and environmental stimuli is essential for typical development. Core symptoms of ASD, such as social communication problems, may result in children experiencing repeated failures, as well as noncontingent assistance and reinforcement from caregivers. Consequently, they may fail to understand the interconnection between their behavior and the consequences from their environment, and overreliance on adult support. This appears to result in lethargy, also seen in conditions of learned helplessness in numerous populations (R. Koegel & Egel, 1979; R. Koegel, O'Dell, & Dunlap, 1988). Pivotal response treatment (PRT) focuses on decreasing the presence of learned helplessness by enhancing the relationship between children's responses and their contingent acquisition of reinforcers. Functionally, this serves to increase children's subsequent likelihood, rate, and accuracy of responding, while decreasing response latencies. Such improvements in environmental and social interactions are important for language, social, and cognitive development, as well as for creating more positive long-term outcomes. In terms of a transactional model, once children are motivated to respond, a positive feedback loop is created wherein additional learning opportunities are provided, thus generating the social–environmental conditions for the development of more complex behaviors, which are necessary for social, communicative, and cognitive competence.

The PRT paradigm builds on earlier effective techniques tested in the applied behavior analysis (ABA) research but incorporates enhanced motivational strategies. Early ABA interventions focused on using repetitive, drill-like practice in a stimulus–response–consequence discrete trial format, teaching one target behavior at a time. Clear consequences for behaviors were provided by giving the child edible reinforcers for correct responding and punishment or extinction for incorrect responses. The targeted behaviors were taught within a strict shaping paradigm, and the teaching was repeated in a drill format until the criterion was reached on each behavior (see Cooper, Heron, & Heward, 2007, for a detailed presentation of ABA procedures). PRT also applies the operant conditioning format of ABA but differs importantly from traditional discrete trial approaches by focusing on increasing and maintaining the intrinsic motivational qualities within the stimulus–response–consequence interaction.

Several specific motivational strategies used in PRT have been systematically identified through empirical research: child choice, task variation, interspersal of maintenance tasks, reinforcement of response attempts, and the use of natural and direct reinforcement. When provided as a package, these strategies improve children's responsiveness to social and environmental learning opportunities. The first empirical study that documented the effectiveness of the treatment package (then called the "natural language paradigm" [NLP]) focused on expressive verbal communication with children who were nonverbal and who had undergone lengthy periods of ABA intervention (Koegel, O'Dell, & Koegel, 1987). Data from our center and others suggested that about 50% of nonverbal children would learn functional expressive communication using the traditional ABA procedures (Prizant, 1983). In contrast, when motivational procedures are incorporated, a far greater percentage of children learn to use functional expressive communication. Age has been identified as an important factor influencing variability in response to PRT. If intervention begins before age 3, upward of 95% of the children become verbal; if intervention begins between ages 3 and 5 years, more than 85% become verbal; and if intervention begins after age 5, only about 20% of the nonverbal children learn to use expressive verbal communication (L. Koegel, 2000). Adding motivational components to the intervention, along with implementing intervention at the earliest age possible, are important ingredients to better outcomes.

Motivation to Self-Initiate

Self-initiations occur frequently in typically developing children and serve various functions, including information seeking, initiating and maintaining attention, and seeking assistance. Initiations can vary in form, ranging from joint attention bids in prelinguistic children to elaborate question-asking in verbal children, and are inherently social in nature.

Whereas initiations occur frequently in typically developing children, they occur infrequently or are absent altogether in children with ASD. When children with ASD exhibit self-initiated communication, it is often limited to behavior regulation contexts, such as requests or protests. Retrospective research from our center suggests that the presence of self-initiations appears to be a prognostic indicator associated with more favorable long-term outcomes, and children with ASD who are taught to use self-initiations also have more favorable outcomes (L. Koegel, Koegel, Shoshan, & McNerney, 1999).

This promising research suggests that when children with ASD are motivated (through PRT) to self-initiate social interactions, particularly important concomitant changes occur in numerous areas of functioning. For example, improvements in social communication and acquisition of linguistic targets, as well as reductions in aggression, self-stimulation, self-injury, and tantrums, have been documented (R. Koegel, Koegel, & Surratt, 1992; Mohammadzaheri, Koegel, Rezaei, & Bakhshi, 2015). Targeting this pivotal area of motivation to self-initiate social interactions results in learning that increases autonomy as children become less reliant on adult-delivered learning opportunities. When children engage in self-initiations, they appear more appropriate on "normality" scales, sometimes rated as appearing completely appropriate (L. Koegel et al., 1999). In short, motivating children to engage in initiations provides them with tools that result in self-learning, thereby decreasing the need for the provision of ongoing learning opportunities created by a parent, teacher, or other adults. Teaching techniques that are not only social in nature but also result in learning have the potential to reduce parental stress and have been shown to be pivotal in terms of widespread collateral improvements and related long-term positive outcomes.

Motivation to Socialize

Recent PRT research efforts have focused on maximizing social engagement among young children. Children with ASD do not appear to be completely devoid of engagement. Rather, they often engage with the nonsocial (instead of social) aspects of their immediate environment (Klin, Lin, Gorrindo, Ramsey, & Jones, 2009; Shic, Bradshaw, Klin, Scassellati, & Chawarska, 2011). Thus, a promising research avenue for establishing social connectivity with these individuals appears to lie in taking advantage of these preexisting interests within a PRT intervention context. Specifically, when the salient characteristics of nonsocial interests are identified and then embedded within a reciprocal social activity, children demonstrate robust signs of verbal and nonverbal social interest (e.g., verbal initiations, eye contact, directed facial expressions). Such evidence suggests that it is possible to leverage preexisting motivation to elicit sustained social engagement with parents and other family members (R. Koegel, Vernon, & Koegel, 2009; Vernon, Koegel, Dauterman, & Stolen, 2012; Vernon, 2014).

Other research has explored the use of the PRT paradigm to target early joint attention (e.g., Vismara & Lyons, 2007). Using items of perseverative interest as stimuli during PRT intervention for communication resulted in immediate improvements in joint attention without specific intervention for joint attention. Furthermore, over a period of approximately 2 months of PRT intervention, collateral gains in joint attention were observed without specifically targeting this important skill (Vismara & Lyons, 2007). These collateral changes in areas critical to early development have the potential to help the child with ASD get on a typical developmental track. Similarly, preliminary research suggests that PRT can be used with prelinguistic infants to improve prelinguistic socialization, specifically, using child choice, task variation, and social reinforcers with a classical conditioning paradigm to expand the social engagement and interest in infants below 1 year of age (L. Koegel, Singh, & Koegel, 2010). It is our hope that such early intervention may prove to avert some of the more serious symptoms caused by a lack of social engagement, but much research is still needed to detect and treat autism at this early age (Bradshaw, Steiner, Gengoux, & Koegel, 2014).

Another successful area of research has focused on using PRT procedures to motivate children with ASD to socially interact with their families and typically developing peers. Specifically, the area of child choice has been expanded to the concept of identifying activities that are mutually reinforcing to both the children with autism and their typically developing peers. This results in increased social play, and higher levels of positive affect and joint attention. One such technique focuses on incorporating the children's repetitive and restricted areas of interest into age-appropriate social activities (Baker, Koegel, & Koegel, 1998). For example, one child who rarely participated in social play was found to have a ritualistic interest in maps and geography, resulting in a vast accumulation of knowledge on this topic. A playground game of "map tag" was developed as a mutually reinforcing activity (developed from both the typical peer's preference for tag games and the targeted child's preference for map-related themes). In the context of this preferred theme, the child with autism exhibited increases in social play and affect. Furthermore, once the child gained experience with playground games, he was motivated to participate with peers in other playground activities outside of his restricted interests. His increased motivation for nonritualistic play with peers implies that exposure to social play became intrinsically motivating, and that reinforcement hierarchies can be altered if they are carefully created using child choice.

Similar successful intervention programs have been developed by creating clubs, playdates, and camp activities around the targeted child's interests (R. Koegel, Werner, Vismara, & Koegel, 2005). This initial research has been replicated to be applicable to older elementary school children in the context of organized school clubs around the children's interests (Baker, Koegel, & Koegel, 1998), as well as with adolescents in middle and high school (R. Koegel, Fredeen, Kim, Daniel, Rubinstein, & Koegel, 2012; R. Koegel, Kim, Koegel, & Schwartzman, 2013). Most recently, encouraging participation in extracurricular clubs around the interests of college students has been shown to improve socialization, grade-point average, overall mental health, and employment for some. However, peer support at the club, along with weekly practice with pragmatic areas causing difficulty in natural settings, appears to be important (L. Koegel, Ashbaugh, Koegel, Detar, & Regester, 2013). As a whole, these studies suggest that the individualized motivational interests of individuals on the autism spectrum are extremely helpful, if not critical, in improving social interaction and the plethora of other positive benefits that result from socialization.

Goals of Treatment

The goal of PRT is to provide comprehensive intervention in key areas that increase independence and self-education throughout the day, with rapid widespread improvement in the condition of autism, resulting in time and cost-efficiency, without the need for constant vigilance from an intervention provider (L. Koegel, Koegel, Ashbaugh, & Bradshaw, 2014). In our approach, the teaching of pivotal areas is coordinated throughout the children's day with parents, teachers, and other service providers. To maximize the likelihood of a typical developmental trajectory, treatment is provided within natural, inclusive settings (i.e., the same settings and activities in which the individuals would participate if they did not have a disability), with programs developed by individuals with extensive clinical experience in the areas of ASD, inclusion, and positive behavior support strategies.

Parents' collaboration, education, and empowerment are important features of the program. Of particular importance is the expertise and devotion parents contribute to the intervention process, because they can provide consistency throughout their children's waking hours and over the years, as their children move to new teachers and interventionists. Within a parent education model, we use modeling and a practice-with-feedback format through a manualized intervention wherein parents are shown procedures, then work with their children and are given feedback regarding procedures for improving pivotal areas such as motivation and child initiations in the context of social communication, academics, and so on. Parent education programs have been effective for addressing a large number of behaviors, including increasing social communication, decreasing disruptive behaviors, and improving the generalization of treatment gains (Brookman-Frazee Stahmer, Baker-Ericzen, & Tsai, 2006). Equally important is that PRT has been shown to reduce family stress as it is blended into daily routines and developed within individual family values (R. Koegel, Bimbela, & Schreibman, 1996).

CHARACTERISTICS OF THE TREATMENT PROGRAM

PRT can be delivered in a variety of different settings (clinics, homes, communities, schools) and levels of intensity. The number of hours provided to each family varies depending on child and family needs. Total intervention time ranges from a few hours per week of parent training to more than 40 hours per week, with the goal of having the parents implement the procedures throughout the child's waking hours during family routines and daily activities. For example, one community program delivered PRT 1 hour/week for 12 weeks. Participants demonstrated improvements in communication skills during this short intervention period (Baker-Ericzen, Stahmer, & Burns, 2007). Although typically applied in an individual parent education format, it has also been successful in a group format (Hardan et al., 2015). In addition, we have also developed several evidence-based models for families who live in geographically distant areas (Symon, 2001). Families can participate in either an individual- or group-intensive workshop that focuses on parent education. Following participation and completion of fidelity of implementation measures, families can also effectively train others who work with their children to implement the PRT procedures that were targeted. Specifically, families participate with their children in a weeklong intensive training program, receiving daily 5-hour parent education sessions. Similar multifamily workshops have been implemented wherein families bring in video recordings of themselves using PRT with their children for daily feedback. In addition, we have documented the effectiveness of a trainer-of-trainers format in which training was initially implemented by our staff outside of our geographic area, using practice with feedback and videotapes for certification of implementation fidelity (Bryson et al., 2007). Although most PRT is delivered in parent education context, it has recently been adapted for use in the classroom by teachers to support educational, social communication, and behavioral goals. Our clients range from infants to adults, may have few or extensive support needs, and represent various cultural backgrounds. Intervention is individualized and dynamic, based on each client's presenting symptoms and the family's goals, values, and cultural identity. Our most recent research suggests that matching clinicians of similar ethnic backgrounds with the family may even result in increased social support.

PRT procedures are manualized (e.g., R. Koegel et al., 1989; L. Koegel, 2011; R. Koegel & Koegel, 2012), and each of the motivational procedures is taught during parent education sessions. Teaching examples are provided, and opportunities for parents to apply the procedures to their own children are provided in the context of a curriculum based on activities in which the children would engage if there were no disability (L. Koegel et al., 2006). In addition, an integral part of PRT is to provide feedback to the parents while they work directly with their children. Effectively engaging and teaching parents is an important component of clinician training. It is important that clinicians be able to work collaboratively with families to determine target behaviors that will make a difference in their lives, and to provide continuous positive and corrective feedback (R. Koegel & Koegel, 2012).

Throughout the intervention sessions, the clinician provides the parents with immediate *in vivo* feedback on their implementation of the PRT procedures while they work with their children. For most, the initial focus of intervention is on using the motivational strategies to increase their responsivity to learning opportunities. Specifically, parent intervention sessions begin with feedback on the following points:

1. *Use of child-selected stimulus materials.* Procedures that involve child-preferred activities typically increase a child's attention to the task, and the use of natural reinforcers that are integrally related to the target behavior can direct the child's attention to the relevant cues in the activity. Therefore, parents are taught to provide instructional stimuli when the child is attending and to increase the child's motivation to respond by using child-selected materials, activities, and toys and following the child's lead throughout the teaching interactions. Giving the child input into determining the stimuli to be used during instruction maximizes the child's interest in the learning situation and improves the rate and generalization of learning (e.g., R. Koegel, Dyer, & Bell, 1987). Child-selected stimuli are not necessarily limited to items and materials; for example, a child may want to choose the topic of conversation or the order of activities.

2. *Direct, natural reinforcers are used whenever possible.* Direct, natural reinforcers are directly and functionally related to the task. In contrast, arbitrary or indirect reinforcers do not fall within the chain of behaviors required to produce the positive consequence. As a simple example, a direct, natural reinforcer for a child saying the word "ball" would be throwing the child a ball, as opposed to giving him or her a food item or token reinforcer for the vocalization. Research suggests that the response–reinforcer relationship can be enhanced by providing direct and natural reinforcement, thus improving overall motivation to respond to the interaction (R. Koegel & Williams, 1980). Similarly, having the child spell, write, or read words of his or her favorite items is an opportunity to provide direct reinforcers for academics (L. Koegel, Singh, Koegel, Hollingsworth, & Bradshaw, 2014).

3. *Interspersing maintenance trials.* This strategy involves interspersing previously learned tasks with new acquisition tasks. The goal is to increase the success that a child experiences, thereby increasing the likelihood that he or she will attempt the task again. This phenomenon has also been described as "behavioral momentum," such that the child is provided with a target acquisition task following a string of rapid correct responses, thereby increasing the likelihood that the momentum will result in subsequent correct responding. This differs from other techniques that present successive trials of acquisition tasks, which create a more challenging and often frustrating situation for the child and can result in greater levels of avoidance and disruptive behavior.

4. *Reinforcing attempts.* This strategy rewards children's clear, appropriate attempts to respond to instructional materials or natural learning opportunities. Such response attempts are reinforced, even if the response is not a successive approximation to the targeted behavior, as in a strict shaping paradigm. Interestingly, when response attempts are reinforced, children increase their subsequent correct productions of the target behaviors and do so with a considerable amount of positive affect (R. Koegel et al., 1988). This component of teaching may be particularly important for children with ASD who experience repeated difficulties when they attempt a difficult task and whose motivation therefore may have been extinguished by the attempt (Koegel & Egel, 1979). Table 17.1 compares discrete trial teaching procedures, with and without incorporation of these motivational variables.

TABLE 17.1. Differences between the Discrete Trial (Individual Target Behavior) and PRT Paradigms

	Traditional discrete trial (individual target behavior) paradigm without a motivational package	Motivational PRT paradigm
Stimulus items	Chosen by clinician Repeated until criterion is met Phonological sounds, irrespective of functionality in the natural environment, shaped into words	Chosen by child Varied every few trials Labels for age-appropriate items/activities found in the child's natural environment
Prompts	Manual (e.g., touch tip of tongue or hold lips together)	Clinician repeats item/activity label
Interaction	Clinician presents stimulus item; item not functional within interaction	Clinician and child play with stimulus item (i.e., stimulus item is functional within interaction)
Response	Correct responses or successive approximations reinforced	Looser shaping contingency so that intentional attempts to respond are also reinforced
Consequences	Edible reinforcers paired with social reinforcers (praise)	Natural reinforcer (e.g., opportunity to play with the stimulus item) paired with social reinforcers

Amount of Intervention

There appears to be a consensus in the field that children with ASD require intensive intervention throughout the day; however, there is also considerable ambiguity about how to feasibly accomplish this goal. Our approach is that a coordinated effort across all settings and significant individuals can result in large amounts of intervention being delivered on an ongoing basis throughout the child's day, without excessive effort on the part of any one individual.

Our research suggests that most parents/caregivers can reach our required 80% criterion on fidelity of implementation measures for correct use of the basic motivational procedures within approximately 25 hours. This suggests that it is very feasible to train the significant individuals in the child's environment, thus providing for comprehensive intervention throughout the child's waking hours. We rate our fidelity of implementation in 1-minute intervals, so a minimum of one trial needs to be provided during each minute, thereby providing numerous opportunities for responding.

Self-Initiations

An additional way to increase the amount of intervention is to teach children to initiate opportunities for teaching interactions. Typically developing children use a variety of self-initiated queries that result in access to further learning throughout the day. These queries appear within typically developing children's first lexicon and continue throughout the lifespan. In contrast, most children with ASD and other language disabilities use a limited number of such initiations or none at all. Therefore, we specifically target a variety of child-initiated interrogatives, such as "What's that?"; "Where is it?"; and "Whose is it?" Typically, "what" and "where" questions emerge in about the second year of life, whereas "whose" questions appear in the third year. These queries (and other types of spontaneous initiations such as "Look" and "Help") can serve as a means for the child to obtain additional linguistic information from others throughout the day.

Examples of Motivational Treatment Interactions for Self-Initiated Queries

"What's That?"

A rudimentary form of the interrogative "What's that?" appears within typical children's first lexicon and provides them with a self-initiation to access and acquire vocabulary words. We first identify highly desired items (e.g., favorite snacks, action figures) to provide a motivational context, so that when the children are taught the query, positive consequences follow. The items are then hidden in an opaque bag, and children are prompted to ask, "What's that?" After asking the question, a (highly desired) item is taken out of the bag and labeled: "It's a [item name]." Then the children are given the item. The prompt is gradually faded until the children are spontaneously asking the question. Once children are asking the question and repeating the label, neutral (less desired) items are gradually faded into the bag. Even during the fading of the highly desired items, children are still being provided with a partial schedule of reinforcement that may be helpful in creating a positive context for initiations, as well as generalized and maintained effects of the intervention. Thus, a learning situation that parallels typical language development has been created.

"Where Is It?"

Developmentally typical language learners begin using "Where" questions after "What's that?" To teach this interrogative to children with ASD, similar motivational strategies are incorporated. Specifically, the children's favorite items are hidden in a variety of different locations. They are prompted to ask, "Where is it?" Parents or other adults respond using the targeted preposition (e.g., "*in* the box," "*on* the dresser," or "*next to* the refrigerator"). Throughout this process, the children are learning both self-initiation and a variety of prepositions.

"Whose Is It?"

Motivating children to self-initiate this later developing interrogative also increases their opportunities to learn pronouns and possessives. For example, initially, to accomplish this learning task, a parent is instructed to use a variety of items that the child clearly associates with a particular member of the family. The child is prompted to ask, "Whose is it?" The parent then responds and gives the item to the child. Eventually, the child is prompted to repeat the possessive form. The same general teaching format is used to teach "yours" and "mine." Because this reversal of pronouns is typically difficult for children with ASD, we use highly desired stimulus items (e.g., a favorite toy or candy). When the parent responds to the child's initiation of "Whose is it?" by saying "It's yours," the child is prompted to say, "Mine," He or she then receives the desired item. With this procedure, children are being naturally reinforced for exhibiting curiosity and for learning pronouns.

Recent research has also shown the benefits of question asking during social conversation. For children we have showing that question asking can improve the variety of questions used (Koegel, Bradshaw, Ashbaugh, & Koegel, 2014). As well, adults with ASD can be taught to use empathetic questions to express an interest in their communicative partner, which results in their improved desirability as a communicative partner (Koegel, Ashbaugh, Navab, & Koegel, 2016). Thus, overall the use of question-asking can significantly improve an individual with ASD's long-term outcomes, as well as general social interactions.

EVIDENCE ON THE EFFECTS OF TREATMENT

Treatment Evaluations

We, along with other researchers in the field, have used a number of different strategies to evaluate the efficacy and effectiveness of the aforementioned types of PRT. The dependent measures in many of the outcome studies usually fall into one of two categories when children are involved: (1) child variables and (2) parent and family variables. Although the primary focus is on improving children's skills and reducing the symptoms of ASD, parent and family variables are also important to assess because of social validity concerns and potential moderators of treatment effects. Our research suggests that parents are not likely to use interventions that are aversive, stressful, or burdensome, or strategies that do not fit with their family's particular values. Specific child outcome measures include child initiations, joint attention, responsivity, reduction of disruptive behavior, spontaneous speech, quality of friendships, academic improvement, and generalization of treatment gains. Parent and family outcome measures include parents' accuracy in using the PRT procedures, parental stress, quality of parent–child interactions, positive affect, positive statements, physical affection, parental empowerment, and reduction of depressive symptoms. When working with adults with ASD, families often continue to be involved; thus, the same areas are measured. However, if the adult lives independently, dependent measures are collected on only the individual with ASD.

Empirical Evidence for PRT

A number of studies have documented the efficacy of the NLP, or PRT, as a comprehensive intervention for addressing core symptoms that are characteristic of children with ASD. Because the procedures more closely resemble the types of interactions adults have with typically developing children (as contrasted to a more analogue, mass-trial approach that has been traditionally used for children with ASD), the PRT language intervention procedures were initially described as the "natural" language paradigm. Table 17.1 outlines the differences in the procedures for the two models as applied to language intervention. Subsequent research demonstrating the applicability of these NLP procedures to broader areas of nonlanguage behaviors led us to describe the technique as a PRT. Thus, the techniques can be more widely applied to the broader age range, from infancy through adulthood.

Components of PRT

Empirical support for the use of each PRT component has been widely documented in numerous research studies within both our own laboratories and independent laboratories. For example, allowing children to make choices in activities or choose the order of activities was shown to reduce social avoidance behaviors (R. Koegel, Dyer, et al., 1987), increase accuracy and productivity, and decrease disruptive behaviors, when embedded within teaching activities. Similarly, interventions in which children respond to a combination of maintenance and acquisition tasks have resulted in increases in correct responding, rates of target behavior acquisition, and positive affect. In addition, a number of researchers have also investigated the response–reinforcer relationship in the intervention interactions. For example, when children's attempts at the target behavior are reinforced, as opposed to strictly shaping successive motor approximations, improved speech production occurs, as well as increased interest, enthusiasm, and happiness (R. Koegel et al., 1988). Similarly, reinforcing child responses that are directly or naturally related to the target behavior has been shown to produce more rapid learning (rather than when an arbitrary reinforcer is provided). That is, it is important that the response is a direct part of the chain leading to the reinforcer (R. Koegel & Williams, 1980). Studies show that the presence of child initiations is related to highly favorable outcomes, and that these initiations can be taught to young children who do not demonstrate them (L. Koegel et al., 1999). Social engagement with parents also occurs when the correct motivational contingencies are arranged such that social activities are embedded into highly reinforcing activities (R. Koegel et al., 2009). For example, in the case of a child who loves to bounce on a trampoline, instead of rewarding the child by letting him bounce alone on the trampoline, the adult bounces with the child. This small difference in the procedure results in greatly improved and generalized social behavior in the child. In summary, these studies provide strong empirical support for the use of each of the individual motivation components of PRT, as well as the importance of motivating children to exhibit child-initiated interactions.

PRT as an Intervention Package

In addition to the research providing empirical support for individual components of PRT interventions, studies have compared the use of a package combining the motivational variables. Many studies reflect the increased efficacy of the motivational PRT procedures over an approach that targets individual target behaviors in a drill format using different experimental designs, ranging from single-case experimental designs to randomized controlled clinical trials. Furthermore, improved treatment gains were also observed when parents, rather than clinicians, implemented the treatment. In addition to the positive child outcomes of PRT, the collateral positive effects on family functioning are documented in multiple studies. Finally, more recent empirical research in this area has investigated both the importance of self-initiations as a prognostic indicator and the efficacy of teaching such self-initiations to children who lack them.

Summary of Empirical Studies

There is a large body of evidence supporting the efficacy of the PRT model for children with ASD, including group design studies that use random assignment to intervention conditions (Hardan et al., 2015; Mohammadzaheri, Koegel, Rezaei, & Rafiee, 2014; Mohammadzaheri et al., 2015); single-subject studies that used multiple baseline designs or ABA experimental designs (Harper, Symon, & Frea, 2008, Pierce & Schreibman, 1997) or a combination (Gillett & LeBlanc, 2007; Vismara & Lyons, 2007); and clinical replication designs (Baker-Ericzen et al., 2007; Sherer & Schreibman, 2005; Ventola et al., 2014) conducted both within and outside of our own laboratories. The procedures in these studies have been manualized, and included adherence measures (fidelity of implementation). Participants in each of the studies were diagnosed with ASD by outside agencies, based on nationally accepted diagnostic standards. Thus, there is considerable evidence showing that PRT leads to greater treatment gains in both targeted and untargeted behaviors, collateral behaviors compared to the "treatment as usual" (TAU) commonly used with children with ASD. From a clinical perspective, empirical evidence shows that

PRT is far more effective than TAU in producing gains in social communication, with concomitant decreases in repetitive and disruptive behaviors. Furthermore, when one examines the data as a whole, the evidence shows meaningful increases in verbal communication, movement out of special education classes into regular education, and many children no longer meeting criteria for ASD.

FUTURE DIRECTIONS

Conducting research on the implementation of evidence-based interventions in routine care settings, including PRT, is an important direction in ASD research. For example, methods for training interventionists effectively and efficiently, so that individuals on the spectrum can have access to and benefit from the most recent and valuable treatments, are essential. Furthermore, the sustainability and durability of the training is also critical. Although practice with feedback can improve the skills of teachers, paraprofessionals, parents, and other interventionists, research on whether a minimum level of competence is maintained over time and whether trainees are able to generalize skills to new behaviors and to new children is of great importance. Additionally, examining organization- and provider-level factors impacting community implementation is important to determine the circumstances under which evidence-based procedures are implemented and sustained in routine care service settings.

Another greatly underresearched area relates to the age and ethnicity of study participants; that is, most research in the area of ASD involves preschool or school-age populations, and often there is not a broad range of ethnic diversity. Given the more positive outcomes of children who receive early intervention services, assessment and intervention procedures that are effective in infancy and the toddler years, and with culturally diverse children, may significantly improve outcomes. Relatedly, intervention studies for adults are sorely lacking. Even with the interventions currently available, most adults on the spectrum have difficulty with social relationships, even though research suggests that most have a desire for both friendships and romantic relationships. They also have increased loneliness and depression, rarely live independently or gain meaningful employment, and are unlikely to marry (Howlin, 2000).

Research on social communication and socialization—the foundation for healthy relationships in adulthood—for individuals with ASD is scant, and research on more personal issues such as intimacy and sexuality is almost nonexistent. Comprehensive programs addressing social communication, socialization, peer relationships, and pragmatic behavior in everyday settings are of vital importance for long-term positive outcomes and mental health of individuals on the spectrum (L. Koegel & LaZebnik, 2009). Furthermore, employment of individuals with ASD after high school is extremely low, particularly in mainstream work settings (Shattuck et al., 2012); Taylor, & Seltzer, 2011). The importance of employment for adults is well documented and beneficial for mental health, independence, socialization, and cognitive areas (L. Koegel, Koegel, & Miller, 2014). As the number of individuals with ASD is now reaching adulthood is now reaching epidemic proportions, social and employment issues are critical.

Additionally, the interrelationship between physiological changes in the brain that occur when children are improving and PRT should be interesting in future research (Voos et al., 2013). Thus, many researchers are suggesting that symptoms of ASD can be greatly decreased or eliminated, something that only a few decades ago was thought to be impossible. How presenting symptoms and treatments relate to outcome and responsiveness to intervention are undoubtedly of interest.

CONCLUDING COMMENTS

To achieve widespread, long-term, generalized improvements across children's behavioral repertoires, a number of researchers have focused on investigating pivotal responses that might have a broad impact on symptoms of ASD and overall development. By treating pivotal areas that have widespread collateral effects, the intervention is less time consuming, more cost-efficient, and less labor intensive than those focused on teaching individual target behaviors using mass trials and repetition. For example, data indicate that teaching approaches that specifically incorporate PRT motivational techniques result in greatly improved short- and long-term outcomes; however, there is still a very small subpopulation of children who do not seem to learn functional expressive language with the techniques available today. More research regarding these children and specialized procedures for teaching an initial lexicon is warranted. In addition, studies assessing the interrelationship between communication and other variables, such as chronological age, disruptive behavior, and repetitive behaviors, might enhance our research knowledge. Further information relating to implementation regarding the best settings, times, types, and amount of intervention may also provide valuable advances.

In summary, evidence suggests that intervention programs emphasizing motivation, such as PRT, appear to be effective, efficient models of treatment and result in improved generalization of treatment gains, as well as improved long-term outcomes. In addition, PRT tends to decrease parental stress in comparison to more traditional interventions, in part because the interventions are blended into natural family routines and are individually designed to match family values. Parental stress has been shown to moderate child progress, making parent education procedures that decrease this stress essential.

Finally, we have shown that once children, adolescents, and adults are motivated to respond to and initiate social communication and learning opportunities, there is concomitant achievement of developmental milestones. When parents become proficient in PRT techniques, they are able to engage in naturally occurring teaching interactions, similar to the type of interactions that generally occur with typically developing children. Further research in this area may help us to fully understand the social-communicative trajectories of children with ASD and the interventions needed to guide them toward a typical developmental trajectory at the earliest possible age, and how adolescents and adults may also enjoy greater improvements when their motivation is considered. We are highly optimistic about the effects that such data-based approaches will have on the condition of ASD and the quality of life for affected individuals with ASD and their families.

ACKNOWLEDGMENTS

The research described and preparation of this chapter were supported in part by National Institute of Mental Health Research Grant No. MH28210 and National Institute of Child Health and Human Development Research Grant No. DC010924 from the National Institutes of Health (NIH). The content is solely the responsibility of the authors and does not necessarily represent the official views of the NIH. In addition to their employment at the University of California, Santa Barbara, Robert L. Koegel and Lynn Kern Koegel are partners in the private firm, Koegel Autism Consultants, LLC.

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CHAPTER 18

Family-Based Treatment and Behavioral Family Systems Therapy for Adolescent Eating Disorders

Daniel Le Grange and Arthur L. Robin

OVERVIEW OF THE CLINICAL PROBLEM

Anorexia nervosa (AN) and bulimia nervosa (BN) are life-threatening eating disorders. AN is characterized by (1) body weight significantly below a minimally normal weight for age and height; (2) intense fear of gaining weight or becoming fat, even though the individual is underweight; and (3) body weight/shape disturbance or denial of the seriousness of low body weight (American Psychiatric Association, 2013). BN is characterized by (1) recurrent episodes of binge eating, (2) followed by episodes of compensatory behaviors such as self-induced vomiting, laxative and diuretic misuse, fasting, or excessive exercise in order to counteract the perceived consequences of binge eating; (3) both (1) and (2) occur at a frequency of at least once per week for 3 months; (4) self-evaluation is unduly influenced by weight and shape; and (5) these symptoms do not occur during an episode of AN (American Psychiatric Association, 2013). The lifetime prevalence of eating disorders among U.S. adolescents, ages 13–18 years, is about 1% (Swanson, Crow, Le Grange, Swendsen, & Merikangas, 2011), while the prevalence of eating disorders in younger children is lower and not clearly known.

A variety of interventions have been used to treat eating disorders in children and adolescents: inpatient hospitalization, partial hospitalization, individual dynamic therapy, adolescent focused therapy, cognitive-behavioral therapy, and family therapy. About a dozen randomized clinical trials (RCTs) have evaluated the effectiveness of these various treatments for adolescents with AN and BN. All of these studies included some form of family therapy. Families do not cause eating disorders; rather, current limited evidence would suggest an intricate combination of psychosocial and biological factors playing a role(s) in the etiology of these disorders (Le Grange, 2016). Moreover, evidence suggests that families are essential to successful outcomes in treating these disorders (Le Grange & Eisler, 2009). Adolescents with AN are in a state of physiological starvation and obsessed with dire fears of weight gain. As a result, their thinking is confused, and they often fail to benefit from insight-oriented individual therapy. While adolescents with BN are not malnourished to the same degree as those with AN, thought processes are also disturbed to the extent that participation in individual therapy can be challenging. Someone external to the adolescents must take charge and help them to overcome their eating disorder. Parents and siblings are the natural resource to help restore weight in adolescents with AN or return eating behaviors to a normal pattern in adolescents with BN.

A specific form of family therapy that purposely utilizes parental skill and support in restoring the weight of the adolescent with AN was first developed at the Maudsley Hospital in London (Eisler et al., 2000; Le Grange, Eisler, Dare, & Russell, 1992; Russell, Szmukler, Dare, & Eisler, 1987). This approach has since been adapted, and although closely related to the original London version, at least two manualized versions have subsequently been tested in five published RCTs: behavioral family systems therapy (BFST; Robin, Siegel, & Moye, 1995), and family-based treatment (FBT; Agras et al., 2014; Lock, Agras, Bryson, & Kraemer, 2005; Lock, Le Grange, Agras, Bryson, & Jo, 2010; Madden et al., 2015). Key elements of both BFST and FBT for adolescent AN include (1) refraining from blaming the adolescents or their parents for AN; (2) placing the parents in charge of restoring their adolescents' weight; (3) requiring parents and adolescents to attend therapy sessions together; (4) directly discussing weight restoration and coaching parents *in vivo* to become successful at helping the adolescents to eat more than they had intended; (5) gradually returning control over eating to the adolescents when sufficient weight gain has been achieved; and (6) emphasizing adolescent developmental issues, cognitive distortions, and family relations after weight restoration had been successfully accomplished.

This specific form of family therapy that utilizes parental skill and support has been adapted for adolescent with BN is called family-based treatment for BN (FBT-BN; Le Grange & Lock, 2007). Three RCTs have now been published, each comparing either FBT-BN (Le Grange, Crosby, Rathouz, & Leventhal, 2007; Le Grange et al., 2015), or another Maudsley-based family therapy that is considered to be quite similar to FBT-BN (Schmidt et al., 2007), with an individual psychotherapy. As alluded to, key elements of FBT-BN show a great deal of overlap with the approach for adolescents with AN, although the emphasis is on restoring healthy eating habits rather than weight gain per se, and supporting the adolescent to abstain from any binge eating and purging.

Our main focus in this chapter is to describe, compare, and review the research for two similar, albeit independently developed, family therapies for treating adolescents with AN that incorporate these six key features: BFST, developed by Robin and Siegel (Robin et al., 1995, 1999), and FBT, developed and extensively researched by Le Grange and Lock (Le Grange, 1999; Lock & Le Grange, 2013). Our secondary focus is to provide a brief update on FBT-BN given that considerable work in this domain has been published since the prior version of this chapter (Robin & Le Grange, 2010).

CHARACTERISTICS OF THE TREATMENT PROGRAM

BFST for AN

BFST combines behavioral, cognitive, and family systems perspectives and interventions to help adolescents and their parents overcome AN. Strategic interventions are used to place parents in charge of their adolescents' weight restoration. Parents are taught to develop and implement a behavioral weight gain program at home akin to those used in inpatient facilities, where skilled nurses support the patients to eat all the meals that the nursing staff presents to them. Later, cognitive restructuring is used to overcome cognitive distortions associated with the eating disorder. When the adolescents reach the target weight, control over eating is returned to them, and therapy focuses on the normal developmental task of individuation from the family.

The treatment program can be divided roughly into three phases: (1) assessment, (2) weight gain, and (3) weight maintenance. We emphasize in this chapter the second and third phases, since the assessment phase has been discussed in other publications (our chapter in the previous edition of this volume). In the weight gain phase, typically lasting 6–12 months, the adolescents and the parents are seen together weekly for 55 minutes per session. In the weight maintenance phase, which typically lasts 3–4 months, sessions are scheduled twice per month. The therapist, a physician, and a dietician work together as a team. The physician sets target weights and rates of weight gain, makes decisions about hospitalization, and conducts regular medical follow-ups; the dietician provides information about the types and amounts of food to be eaten. Either the physician or the therapist weighs the adolescent before each session. An unpublished treatment manual describing the phases of the intervention is available from Arthur L. Robin (*arobin@med.wayne.edu*).

Weight Gain Phase

During this phase of the intervention, the therapist teaches parents the skills necessary to take charge of refeeding the patient. This begins with the control rationale, which is narrated by the therapist (as outlined in the previous version of this chapter; cf. Robin & Le Grange, 2010, p. 347):

> AN is a life-threatening disease. When a child is sick, we consult the doctor, who usually prescribes medicine. You have consulted the doctors, and food has been prescribed as the only medicine that can cure AN. But your child's disease causes a fear of taking the medicine that is so desperately needed. When a child is unable to take the medicine on his or her own for any other disease, the parents, who love the child, give the medicine. Similarly, in this case you are going to need to give your child the medicine, that is, the food that is needed to recover. Temporarily, you will take over complete control of everything related to eating. You will plan the menu based on the dietician's recommendations. You will do the shopping. You will select and prepare her food. You will present the food and sit with your daughter to make sure it is eaten. You will record everything that she eats on the sheets I give you. You will praise and reward her for eating all of her food, and you will arrange for energy to be preserved by not allowing her to engage in any activities if it proves too difficult to eat all of her food. I understand that this is a very big responsibility. I will help you work as a team to divide

> this responsibility between the two of you. When she approaches the target weight and demonstrates readiness to take back responsibility for food and eating, I will help you gradually return it to her. I know that I am asking you to do something that is very difficult, but I also know how much you love your child and I feel completely confident that you can help her take the food, which is the only medicine.

Afterward, the therapist assesses each family member's reactions. The patient's objections are empathetically acknowledged, but the therapist reiterates that through no fault of her own, starvation has clouded her mind and prevented healthy eating. The parents' resistance is empathetically reframed as the natural apprehension and fear of a loving couple who wants to heal their child but do not know how to go about it.

When the parents do make the commitment to take charge of their adolescent's eating, the therapist coaches them to develop a behavioral weight gain program. The therapist further prompts them to designate positive incentives for eating meals, as well as longer-term incentives for achieving weight gains. Powerful incentives have included money, access to video games, and favorite hobbies or recreational pursuits. For example, one patient who loved to ride horses and who took care of her own horse daily had to eat all of her meals before she could go to the barn to see her horse. During the remaining sessions of the weight gain phase, the therapist teaches the family the skills necessary to fine-tune the behavioral weight gain program, closing off any loopholes and continuing the program as the patient gradually gains weight and moves toward the target weight.

When the patient eats most of the required foods and gains weight regularly, the therapist shifts the focus to non-*food*-related issues. Cognitive restructuring is introduced to correct distorted thinking about certain foods, body parts, and body size. Cognitive restructuring involves (1) identifying a distorted cognition, (2) challenging it logically, (3) suggesting a more appropriate cognition, (4) proposing an experiment to determine which cognition makes more sense based on the evidence collected by the teen, and (5) reviewing the results of the experiment. For example, 15-year-old Nicole slowly became distraught about the change in her appearance: "My stomach sticks out and I look gross." The therapist gently challenged this distortion by suggesting that perhaps there were other ways to interpret the changes in her body that accompanied weight gain; Nicole was skeptical. The therapist asked Nicole to identify four people whom she trusted; Nicole named her grandmother, an aunt, a close friend, and her English teacher. The therapist asked Nicole to bring in photos of herself at different weights. The four trusted people reviewed the photos and selected the one that represented the "healthiest" image. All three selected the photo in which Nicole was closest to her target weight. Nicole was taken aback and found cause to reevaluate her self-perceptions.

Weight Maintenance Phase

As the patient approaches the target weight, the weight maintenance phase of BFST begins. The therapist teaches the parents the skills necessary to return the responsibility for eating gradually to the patient. The parents consult the dietician to reduce caloric intake to facilitate weight maintenance rather than weight gain. At first, the teenager might plan one of the meals, measure and prepare some of the food, eat a meal without supervision, or write down the foods for the meal. Later, the teenager might eat a meal without supervision, plan the menus for an entire day, eat several meals without supervision, and so on. Eventually, the patient may eat all of the meals for a day without any parental intervention or monitoring.

The therapist also focuses on adolescent development and encourages (1) the patient to seek age-appropriate individuation and autonomy from the parents, and (2) the parents to refocus their energies on their strengthening their marital bonds.

When the patient has maintained the target weight for at least 3 months, the therapist plans for termination. The interval between sessions is increased to 1 month. The therapist discusses methods of coping with possible relapses with the family. The changes that have occurred are reviewed, and the family is left with the framework that coping with AN may be a lifelong process, and that they can return for more therapy at any time.

FBT for AN

The theoretical underpinning of FBT is that the adolescent patient is embedded in the family and that the parents' involvement in treatment is vital for the ultimate success of treatment. From a developmental perspective, in the area of food and eating, the adolescent is functioning like a much younger child (e.g., normal adolescent development has been arrested by the presence of the eating disorder). The parents are temporarily put in charge of the adolescent's eating to help reduce the hold that this disorder has over the teenager's life. When the eating disorder is no longer controlling the adolescent's life, the parents will return control over eating to the adolescent, in an age-appropriate way, and return to the usual parental role of helping him or her achieve the developmental tasks of adolescence.

FBT progresses through three clearly defined phases: (1) temporary parental control over weight restoration; (2) negotiation for a new pattern of relationships in which control over eating is returned to the adolescent; and (3) adolescent developmental issues and termination. Treatment is provided by a primary mental health clinician (psychologist, psychiatrist, social worker) along with a consulting team comprising a pediatrician for medical monitoring and a child/adolescent psychiatrist to manage any coexisting psychiatric disorder(s). The primary clinician sees the patient and family regularly and maintains frequent contact with the other team members so everyone is "on the same page." The patient is weighed at the beginning of each session by the therapist. Sessions last 60 minutes, except for the 90-minute family meal session. A published therapy manual is available (Lock & Le Grange, 2013).

Phase 1: Weight Restoring the Adolescent

Weekly therapy sessions are focused primarily on restoring the patient's weight and include a family meal session, which gives the therapist an opportunity for direct observation of family interaction patterns at mealtime and direct intervention to change these patterns. The parents are placed in charge of restoring the adolescent's weight, supported and encouraged to work as a team, and absolved from any responsibility for causing AN. The adolescent patient is helped to be aligned with her siblings for support outside of mealtimes. In the first session of this phase, the therapist engages the family in therapy, obtains each member's perspective on how AN is affecting the family, and obtains preliminary information about how the family functions (e.g., coalitions, authority structure, conflicts). After greeting each family member in a courteous and serious manner, and listening to all perspectives on the challenges the eating disorder has brought about, the therapist makes every effort to separate the illness from the patient, emphasizing how AN has taken over the adolescent's life, and that the healthy adolescent is barely "visible" (e.g., the adolescent has an identity apart from AN). Then, in a nonblameful manner, the therapist raises the parents' anxiety about the dire consequences of this serious disorder, culminating in charging the parents with the task of weight restoration. Specific advice about calories and food, and the details of restoring the patient's weight, is not given; the therapist appeals instead to the parents' intuitive knowledge about good nutrition and supports their explorations and attempts at weight restoration. At the end of the session, the parents are instructed to bring food for everyone to the next session, including a portion for the patient that meets the nutritional requirements to begin the process of reversing weight loss.

The second session involves a family meal. The parents are asked to convince their teenager to eat at least one mouthful more than the illness would allow her to eat. To support the parents in this difficult task and help them succeed when they believe they cannot, the therapist will emphasize a persistent effort on their part, one that sends a clear message to the adolescent that her parents will persevere in their insistence that she eats adequate amounts of nutritious food. For instance, the therapist can suggest that the parents sit on either side of the patient, put on her plate exactly what *they* think she should eat, then kindly yet firmly encourage her to eat. The therapist coaches the parents by urging them to have repetitive and insistent expectations as to how to act uniformly so that the teenager will eat. The therapist also notes that there are few alternatives available, and the parents must be prepared to persevere until their child eats and to repeat this effort without fail. The siblings have a very specific role to play that does not involve mealtimes. They are asked to align with the adolescent and provide support by spending time with her in age-appropriate endeavors, which may include activities such as surfing the Internet, watching a favorite television program, or merely sharing a joke.

The remaining three to 10 sessions of Phase 1 continue to focus on helping the parents restore the weight of their unwell adolescent. After an initial weigh-in, the therapist reviews with the parents their attempts at weight restoration to systematically advise them how to proceed in controlling the influence of the eating disorder on the patient. Parental teamwork is strongly reinforced, and siblings are urged to continue providing support to the patient outside mealtimes.

Phase 2: Negotiating for a New Pattern of Relationships

The patient's surrender to her parents' demands to increase food intake, accompanied by steady weight gain, as well as the parents' relief after having taken charge of the eating disorder, signal readiness to start Phase 2 of treatment. More specifically, the patient is ready for Phase 2 when weight is at a minimum of ~87% of expected body weight (EBW), the patient is able to eat without undue cajoling by parents, and the parents report they feel empowered in the weight restoration process. As was the case in Phase 1, the main task of Phase 2 is to return the adolescent to physical health. To accomplish this goal, the therapist continues to support and assist the parents in managing weight restoration and the eating disorder symptoms, but changes from direct coaching to a more supportive role in helping them continue with weight restoration.

When the patient is approaching a healthy EBW range, and the therapist judges that this improvement will likely continue with less parental supervision, the therapist assists the parents and adolescent in bringing about a careful, mutually agreed-upon return of age-appropriate responsibility over eating to the adolescent. This process is tailored to each family's unique rituals or habits of regular eating activities before the eating disorder changed the family's mealtimes.

When eating is no longer the primary focus of discussion, it is time for the therapist and family to begin examining adolescent development issues. The patient is strongly encouraged to engage in age-appropriate socialization with same- and opposite-sex peers. The therapist coaches the adolescent to plan peer activities and become involved in dating, and prompts the family to problem solve how eating will be handled during peer activities (e.g., how the adolescent will make wise food choices at restaurants and at friends' homes). Phase 2 usually lasts two to six sessions, which are scheduled at 2- to 3-week intervals.

Phase 3: Adolescent Issues and Termination

During this final, brief phase of FBT, the therapist continues the focus on adolescent developmental issues, actively encourages the family to problem-solve these issues, continues to refocus the parents on their own relationship, and gradually terminates treatment. Phase 3 typically lasts two to four sessions, with intervals stretched to 4–6 weeks. The family is ready for Phase 3 when the patient's weight has been returned to a healthy range (e.g., 95–100% of EBW), and the responsibility for eating has been successfully returned to the adolescent if that is age appropriate. The therapist begins by giving the parents a primer on adolescent development. Then specific issues pertinent to the patient are identified (e.g., choice of friends, dating, curfew, chores, college planning, sex, and parent–teen relationships), and the family is encouraged to problem-solve them. All of these issues are discussed directly, without reference to the eating disorder. At the same time, the parents are encouraged to engage more in activities as a couple, and to recalibrate their focus on caring for their now-recovering adolescent. In the last session, the therapist anticipates and plans for future problems, listens carefully to each family member's feedback regarding the therapy experience, discusses some relapse prevention strategies, and thanks them for their participation.

Comparison of BFST and FBT

Table 18.1 compares BFST and FBT. These two interventions are similar in that both adhere to the six key elements of effective family therapy outlined earlier in this chapter. However, they differ in certain respects:

1. BFST always involves a dietician, who outlines the foods to be eaten and adjusts them as the adolescent gains weight. In contrast, FBT involves a dietician only as consultant to the treatment team.
2. In BFST, the therapist provides parents with a detailed structure of a behavioral weight gain program, including stimulus control over the eating setting and positive incentives for eating the required foods. In FBT the therapist appeals to parents' intuitive knowledge of good nutrition, does not delineate a structured eating regimen, and does not systematically program positive incentives contingent on appropriate eating.
3. BFST includes cognitive restructuring of extreme cognitions and body image distortions; FBT does not.
4. In FBT, the entire family is encouraged to attend all sessions, whereas in BFST, the patient and the parents attend all BFST sessions, with only occasional sibling involvement.
5. On average, BFST takes longer than FBT.
6. FBT includes a family meal session. BFST does not; instead, the therapist systematically assesses home-based family meals.

These differences arose because the two therapies heralded from different traditions: FBT from a strategic/structural adolescent developmental framework, and BFST from a cognitive-behavioral framework with a strategic/structural component added. To date, no research has examined whether these differences impact the outcomes of family intervention for adolescents with AN. Future researchers are urged to evaluate whether such differences matter and, if so, for what subgroups of eating disordered patients.

TABLE 18.1. A Comparison of BFST and FBT

Variable	BFST	FBT
Place parents in charge of restoring weight.	X	X
Refrain from blaming.	X	X
Parents and adolescent attend sessions together.	X	X
Entire family (e.g., siblings, too) attend sessions together.		X
Eating and weight restoration direct the focus of discussion.	X	X
Gradually return control over eating to adolescent during maintenance.	X	X
Emphasize adolescent development issues after weight restoration.	X	X
Dietician is regularly involved.	X	
Give parents detailed instructions for behavioral weight gain program.	X	
Use cognitive restructuring for body image concerns, distorted thinking.	X	
Includes a family meal session.		X

EVIDENCE OF TREATMENT EFFICACY

Adolescent AN

Since our own earlier review (Le Grange & Lock, 2005), at least nine RCTs of the specific family therapy for AN, which utilizes parental skill and support in the weight restoration of the adolescent, have now been published (Table 18.2). In their seminal study, Russell et al. (1987), at the Maudsley Hospital in London, tested the relative efficacy of this family therapy (also known as the Maudsley Family Therapy Approach—referred to as FT for the remainder of this chapter), and individual supportive therapy in maintaining weight gain as a follow-up treatment posthospitalization. A total sample of 80 patients of all ages was prospectively subdivided into four subgroups based on patient diagnosis or age, or both. All patients were first admitted for weight restoration to the inpatient program for a mean of 10 weeks. After discharge, patients were randomly allocated to either outpatient FT or individual control treatment. For the purposes of this discussion, we focus on the first of the four subgroups, which comprised 21 adolescents with AN. For all, age of onset was 18 years or younger and duration of illness was less than 3 years. Although the findings were inconclusive for adolescents with AN who had been ill for more than 3 years (subgroup 2), adults with AN (subgroup 3), or patients with a diagnosis of bulimia nervosa (BN; subgroup 4), findings for patients in the first subgroup favored FT. Outcome was defined by a composite score that took both biological (weight and menses), and psychological (mental status, psychosocial and psychosexual development) markers into account as defined by the Morgan–Russell Assessment Schedule (Morgan & Hayward, 1988). At 5-year follow-up, adolescents in this subgroup who received FT continued to do well, with 90% having a good outcome (Eisler et al., 1997). Although adolescents who had received the individual control treatment also continued to improve, almost half of this group still had significant eating disorder symptoms at follow-up. This follow-up study was the first to demonstrate that the benefits of FT were maintained 5 years posttreatment.

Building on this seminal work by Russell and his group, two subsequent studies compared two different forms of FT. In the first of these, and also from the Maudsley group, Le Grange et al. (1992), in a pilot RCT (*N* = 18), and Eisler et al. (2000), in a somewhat larger RCT (*N* = 40), compared FT (delivered in conjoint format, as was the case in the seminal Russell et al. [1987] study, and called CFT here), with separated FT (the same therapist sees the adolescent and the parents, but separately, and called SFT here). The treatment goals for CFT and SFT were the same. In contrast to the Russell et al. study, patients were not hospitalized; both treatments were provided on an outpatient basis. Overall, results were similar for both the Le Grange et al. (1992) and the Eisler et al. (1990) studies, with significant improvements in the primary outcome (weight gain) measure reported for patients in both CFT and SFT. Utilizing the Morgan–Russell Assessment Schedule, more than 60% of patients were classified as having a good or intermediate outcome posttreatment, whether they received CFT or SPT. However, families with high levels of parental criticism (as defined by expressed emotion; Vaughn & Leff, 1976) did worse in CFT, but families with low parental criticism did equally well in CFT and SFT. On the other hand, significantly more change was demonstrated for CFT in terms of both individual psychological and family functioning (Eisler et al.,

TABLE 18.2. Completed Randomized Controlled Trials Using Family Treatments for Adolescent AN and BN

AN studies	N	Mean age (yr)	Treatment[a]	Duration	Mean sessions	Outcome[b]
Russell et al. (1987)	21	15.3	Conj FT vs. IT	10.3 wk	13	[1]EOT: Conj FBT = 90% vs. IT = 18%, $p < .02$
Le Grange et al. (1992)	18	15.3	Conj FT vs. Sep FT	6 mo	9	[1]EOT: Overall 68%, NS
Robin et al. (1999)	37	13.9	BFST vs. EOIT	1–1.5 yr	47	[1]EOT: BFST = 94% vs. EOIT = 65%, $p < .05$
Eisler et al. (2000)	40	15.5	Conj FT vs. Sep FT	1 yr	16	[1]EOT: Overall 63%, NS
Lock et al. (2005)	86	15.1	Low-dose FBT vs. high-dose FBT	6 mo vs. 12 mo	10 vs. 20	[1]EOT: Overall 90%, NS
Lock et al. (2010)	121	14.4	Conj FBT vs. AFT (two sites)	1 yr	24 vs. 32 24 hr each	[2]EOT: FBT = 42 vs. AFT = 23, NS; 6 mo F/U: FBT = 40 vs. AFT = 18, $p < .03$; 12 mo F/U: FBT = 49 vs. AFT = 23, $p < .02$
Agras et al. (2014)	158	15.3	Conj FBT vs. SyFT (six sites)	9 mo	16	[3]EOT: FBT = 33 vs. SyFT = 25, NS; 12 mo F/U: FBT = 41 vs. SyFT = 39, NS
Madden et al. (2014)	82	14.9	WR+Conj FBT vs. MS+Conj FBT	1 year	20	[2]12 mo F/U: NS on clinical markers, except #hosp days; WR = 66 vs. MS = 45, $p < .046$
[2]Le Grange et al. (2016)	107	15.5	Conj FBT + PFT	6 mo	18	EOT: FBT = 22 vs. PFT = 43, $p < .016$; 6 mo F/U: FBT = 22 vs. PFT = 39, NS; 12 mo F/U: FBT = 29 vs. PFT = 37, NS

BN studies	N	Mean age (yr)	Treatment	Duration	Mean sessions	Outcome[c]
Le Grange et al. (2007)	80	16.1	FBT-BN vs. SPT	6 mo	20	EOT: FBT = 39 vs. SPT = 18, $p < .049$; 6 mo F/U: FBT = 29 vs. SPT = 10, $p < .05$
Schmidt et al. (2007)	85	17.7	FT vs. CBT-GSC	6 mo	15	EOT: FT = 12 vs. CBT-GSC = 19, NS; 6 mo F/U: FT = 41 vs. CBT-GSC = 36, NS
Le Grange et al. (2015)	130	15.8	FBT-BN vs. CBT-A (two sites)	6 mo	18	EOT: FBT = 39 vs. CBT = 20, $p < .04$; 6 mo F/U: FBT = 44 vs. CBT = 25, $p < .03$; 12 mo F/U: FBT = 49 vs. CBT = 32, NS

Note. EBW, expected body weight; EDE, Eating Disorder Examination; Conj FT, conjoint family therapy; IT, individual therapy; Sep FT, separated family therapy; BFST, behavioral family systems therapy; EOIT, ego-oriented individual therapy (or adolescent focused therapy [AFT]); FBT, family-based treatment; SyFT, systemic family therapy; PFT, parent-focused treatment; WR, weight restoration; MS, medical stabilization; FBT-BN, family-based treatment for BN; SPT, supportive psychotherapy; CBT-GSC, cognitive-behavioral therapy–guided self-care, CBT-A, cognitive-behavioral therapy for adolescents; EOT, end of treatment; 6 mo F/U, 6-month follow-up; 12 mo F/U, 12-month follow-up.

[a] Conj FT and Sep FT refer to the original Maudsley family therapy for adolescents with AN, while BFST, Conj FBT, and FBT-BN are close adaptations of this original family therapy model for adolescents with AN.

[b] 1, Morgan–Russell good + intermediate; 2, remission (95% EBW + EDE).

[c] 2, Percent binge and purge abstinent; 3, Remission (5% EBW).

2000). As was the case in the first RCT (i.e., Russell et al., 1987), patients continued to improve after the treatment ended, and at 5-year follow-up, the majority had a good (75%) or intermediate (15%) outcome, with only 10% failing to respond to treatment (Eisler, Simic, Russell, & Dare, 2007).

In a design that shares some similarities with these Maudsley studies, in Detroit, Robin and colleagues (1999) compared BFST, a family therapy approach that is a close adaptation of the original Maudsley FT, with ego-oriented individual therapy (EOIT; later renamed adolescent focused therapy [AFT; Fitzpatrick, Moye, Hoste, Lock, & Le Grange, 2010]) in 38 adolescents with AN. We discussed BFST some detail earlier in this chapter. The comparison treatment in this RCT (i.e., EOIT) comprised weekly individual sessions for the adolescent and bimonthly collateral sessions with the parents. We have carefully highlighted the similarities and differences between BFST and FBT in the prior discussion. EOIT, in the Robin et al. (1999) study, is superficially similar to SFT, although the aims are quite different. Whereas SFT emphasizes helping parents take a strong role in the management of the symptoms, EOIT aims to help parents relinquish control over their child's eating and prepares them to accept a more assertive adolescent. The similarities between EOIT and SFT are equally important. Both treatments provide the adolescent with regular individual therapy in which he or she has the opportunity to address personal and relationship issues, as well as matters directly related to eating difficulties. Although the parallel sessions with the parents differ in frequency and content, both treatments encourage parents to take an active and supportive role in their child's recovery and to reflect on some of the family dynamics that might have gotten caught up with the eating disorder.

Posttreatment results demonstrated significant improvements for both BFST and EOIT, with 67% of patients reaching target weight and 80% regaining menstruation. Patients continued to improve during the follow-up period, and at 1-year follow-up, approximately 75% had reached their target weight and 85% were menstruating (Robin et al., 1999). In terms of physiological improvements, changes in weight and menses were superior for patients in BFST at posttreatment and follow-up. As for psychological measures (i.e., eating attitudes, mood, self-reported, eating-related family conflict), improvements were comparable for the two groups. In an offshoot of their study, Robin et al. (1995) also reported results of observational ratings of family interaction. These researchers demonstrated a significant decrease in maternal negative communication, as well as a corresponding increase in positive communication in BFST but not in EOIT.

Some of the differences between Robin et al.'s (1999) Detroit (BFST) study and the earlier Maudsley FT studies, to which we have already alluded, could also have had an impact on outcome. First, in Robin et al., patients at less than 75% of EBW were hospitalized at the outset of treatment (almost half the sample) and remained in the inpatient setting until they achieved 80% EBW. In contrast, the second-generation Maudsley FT studies were conducted on an outpatient basis, and patients were admitted to the inpatient unit only if outpatient therapy failed to arrest weight loss (four of 58 patients were admitted during the study). Second, the duration and dose intensity of treatment were lower in the Maudsley FT studies (6–12 months of treatment with a mean of ~10 sessions) than in the Detroit study (12–18 months of treatment with a mean of ~30 sessions). Finally, compared to the

Detroit group, patients from the Maudsley FT studies appeared to have been ill for a longer period, the majority had had previous treatment, and a higher percentage were suffering from depression.

Improvements in the design of treatment studies for this patient population that followed the early work were made possible by a manualized form of the FT originally developed by Dare, Eisler, and their group at the Maudsley Hospital in London. This manualized treatment is another close adaptation of the original Maudsley FT, called family-based treatment for AN (FBT-AN), and was discussed in more detail earlier in this chapter. The process of manualizing this treatment was outlined by Lock and Le Grange (2001), with perhaps the main difference between FT and FBT being the more behavioral focus of FBT and the relatively greater focus on family functioning in FT. Still, both FT and FBT have a laser beam focus on supporting parents' weight restoration of their unwell adolescent as expeditiously as is clinically indicated. More details about the goals and techniques of FBT are provided in the clinician's manual authored by the same team (Lock & Le Grange, 2013). The first study to utilize FBT-AN was conducted by Lock et al. (2005). These authors examined the treatment dose among 86 adolescents and found that a brief, 6-month, 10-session version of FBT-AN was as effective as a yearlong, 20-session version. However, the longer version was superior for two groups of patients: (1) those who came from nonintact families and (2) those who presented with higher levels of obsessions and compulsions about eating. Findings at 4-year follow-up were encouraging, in that FBT-AN was equally effective regardless of treatment dose. Moreover, at follow-up, about two-thirds of patients achieved healthy body weights and had Eating Disorder Examination (EDE) scores within the normal range (Lock, Couturier, Agras, & Bryson, 2006).

As a result of the development of this clinician's manual, three groups in the United States utilized case series data to demonstrate that manualized FBT-AN (1) is feasible and effective for consecutive patients referred to a specialist eating disorders program (Le Grange, Binford, & Loeb, 2005), (2) can be disseminated and administered by investigators other than its developers (Loeb et al., 2007), and (3) appears to be as effective for children as it is for adolescents (Lock et al., 2006).

Subsequently, at least four RCTs utilizing family interventions have been published. The first of these was a multisite study (Chicago and Stanford) in which Lock and Le Grange compared FBT-AN and AFT in 121 adolescents with AN who were medically stable for outpatient treatment (Lock et al., 2010; Le Grange et al., 2012). FBT-AN was superior to AFT at both the 6-month and 12-month follow-up. Similarly, in a moderator analysis, FBT-AN should be the treatment of choice for those adolescents who are particularly unwell, as measured by the EDE and the Yale–Brown–Cornell Eating Disorder Scale (YBC-ED; Le Grange et al., 2014). However, a 4-year follow-up demonstrated that outcomes at that time point were quite similar for these two treatments, with about one-third of patients fully remitted (i.e., weight at or above 95% of EBW and an EDE Global score within one standard deviation of the community norm). In the second of these four studies, and to date the largest RCT for this patient population, Agras and colleagues (2014) at seven sites across the United States and Canada compared FBT-AN and systemic family therapy (SyFT). While there were no differences in clinical outcomes between these two groups, patients in FBT-AN gained weight faster, with fewer hospitalizations for medical instability during the course of outpatient treatment, and their treatment was more cost-efficient when compared to that of their counterparts in SyFT. In the third RCT, Madden and colleagues (2015) in Sydney, Australia, randomized medically unstable adolescents with AN to inpatient weight restoration (up to 90% of EBW) followed by FBT versus inpatient medical stabilization (usually no more than a 2-week stay once vital sign stability has been achieved, often around 75% of EBW), followed by FBT. As hypothesized, there were no clinical differences between these two groups at the time of follow-up following outpatient FBT. These findings underscore the fact that medically unstable adolescents with AN typically require only brief hospitalization when families are engaged in FBT postdischarge.

Finally, in the fourth RCT, also conducted in Australia, Le Grange and colleagues (2016), randomized 107 medically stable adolescents with AN to one of two family therapies: FBT or parent-focused therapy (PFT). Outpatient treatment was provided over a period of six months, and assessments were conducted at baseline, end-of-treatment (EOT), and at 6- and 12-month follow-ups. These authors used the same definition for remission that was utilized in the Lock, Le Grange, et al. (2010) RCT. PFT was statistically superior to FBT at the EOT, but no longer at the 6- and 12-month follow-ups. PFT would seem more "user-friendly" than conjoint FBT (no family meetings and no family meal, among others). Therefore, dissemination of this treatment format might have some advantages over conjoint FBT, although only speculative at this time.

Adolescent BN

As briefly mentioned at the start of this chapter, FBT-AN has also been adapted to treat adolescent BN (FBT-BN) in the form of a clinical manual (Le Grange & Lock, 2007), and has been evaluated in two RCTs (Le Grange et al., 2007, 2015). The first of these RCTs compared FBT-BN with supportive psychotherapy (SPT) and found that FBT-BN was statistically significantly superior to SPT in terms of the primary outcome measure (i.e., binge and purge abstinence) (Le Grange et al., 2007). At the same time, Schmidt and colleagues (2007) showed that there were no differences in outcomes for patients who received either a form of family therapy quite similar to FBT-BN, or cognitive-behavioral therapy–guided self-care (CBT-GSC) in their RCT. Finally, the most recent and only the third RCT to be published for this patient population (Le Grange et al., 2015) demonstrated that FBT-BN was superior to CBT for adolescent BN (CBT-A). Taken together, FBT-BN shows great promise, although the evidence-base at this time needs to be expanded considerably before we can confidently advocate that FBT-BN should be the first-line psychotherapeutic approach for adolescents with BN.

CONCLUDING COMMENTS

The evidence to date supports utilizing parents in the treatment of adolescents with AN and BN. However, enthusiasm for this approach, whether it is the original Maudsley FT, BFST, or FBT, should be tempered, because the positive findings may at least in part be due to the lack of research on other treatments. Although AFT, CBT and SPT have all been described in the literature and utilized in at least some of the RCTs for this patient population, their evidence-base and relative merits remain rather slim. Likewise, little of the available systematic evidence can guide us in deciding the suitability of a family-based approach for one family as opposed to another, although some recent advances in this domain are promising (see Le Grange et al., 2012; Le Grange, Crosby, & Lock, 2008; Le Grange et al., 2016; Lock et al., 2015). Until more robust information is available regarding mediators and moderators of treatment, our clinical experience leads us to proceed with caution before engaging in therapy when there is (1) significant parental psychopathology, such as an active eating disorder or a severe mood disorder; (2) serious discord between parents, enough to precipitate discussions about divorce because differences between the spouses are seen as irreconcilable; and (3) significant challenges in terms of the typical logistical resources that can aid parents in engaging in treatment and fulfill the rather high expectations in terms of time and energy requirements.

Efforts are under way to overcome some of the shortcomings in the evidence base of treatments for adolescents' eating disorders. Researchers at the Maudsley Hospital in London have completed a systematic evaluation of the effectiveness of a multiple-family day treatment program, a promising new treatment development described in some detail elsewhere (see Eisler, 2010). Additional projects recently completed, but not published at this time, include an adaptation of FBT-AN for early intervention in subsyndromal AN (Katharine Loeb, PhD, Mount Sinai Medical Center New York), a parent group format of FBT for adolescent AN (Nancy Zucker, PhD, Duke University, Raleigh–Durham, North Carolina), FBT for pediatric overweight (Katharine Loeb, PhD, Mount Sinai Medical Center and Daniel Le Grange, PhD, The University of Chicago), and a telemedicine approach for FBT-AN (Kristen Anderson, MA, The University of Chicago and Daniel Le Grange, PhD, University of California, San Francisco; cf. Anderson, Byrne, Goodyear, Reichel, & Le Grange, 2015).

The studies discussed in this chapter consistently show that adolescents with AN respond well to treatment when their parents are included in these efforts. If family therapy is implemented, inpatient treatment can usually be avoided, with between 50 and 75% of the weight of adolescents with AN restored by the end of treatment. However, most patients will not have started or resumed menses. Four follow-up studies have now been published and consistently show that 4–5 years after family therapy, the majority of patients will have fully recovered and only 10–15% will still be seriously ill (Eisler et al., 1997, 2007; Le Grange et al., 2014; Lock et al., 2006). However, a substantial minority of patients do not benefit from family therapy. In our clinical experience, such severe cases often end up having repeated, short-term inpatient stays, followed by failed outpatient treatments. Eventually, if feasible (i.e., affordable), these patients may end up in higher levels of care in which outcomes remain quite unpredictable.

Any comparison between different kinds of family interventions ought to be interpreted with caution given the small number of such studies and the, at times, modest sample sizes included. Notwithstanding, treatments that promote parents' active role in challenging their child's eating disorder seem most effective and may have benefits over treatments in which parents are not involved, or are involved in a supportive role but are nevertheless encouraged to step back from the eating problem. For instance, the initial RCT for AN has shown that excluding parents from treatment (i.e., the individual SPT) leads to a deleterious outcome and may even delay recovery to a considerable degree (Russell et al., 1987; Eisler et al., 1997). Another advantage of seeing families in a conjoint format appears to be that both family and individual psychological issues are addressed. However, this form of family intervention may be disadvantageous for families with high levels of parental hostility or criticism directed at the adolescent with AN (Le Grange et al., 1992). Although such families may perhaps be more difficult to engage in family treatment, this challenge seems to be exacerbated when the family is seen as a whole. One reason for this scenario might be that feelings of guilt and blame are increased as a consequence of criticisms or confrontations occurring during family sessions. Our clinical experience suggests that conjoint sessions may be more useful for these families at a stage in treatment when the concerns about eating disorder symptoms have dissipated. In the meantime, clinicians may be well advised to utilize the separated format of this treatment for such families (Eisler et al., 2000; Le Grange et al., 1992). It is important to note, however, that the differences between the various forms of family therapy (i.e., the original Maudsley FT, BFST, and FBT) that have been studied are relatively small, especially when compared with improvements on the whole.

Notwithstanding, given the fairly robust body of evidence available at this time, it seems reasonable to argue that family interventions are quite effective for adolescents with eating disorders. The evidence is especially convincing for FBT to be the first-line treatment for most adolescents with AN who have been ill for a relatively brief period (i.e., less than 3 years), and who are sufficiently medically stable for outpatient treatment.

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CHAPTER 19

Behavioral Treatment for Enuresis and Encopresis

Michael W. Mellon and Arthur C. Houts

ENURESIS

OVERVIEW OF THE CLINICAL PROBLEM

Bedwetting is a problem for 5- to 12-year-old children. The prevalence at 6 years old is about 15% and declines to about 1% among 18-year-olds (Devlin, 1991; Foxman, Valdez, & Brook, 1986). Only 15 of every 100 children will "outgrow" the problem in a year (Forsythe & Redmond, 1974). Continued bedwetting leads to restricted social activities, embarrassment about a family secret, and diminished confidence. Given that a 4-month course of behavioral treatment can permanently fix the problem in about 75% of children, this treatment should be pursued once a child is 6 years old. Unfortunately, most parents do not know what to do, and many get bad advice from professionals.

Of the 7 to 10 million bedwetting children in the United States, about 85% are monosymptomatic primary enuretics (MPEs). They have no medical problems, they wet only at night, and they have never been dry for at least 6 consecutive months. MPEs are ideal candidates for behavioral treatment. All children should receive a basic physical examination and urinalysis. About 90% will have no medical complications, but no child should fail behavioral treatment due to an easily curable infection.

CONCEPTUAL MODEL GUIDING THE TREATMENT

Active Avoidance Learning and the Urine Alarm

All children start out wetting the bed, and most stop without special help. On average, children attain daytime control at 2.5 years old and nighttime control within a year after that. When a child continues regular bedwetting beyond age 4, he or she probably missed a developmental window for acquiring the responses needed to be dry at night. For practical reasons, behavioral treatment is generally not instituted until a child is at least 5 years old. Children get control either by waking up to go to the toilet or by physically inhibiting urination even during asleep. Learning either response is facilitated by the natural discomfort of a wet bed. If for any number of reasons (e.g., failure to arouse, habituating to discomfort from use of pull ups) a child repeatedly fails to respond to the aversive conditions of "nature," the child will fail to learn the physical responses. Continued wetting, then, is a failure to learn how to be dry from naturally occurring conditions. From this perspective, MPE is caused by an interaction between genetically transmitted delays in physical development and behavioral histories that delay acquisition of active avoidance responses (e.g., pelvic floor contraction when awake or asleep) (Houts, 1991; Lovibond, 1963).

Urine alarm treatment re-creates conditions to perform an active avoidance response to inhibit urination. Urination starts with contraction of the bladder detrusor muscle, and this contraction can be stopped by actively contracting the muscles of the pelvic floor. The alarm is an aversive stimulus that produces a conditioned avoidance response of contracting the pelvic floor, along with the external sphincter of the bladder neck. This avoidance response is maintained by negative reinforcement. So long as the response is made, the child avoids having to wake and avoids the wet bed. This model is consistent with findings from nighttime recording of pelvic floor activity. Norgaard (1989) observed that when wetting was avoided, children interrupted detrusor contractions by spontaneously contracting pelvic floor muscles. In contrast, wetting without arousal was preceded by relaxation of the pelvic floor. When wetting was avoided, children were inhibiting bladder contractions by spontaneously contracting the pelvic floor.

From alarm treatment, pelvic floor activity that occurs either when a child arouses to or sleeps through the sensation of a full bladder is a conditioned response produced by startling the child with the alarm. The sound of the alarm startles the child and causes contraction of the pelvic floor. Over time, this physiological response gets conditioned to detrusor contractions associated with a full bladder. The conditioned pelvic floor contraction is maintained to avoid being startled and having to awaken. We obtained indirect evidence for this in a study of children who completed daytime pelvic floor electromyography (EMG) assessments over the course of urine alarm treatment. Compared to those who failed to become completely dry, those who did become dry showed a steady increase in average peak voltage over the 16-week course of treatment even though their initial muscular response was weaker. The EMG assessments confirmed that muscle conditioning did in fact occur in those children who became dry. Responders as compared to nonresponders appeared to acquire more pelvic floor reactivity and responsiveness (Scott, 1993).

Bladder Capacity and Maintenance of Dry Nights

Some bedwetting may be due to developmental delays in bladder capacity. In our original formulation of full-spectrum home training (FSHT), we regarded this problem as a complicating factor rather than a primary cause. Subsequent evidence suggests that there may be a small proportion of children whose bedwetting is due primarily to the fact that their bladders cannot accommodate the volume of urine they produce at night. These are likely children who wet multiple times each night, and they are likely to be that small proportion of children who actually do fail to produce normal amounts of anti-diuretic hormone at night. Whether one approaches this from the standpoint of increasing capacity or reducing the volume produced, such approaches alone are not sufficient (Houts, Berman, & Abramson, 1994). The alarm is essential.

If nothing is done to prevent relapse, relapse may be as high as 40% within a year. In FSHT, we address the problem by building-in overlearning. In early studies, we followed a standard procedure of having the child consume 16 ounces of water immediately before bedtime. This started after the child attained 14 dry nights in a row and was continued until the child attained another 14 dry nights in a row. We replicated previous findings of cutting the relapse rate in half, from 40% down to 20% (Young & Morgan, 1972). Most recently, we modified overlearning to gradually increase the amount of water consumed. This gradual overlearning has reduced the relapse rate in half once again, from 20% down to just less than 10%.

As with any child problem, behavioral treatment requires concerted and cooperative effort from the family. The most demanding part of FSHT is training a child to wake to the alarm within the first 4 weeks. Parents have to wake the child and require the child to get out of bed before turning off the alarm. Cooperation and firm resolve are essential. Children, too, have to be ready to do the hard work.

CHARACTERISTICS OF THE TREATMENT PROGRAM

FSHT includes four components: (1) basic urine alarm treatment, (2) cleanliness training, (3) retention control training, and (4) overlearning. Components are presented in a manual for parents to follow, and a contract between parents and children forms the basis for implementing the treatment. (The manual and wall chart are available free of charge as pdf downloads at *www.drhouts.com.*). An affordable and durable, body-worn urine alarm, Malem Ultimate with Sound and Vibration, is available from *www.bedwettingstore.com/index.htm.*

The Family Support Agreement

Parents and children complete the Family Support Agreement as a trainer illustrates each step. Children follow the rule to get out of bed and stand up before turning off the alarm. Parents are told never to turn off the alarm for the child. The steps involved in cleanliness training are displayed on a wall chart (Daily Steps to a Dry Bed) placed in the child's room. The chart also displays a record of progress and is colored in as either wet or dry for each day. Parents are instructed to have the child go through with the full procedure of remaking the bed even if the sheets are not wet, something that typically happens in the latter part of training. Some children are very difficult to arouse in the first 4 weeks. It is imperative that the child be awakened so that the child turns off the alarm. It is important to give parents an easy way to determine whether their child is truly awake. Short-term memory tasks, such as choosing a password each night before bedtime or asking the child to spell a familiar word backwards, are simple ways to determine whether the child is fully awake.

Retention control training is done once a day, and the child is given money for postponing urination for increasing amounts of time in a step-by-step fashion, up to a 45-minute holding time. The total amount of money the child receives for reaching all 15 3-minute incremented goals is $12. Retention control training ends when the child attains the 45-minute goal, typically within 3 weeks.

The first goal of treatment is to attain 14 consecutive dry nights. This takes an average of 8–12 weeks. For children who wet more than once a night, the average time is 16–20 weeks. Overlearning begins immediately and is an essential ingredient for preventing relapse.

Our gradual overlearning begins by determining a maximum amount of water. The maximum is 1 ounce for each year of age plus 2 ounces. For example, the maximum amount for an 8-year-old child is 10 ounces. Children begin by drinking 4 ounces of water 15 minutes before bedtime. If they remain dry for two nights while drinking 4 ounces, the amount increases to 6 ounces. If they remain dry for two nights at 6 ounces, the water is increased to 8 ounces. The water increases continue in this fashion, 2 ounces more for every two consecutive dry nights, until the child's maximum reached. The child continues to drink this maximum until 14 consecutive dry nights are attained. In the event that a child wets, and most do at least once, a simple rule is followed. The child goes back to whatever amount was consumed on the immediate last dry night and continues with that amount until there are 5 nights in a row dry. If the child is not already at the maximum, the procedure continues as before increasing by 2 ounces for every two dry nights. The goal remains 14 consecutive dry nights during overlearning. Some children end up having all 14 at the maximum amount, but this is not required.

Optional Waking Schedule

Occasionally, it may be necessary to disrupt the child's sleep routine with a waking schedule to achieve 14 consecutive dry nights. Parents are told to wake their child hourly using a minimal amount of prompting throughout the first night. Each time the child is awakened, he or she is praised for a dry bed and encouraged to void in the toilet. The second night, the child is awakened only once, 3 hours after falling asleep. From the second night forward, the waking schedule continues with the child being awakened only once each night. Following a dry night, the parents wake the child 30 minutes earlier than than they did the previous night. If the child wets during the night, then the time of waking remains the same as the previous night. The nightly waking schedule ends when the scheduled time for awakening the child is 30 minutes immediately following bedtime. The waking schedule resumes only if the child has two or more wet nights in 7 days. When resumption is necessary, the waking schedule begins at 3 hours after bedtime and decreases in the same manner (Azrin, Sneed, & Foxx, 1973; Bollard & Nettelbeck, 1982).

Reinforcing Accomplishments and Reducing Frustrations

A focus on reinforcing accomplishments is very helpful. Children who wet multiple times each night are easily discouraged. These families need to understand that it will take 12–16 weeks as opposed to the average of 8–12 weeks for the child to get the first 14 consecutive dry nights. Informing such children that their first goal is to get from multiple wettings to a single wetting episode each night adjusts their expectations and prevents some of the frustration.

Pointing out that progress can be measured by monitoring the size of wet spots helps to focus on the process and recognize that even though every night has been a "wet night," the child is responding more readily to the alarm. As the size of the wet spot gets smaller and smaller, the child is learning to make the active avoidance response sooner and sooner. This can give the family a positive perspective and encouragement to proceed.

Relapse Prevention and Follow-Up

Overlearning is introduced by citing the data. The chance of a relapse without overlearning is 4 out of 10 (Morgan, 1978). The chance of relapse is less than 1 out of 10 if the child does gradual overlearning. The benefit far outweighs the time and effort (Robertson, Yap, & Schuster, 2014). Occasionally, there are children who simply cannot complete overlearning (i.e., they cannot get 14 consecutive dry nights during the drinking procedure). Although our outcome trials have been conducted under rigorous procedures that required completion of overlearning to be counted a treatment success, in the effectiveness work based on clinical flexibility, we have followed the procedure of suspending overlearning if a child has not completed this within 8 weeks. In such cases, the child stops nighttime drinking and simply continues with the alarm until he or she attains 14 consecutive dry nights without the drinking. The child then proceeds to follow-up.

EVIDENCE ON THE EFFECTS OF TREATMENT

We have collected both efficacy and effectiveness data on FSHT. Compared to urine alarm procedures without any ancillary procedures, such as retention control training and overlearning, FSHT is an improvement over the urine alarm alone. In fact, it is not good practice to use the urine alarm without some relapse prevention. Our components breakdown analysis of FSHT suggested that the addition of retention control training was helpful to get the child to the first 14 dry nights in a row (Houts, Peterson, & Whelan, 1986).

Figure 19.1 summarizes 1-year follow-up from six observations of FSHT. Four are from published studies, indicated by their respective dates (Houts, Liebert, & Padawer, 1983; Houts et al., 1986; Houts, Whelan, & Peterson, 1987; Whelan & Houts, 1990). The 1991 sample shows outcomes from an unpublished randomized clinical trial comparing FSHT to imipramine and oxybutynin. The 137 cases labeled 2000 were accumulated in our private enuresis clinic over a period of 14 years.

Based on five efficacy trials, about three out of every four children can be expected to stop wetting at the end of the average of 12 weeks. It is important to remember that these data were obtained under research protocol conditions in which flexibility was highly constrained. Furthermore, these samples did not

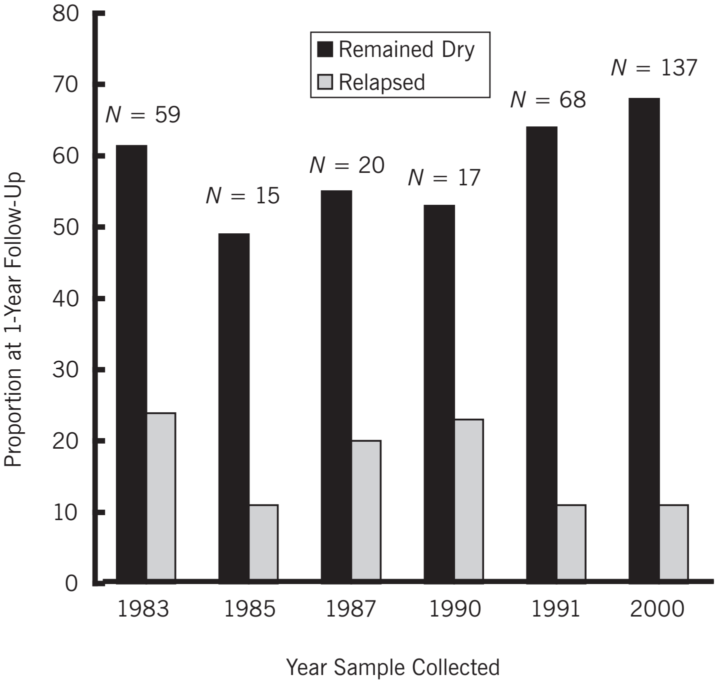

FIGURE 19.1. Mean percentage of children who remained dry or relapsed at 1-year follow-up with full-spectrum treatment for five samples. *N* = total sample size. "Relapse" was defined as two or more wet nights in 1 week.

include children with clinically significant behavioral problems such as conduct disorder and attention-deficit/hyperactivity disorder (ADHD). Single-parent households were represented, as were low-income families. However, the samples did not include families with marked marital discord or clinically significant family dysfunction. Although these demographic limitations constrain the applicability of findings, it also should be remembered that these samples are quite representative of bedwetting children, most of whom do not have these additional problems.

At 1-year follow-up, six out of every 10 children are permanently dry. The lower relapse rates observed in the 1991 and 2000 samples were children who did our gradual overlearning. In the other samples, overlearning was done in the original fashion by having children, regardless of age, consume 16 ounces of water. We now consistently find that slightly less than 10% of children relapse using the gradual overlearning.

For FSHT, effectiveness data mirror efficacy data. The 137 cases from our private clinic (last bar in Figure 19.1) were referred by pediatricians and pediatric urologists. More than in the research trials, this sample contained children with additional problems, most often ADHD. The issues in dealing with such children are the same as those in dealing with children who have other behavioral problems. Parents who use coercive parenting and engage in repeated struggles with a noncompliant child cannot expect to be successful with FSHT.

FUTURE DIRECTIONS IN ENURESIS TREATMENT

In FSHT, we have not completely solved the problem of relapse. One thing needed is a quantitative study of the effects of retreatment of relapses. We may very well be able to claim that behavioral treatment permanently cures over 90% of MPEs who follow through with the full treatment program. As it now stands, we can safely claim that for about 70–75% of them.

There are true nonresponders. If one sets aside those cases in which the child defeats the alarm or the parents fail to provide support, there are still some 10–15% of children who do not respond. We need an intensive study of true treatment failures. One important type of failure is the child who continues multiple wetting and never moves to single-episode wetting. These children are most likely that subgroup with a deficit in the natural production of antidiuretic hormone. They are also good candidates for combining behavioral treatment with synthetic antidiuretic hormone (Bradbury & Meadow, 1995; Sukhai, Mol, & Harris, 1989).

Current behavioral treatment of childhood enuresis with the urine alarm for a widespread problem is one of the best examples of a highly effective intervention based on laboratory-derived principles of learning and conditioning. As one of the oldest forms of 20th-century behavior therapy, the object lesson offered by the history of this treatment is important for our 21st century. In the middle of the second decade of the 21st century, it appears that children are typically medicated for bedwetting, and behavioral treatment is hard to find. What is it about our culture that makes pharmacotherapy so attractive and so easily sold?

Prior to U.S. introduction of desmopressin acetate (DDAVP) in 1989, the modal treatment for enuresis recommended by medical doctors was to wait for the child to outgrow it. If treatment was offered, it was the antidepressant, imipramine, which carried risks of poisoning and adverse cardiovascular events. Moreover, it was not effective. Bringing DDAVP to American medicine offered primary care physicians an opportunity to provide a treatment that was safer and that might be effective. Behavioral treatment was never integrated into primary care as it had been in the United Kingdom and Australia.

Today, managed care companies routinely pay for prescription medicines, and they often question "nonmedical" services. Even when behavioral treatment for bedwetting is covered by third-party payers, the immediate contingencies for parents are such that it is cheaper to get the less effective medication treatment. These market forces have led to less use of behavioral treatment, because behavioral treatment does not have a professional and commercial promotion source.

ENCOPRESIS

OVERVIEW OF THE CLINICAL PROBLEM

Functional constipation and encopresis affects 1.5 to 7.5% of the preschool to elementary school-age children, with boys at least twice as likely to be represented in this population (Bellman, 1966; Van der Wal, Benninga, & Hirasing, 2005).

Clinically relevant characteristics of this population, estimated to be between 604,000 and 3 million children in the United States, include a long-standing history of constipation, passage of large and painful bowel movements (BMs); stool withholding as a commonly reported medical history (Partin, Hamill, Fischel, & Partin, 1992); contentious interactions in the parent–child dyad; and the child's sadness, fear, and hopelessness in the behavioral history (Joinson, Heron, Butler, & Von Gontard, 2006). Thus, we have consistently called for a combined medical and behavioral approach to treatment and long-term management in order to mitigate a significant and preventable burden on the health care system.

The symptom of constipation that frequently leads to overflow soiling often spans more than 5 years until the child presents for treatment (Partin et al., 1992). Constipation accounts for approximately 3% of pediatric visits and as many as 25% of pediatric gastroenterology visits each year (Lewis & Rudolph, 1997) with as many as 68 to 86% experiencing painful defecation (Loening-Baucke, 1993). Following medical treatment, as many as 36 to 42% of children will persist with constipation and soiling, which demonstrates the frustration in effectively treating encopresis (Procter & Loader, 2003; Rockney, McQuade, Days, Linn, & Alario, 1996). It is this history that, as consistently documented in the literature, has led to a proposed learning-based etiological model by Mellon (2012) and his current treatment protocol presented later in his chapter.

CONCEPTUAL MODEL GUIDING THE TREATMENT

Mellon (2012) presented a model of typical defecation dynamics leading to the development of successful toilet training. The model describes the role of constipation on diminishing rectal sensitivity and contributing to painful defecation leading to stool withholding and fecal incontinence, and has been helpful in demystify the problem of encopresis. The process of normal defecation is explained, with an emphasis on the child's awareness of internal signals that need to be recognized in order to execute the behavior chain leading to independent use of the toilet in order to remain accident free. Through discrimination learning, the child recognizes that the sensation of fullness in the rectum when stool is present and the relaxation of the internal anal sphincter is the moment that active inhibition of defecation is needed until the child disrupts current activities, seeks out the location of a toilet, undresses, and sits on the toilet to execute a Valsalva response to complete defecation. This process of independent toileting and personal hygiene is shaped through both positive and negative reinforcement (i.e., praise and expressed disappointment) provided by a caregiver.

The pathway to encopresis is the result of chronic constipation and passage of painful, large-diameter feces, which contributes to stool withholding in order to avoid pain and is the typical history of more than 80% of children with encopresis. Hard and pebble-like stool is especially difficult to pass and leads to accumulation of feces and eventual impaction. Rectal impaction leads to stretching of the bowel tissue, further reducing anorectal sensitivity, which allows for the accidental passage of small amounts of stool that is outside the awareness of the child. Periodic passage of large-caliber, toilet-clogging, and painful BMs leads to the avoidance of toileting by suppressing the urge to defecate by contracting the external anal sphincter and gluteal muscles while standing in a stiff, cross-legged posture, thus negatively reinforcing the avoidance of pain. This withholding behavior is often described by caregivers and misinterpreted as the child not being able to defecate. It is assumed that years of soiling also contribute to the habituation to the odor of feces. This process is even further compromised as the avoidance of defecation is generalized to the avoidance of toileting via ignoring the need to visit the toilet (if perceived at all), denying or lying about accidents, and attempting to hide soiled underwear. It is believed the child develops a state of learned helplessness or indifference to soiling accidents, as he or she truly is unable to control bowel function. With this explanation, the reader will appreciate the true complexity of not only fecal continence but also the difficulty in effectively treating encopresis. Thus, treatments should address the physiological aspects of chronic constipation and the social-behavioral aspects of avoidance of appropriate toileting in the context of biobehavioral treatments.

The North American Society for Pediatric Gastroenterology and Nutrition (NASPGN) published a four-step, evidence-based guideline for assessing and treating pediatric constipation. It begins with education to demystify the problem of constipation leading to painful defecation and stool withholding in the child, disimpaction of the hard and large amount of stool in the rectum through the use of oral or rectal laxatives, preventing reaccumulation of stool in the rectum with increased dietary fiber or long-term use of laxatives and stool softeners, and long-term follow-up with the child to manage possible relapses (Baker et al., 1999). This was further echoed in a consensus guideline published by the University of Michigan and disseminated through the federally funded National Guidelines Clearinghouse (University of Michigan, 2008). Algorithms were provided for accurate diagnosis and long-term management and fading of treatment. These guidelines are a valuable contribution to the proper management of chronic constipation and encopresis through the use of a combined medical and behavioral approach with easier to understand diagnostic criteria compared to the DSM-5 (American Psychiatric Association, 2013).

CHARACTERISTICS OF THE TREATMENT PROGRAM

At the first encounter, psychosocial assessment of developmental and medical history, current family structure and functioning, and presence of psychopathology that may have implications for treatment are gathered. A standard demographic questionnaire that most institutions or clinics utilize is most helpful in this regard. Many standardized measures of a child's behavioral functioning are helpful in identifying disruptive behavior problems in children or dysfunctional parent–child relationships that create barriers to implementing treatment.

A thorough history of toilet training efforts and the progression of fecal incontinence with current symptoms, and parents' efforts at correcting the incontinence will document the subject's pathway to incontinence. This story often includes the initial emergence of constipation, painful defecation leading to stool withholding, and eventually fecal incontinence and behavioral resistance to the caregiver's efforts to managing the problem. Often highlighted are the long-standing coercive and entrenched interactions in the parent–child dyad. It is this coercive history that has to be mitigated in order for the encopretic child to benefit from evidence-based treatment. At this point, ample time is taken to demystify the problem of constipation and encopresis with the use of diagrams outlining normal defecation and the adverse impact of constipation leading to encopresis. As a supplement, the educational video called *The Poo in You* (Kendall, 2013) is quite informative and entertaining for the child and parent.

The Encopresis Game Board Protocol

We contend that engaging the child in his or her natural tendency toward imagination and play is the key to success in the form of the Encopresis Game Board Protocol (GBP) and represents a biobehavioral approach to treatment (written instructions are available by request from M. W. Mellon). The GBP is essentially a token economy that has a long and proud history of being considered a standard operant intervention with proven effectiveness (DeLeon, Bullock, & Catania, 2012). However, the GBP directly engages the child and parent by individualizing the plan through decorations that represent the child's unique interests.

Each game board is constructed on poster board. The parent sketches out a long and meandering pathway that is segmented into spaces large enough to accommodate a typical sticker chosen by the child, has the value of one credit per space, and should last about 1 month. On colored squares, the child's chosen six prizes (parent approved) are evenly spaced on the board plus a grand prize at the end of the game board pathway. Often referred by a physician who has already assessed and treated the constipation problem, each child follows a standard biobehavioral treatment protocol: medication designed to clean out an impacted bowel and maintain bowel regularity, a sitting schedule, and appropriate use of the toilet without fecal incontinence each day.

Each component of treatment is assigned credits that are represented on the board with a sticker. The number of credits for each treatment component varies according to the child's clinically relevant behavior, with most credits awarded to defecation in the toilet and accident-free days. As the child accumulates stickers, he or she eventually lands on a prize square, at which time the reward is earned. The parent is encouraged to praise the child's efforts and remain focused on the success as opposed to the errors (i.e., soiling). If soiling occurs, the child is expected to immediately clean up without protest or punishment. Each child is asked to bring his or her constructed game board to a first follow-up visit to do a "show and tell" for the therapist and further promote the child's positive efforts.

Parents are instructed to track treatment progress with the use of data sheets of clinically relevant behavior, such as BMs in the toilet, soiling accidents, scheduled toilet sits, accident-free days, and adherence to medication, and bring them to each follow-up visit that is scheduled every 2–4 weeks during the course of treatment. If the child is not accident free for more than 4 weeks when the game board is completed, a second game board is initiated using the same method. A brief case example follows with patient known as "Bobby" (name changed for privacy and written permission granted by parent).

"Bobby" was an 8-year-old boy with a history of infrequent stooling that emerged during toilet training, after his second birthday. Bobby resisted his parent's prompts to sit on the toilet to defecate but mastered urination in the toilet without trouble. He was reluctant to interrupt a fun activity to visit the toilet, which eventually led to days without bowel activity, passage of large and painful BMs, and eventual fecal incontinence. Bobby's constipation was treated with Miralax prior to behavior therapy. With the use of diagrams and the patient's own kidney, ureter, and bladder (KUB) X-ray, Mellon spent some time demystifying the problem of fecal incontinence, the effects of constipation on painful defecation, and how normal defecation occurs. Bobby and his mom were presented with a written description of the GBP and informed how to construct a game board with the necessary materials, which he received with much interest and enthusiasm. Four weeks later, at the first follow-up visit, Bobby was excited to show his game board, as illustrated in Figure 19.2. As seen in Figure 19.3, Bobby had shown an increase in BMs in the toilet and a reduction in soiling accidents. Follow-up 5 weeks later shows a complete cessation of fecal soiling and 3 consecutive weeks of being accident free. At this point follow-up visits were on an as-needed basis.

EVIDENCE ON THE EFFECTS OF TREATMENT

Consistent with the theme of biobehavioral treatment, a brief summary of medical intervention is presented to better understand its role in treating encopresis. Given that 70 to 90% of children who present with encopresis struggle with constipation, initial treatment includes laxative and stool softeners (Benninga, Voskuijl, & Taminiau, 2004). Unfortunately, used as the sole treatment for constipation and

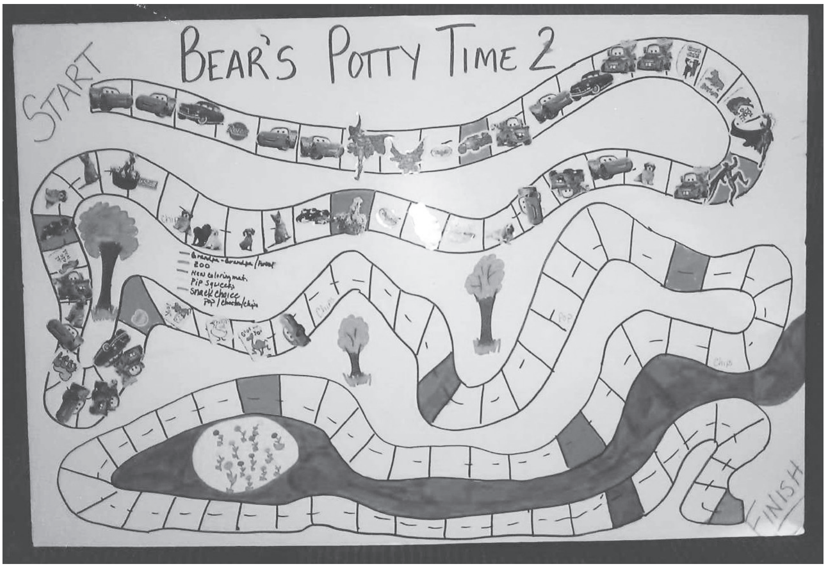

FIGURE 19.2. Bobby's game board.

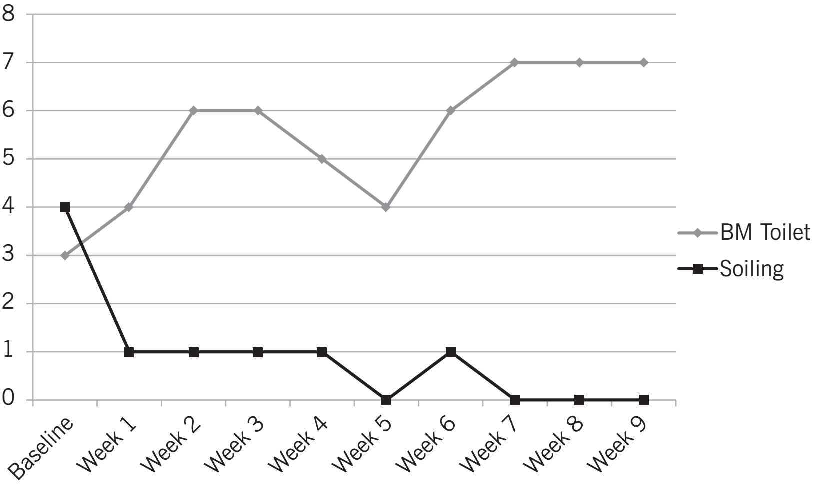

FIGURE 19.3. Frequency of BMs in toilet and soiling during Bobby's treatment.

soiling, it is considered to lack efficacy, with an estimated cure rate of 40% (range: 5 to 59%) and measured at 16- to 18-month follow-up (McGrath, Mellon, & Murphy, 2000). Although there are many choices available for stool softeners, perhaps the most commonly used constipation medicine is the osmotic laxative called polyethylene glycol (PEG), which has undergone considerable scrutiny for efficacy and is easily mixed into most beverages. A small meta-analysis of PEG 3350 compared to placebo or against lactulose, showed significantly more BMs per week for PEG 3350, with minimal side effects or adverse events. There is acceptable evidence for the use of PEG 3350 as a first step in treating constipation.

In a review of the encopresis literature, it was reported that the most efficacious treatments combine medical interventions (i.e., bowel cathartics, stool softeners) with positive reinforcement of relevant toileting behaviors such as toilet schedules, medication adherence, appropriate toileting, and accident-free days (McGrath et al., 2000), with a cure rate for combined treatment of 64% (range: 51 to 75%). The authors pointed out the need for additional research that included randomized designs with clearly articulated treatment components and outcome variables. These findings were echoed in a meta-analysis of behavioral and cognitive interventions for encopretic children (Brazzelli, Griffiths, Cody, & Tappin, 2011). Although the authors pointed out the numerous deficiencies in the methodologies of the studies included in the meta-analysis, with a clear need for further research to clarify what treatments are effective, they did conclude that behavioral interventions plus laxative therapy, rather than laxative therapy alone, improves continence in children with functional fecal incontinence (i.e., encopresis).

Freeman, Riley, Duke, and Fu (2014) extended the prior meta-analytic methodology efforts by including only randomized controlled trials (RCTs) of children with idiopathic constipation and soiling, using mixed-treatment comparison methods to analyze information in heterogeneous studies, and differentiating biofeedback from other behavioral approaches. Results showed that behavioral treatments for fecal incontinence compared to laxative treatment alone were more likely to meet the author-defined success criteria. Behavioral treatments provided supportive evidence for decreasing soiling as compared to laxative therapy alone but showed less successful BMs in the toilet than laxative treatment. Disappointingly, the authors conclude that little new information has been gleaned from the literature since McGrath et al. (2000). Using behavioral interventions (e.g., reinforcement) is likely to improve appropriate toileting behaviors and success rates, and reduce soiling frequency. Clinicians can be confident that using behavioral interventions to treat encopresis is consistent with evidence-based practice, and this is the basis for developing the GBP.

FUTURE DIRECTIONS

Demonstrating effective treatment for encopresis has been quite challenging for clinical researchers, with little improvement demonstrated in systematic reviews and meta-analyses over the last 16 years (McGrath et al., 2000; Brazzelli et al., 2011; and Freeman et al., 2014). It has also been reported that parents can become quite frustrated with their child's fecal incontinence, with as many as 43% attributing the soiling to a child's laziness, 14% believing their child wants to aggravate them, and 52% of the children being described as stubborn, as indicated in a patient review study of an encopresis clinic over a 20-year period (Fishman, Rappaport, Schonwald, & Nurko, 2003). As a consequence of the frustration, new and somewhat intrusive treatments are being explored. For example, small-group studies and case reports have included the use of daily antegrade colonic enemas via appendicostomy (Randall, Coyne, & Jaffray, 2014), intrasphincteric injection of botulinum toxin (Irani, Rodriguez, & Doody, 2008) to prevent the stool withholding response, and transabdominal electrical stimulation (Leong et al., 2011) to increase motility. The thoughtful consumer of clinical research must remain skeptical until there is well-controlled research based on plausible mechanisms of action that supports the efficacy of these methods.

We would like to see more research in the area of medical–behavioral interventions such as those by the University of Virginia Health Sciences research group (Borowitz, Cox, Sutphen, & Kovatchev, 2002; Cox, Sutphen, Borowitz, Kovatchev, & Ling, 1998; McGee, Ritterbrand, Thorndike, Cox, & Borowitz, 2009; Ritterband et al., 2003). They have demonstrated promising efficacy with a combined medical–behavioral intervention called enhanced toilet training (ETT) and have developed this into an Internet treatment approach to increase access by the public. The reader is directed to Mellon (2012) for a detailed summary of this approach. It was recommended that the work be replicated and that this approach include process variables that may have implications for predicting which children are more likely to benefit from it.

CONCLUDING COMMENTS

Collectively, we have spent many years training graduate students in clinical psychology, pediatric psychology residents and fellows, and pediatric residents in how to manage encopresis based on the literature and our extensive clinical experience. The take-away message continues to be quite simple: The best evidence-based practice for treating encopresis is a biobehavioral approach that incorporates medical intervention to mitigate the long-standing constipation and painful defecation, combined with behavioral interventions to motivate the child and caregiver to adopt appropriate toileting behaviors, and doing this long enough to overcome the years of stool withholding and pain avoidance, frustration, and shame of fecal incontinence.

Thirty-three years ago, one of us (Houts et al., 1983) imagined that we might have an efficient delivery system for successful behavioral treatment. We are far from that. In the larger scheme of health care, the problem with behavioral treatment is that it is not being delivered. Unlike medication and diapers, behavioral treatment has no corporate backing. The history of treatment for bedwetting has some interesting lessons to teach regarding the relative role of medications as contrasted with conditioning-based behavior therapies. Alarm-based treatment is by far the most effective current treatment and can cost less than alternative medication treatments (Glazener, Evans, & Peto, 2003; Houts, 2000; Houts et al., 1994). At least in the case of bedwetting, behavior therapy is the treatment of choice. For encopresis, we recommend that pediatricians and psychologists form collaborative relationships to manage the encopretic child by treating the fecal impaction, preventing its reaccumulation to foster comfortable defecation (the pediatrician), and reducing the frustration in the parent–child dyad through demystification, applying evidence-based behavioral interventions to important behavioral targets such as positive and negative reinforcement of toilet sits, medication and fluid intake adherence, appropriate defecation in the toilet, and clean underwear (the psychologist). We have presented the GBP, a simple intervention that is consistent with the best evidence-based practices. What is abundantly clear is that establishing the superiority of one treatment over all others is no guarantee that the best treatment will be delivered in a market-driven health care economy. That outcome is disappointing. It is our hope that empirically oriented and research-based clinical psychologists will continue to teach students about behavior therapy and thereby keep alive the rich information about conditioning treatment for bedwetting and encopresis.

ACKNOWLEDGMENTS

Partial support was provided by a Centers of Excellence grant from the State of Tennessee to the Department of Psychology, University of Memphis, and also by National Institutes of Health Grant No. R01 HD21736 to Arthur C. Houts.

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CHAPTER 20

Functional Family Therapy for Adolescent Substance Use Disorders

Holly Barrett Waldron, Janet L. Brody, and Hyman Hops

OVERVIEW OF THE CLINICAL PROBLEM

Substance use disorders (SUDs) can emerge at any age. Although SUDs typically emerge after age 14, the precursors can be seen long before adolescence. A complex interplay of biological, behavioral, and environmental factors have been linked to the development of adolescent SUDs. The most prominent influences include the family (e.g., conflict, family violence, parent substance use, poor supervision), the larger social-ecological context (e.g., drug availability, legal regulations, permissive attitudes, peer drug use), and the adolescent's genetic vulnerability for poor impulse control or a high need for excitement. Adolescent substance use is pervasive in the United States: Nearly 70% of high school seniors report drinking alcohol, 50% report using marijuana or other drugs, 40% report smoking tobacco, and 20% report using a prescription drug inappropriately (Johnston, O'Malley, Miech, Bachman, & Schulenberg, 2016). Thus, to some extent, experimenting with drugs may represent a normative developmental process. The prevalence of SUD in the United States is 8% for adolescents ages 12–17 and 20% for older youth and emerging adults ages 18–25 (Kessler et al., 2012; Center for Behavioral Health Statistics and Quality, 2015). These youth continue or escalate substance use in pursuit of specific pharmacological effects, the desire for new experiences, attempts to deal with problems, managing negative emotions, enhancing work performance, fitting in socially, establishing a sense of identity, or other reasons. Moreover, youth with SUDs are at extraordinarily high risk for long-term functional impairments persisting into adulthood, including cognitive deficits, comorbid disorders, legal involvement, educational and vocational underachievement, social and family dysfunction, chronic health issues, serious injuries, trauma-related problems, violence, and death. Given increases in marijuana legalization for adults and more tolerant societal attitudes toward drugs, the need for effective adolescent SUD treatment is high.

Adolescence is a critical period for brain development. The regions of the brain associated with reward and pain that are closely linked to drug use mature faster than regions linked to making decisions and managing emotions and impulses, which continue to mature until around age 25. Having a fully functional reward-seeking, pain-avoidance system in place and considerably less impulse control and judgment with which to operate leaves adolescents particularly vulnerable to the negative consequences associated with substance use. Moreover, risk of developing an SUD is closely linked to susceptibility to co-occurring disorders (CODs), which also commonly first appear during adolescence (Kaminer & Bukstein, 2008). Prevalence rates for comorbid disruptive behavior disorders in the United States may be as high as 85%, with posttraumatic stress disorder up to 35% and 50% (males and females, respectively), depression near 35%, and trauma experienced by up to 90% of substance abusers (Kaminer & Bukstein, 2008). Evidence suggests that SUDs and CODs are not independent and may represent manifestations of a single process that occurs within a deviant behavior constellation and are part of a known developmental trajectory in which the family plays a significant role (Patterson, DeGarmo, & Knutson, 2000). Consequently, regardless of the biological or environmental sources of influence underlying this trajectory, SUDs and CODs are addressable by an integrative intervention approach that targets the family relational context in which the problem behaviors emerged. Adolescents with SUDs and CODs often have common behavioral skills deficits, such as poor problem solving, limited coping strategies, and emotion dysregulation, which can be targeted within an integrative treatment framework that also considers the unique pharmacological and addictive properties of different substances of abuse. Treatment outcome research has shown that family-based interventions are associated with improvements across a wide range of behavioral domains (Stanton & Shadish, 1997; Waldron & Turner, 2008). The evidence indicating that "dual diagnosis" increases the likelihood of continued problem behaviors and is associated with poorer treatment outcomes underscores the need for an integrative family-based SUD treatment that can address the range of youths' problems. The recognition of the importance of the family to leverage change underlies our family-centered approach.

CONCEPTUAL MODEL GUIDING THE TREATMENT PROGRAM

Functional family therapy (FFT) for SUDs is an ecological family systems approach that conceptualizes alcohol and drug abuse as behaviors that develop and are maintained in the context of maladaptive family relationships. Changing family interactions and improved relationship functioning is key to reducing adolescents' substance involvement. An essential feature of family systems models is that the locus of problem behavior is relational, transcending the individual; thus, the focus of treatment is also relational. Our conceptual model incorporates developmental, epidemiological, and behavioral perspectives in understanding substance abuse, individual characteristics, family dynamics, and extrafamilial contexts. The specific application of evidence-based strategies from cognitive-behavioral therapies (CBTs) in addictions treatment and other areas is unique to this model. An advantage of this integrative approach is the capacity to treat CODs using a single approach, alleviating the need for distinct interventions for each targeted behavior or condition.

FFT for SUDs is grounded in theory, research, and clinical practice (Waldron, Slesnick, Brody, Turner, & Peterson, 2001; Waldron & Slesnick, 1998). The approach is listed on the Substance Abuse and Mental Health Services Administration (SAMHSA) National Registry of Evidence-Based Programs and Practices (NREPP) and is available for community implementation through the dissemination organization Leading Implementation of Functional Family Therapy (LIFFT). FFT for SUDs links treatment strategies developed for addictions and other problems that co-occur with substance abuse, including depression and trauma, and integrates these treatment strategies into a unitary family-centered approach. Like the original FFT approach for delinquent youth (Barton & Alexander, 1981; Alexander, Waldron, Robbins, & Neeb, 2013), the FFT model for adolescent SUDs incorporates a core philosophy, a set of guiding theoretical principles, and a fully specified intervention approach integrating strategies and techniques to address multiple co-occurring problems. Our ongoing research informs the application of the model to distinct populations and contexts, and guides implementation to facilitate the adoption, training, and sustainability of FFT for SUDs and related problems in community settings. The influence is bidirectional, as our clinical experiences continue to guide our hypothesis testing and empirical validations.

CHARACTERISTICS OF THE TREATMENT PROGRAM

The treatment goals for families of adolescents with SUDs include reducing substance use and co-occurring problems, improving family relationships, and increasing adolescents' productive use of time. To achieve these goals, the focus is on changing interaction patterns in the family such that the functions served by the drinking or taking drugs are met through other, more adaptive behaviors. The entire family is included whenever possible. This facilitates the understanding of the problems within the family as a whole, particularly in relation to the development of substance abuse and other problems, motivating family members who are substance users, using a relational framework, to participate in treatment with the target adolescent, and harnessing the influence of family members who are nonusers to support the sobriety efforts and recovery of others. FFT typically involves 14 weekly 1-hour sessions, with more frequent or longer sessions initially to potentiate the initial change process. Near completion, sessions may be spaced farther apart as families are able to maintain new behaviors independently. Following treatment, four brief, biweekly telephone booster sessions help to consolidate gains and prevent relapse. The specific methods used to achieve treatment goals are accomplished in five distinct phases: engagement, motivation, and assessment overlap and are ordinarily completed first, followed by behavior change and generalization. Each of the phases has associated goals, intervention strategies and techniques, and therapist skills. Homework, tailored to the unique focus of each phase, is used throughout treatment.

Engagement

Engagement focuses on maximizing initial positive expectations for change among family members. The importance of engaging families in treatment is underscored by the relatively high rate of dropout in addictions treatment and adolescents' resistance to drug treatment. Engagement processes are flexible and are driven largely by family members' impressions and evaluation of the treatment program and therapist. The goal is for family members to experience the program as a source of support and the therapist as a credible agent of change. Influences on treatment expectancies may include perceived credibility and characteristics of the therapist, the referral process, the reputation of the agency, and the friendliness of program staff. Adopting the language system used by the family, normalizing problems, and expressing confidence are active ways therapists can influence family expectations for change. Because FFT is designed to include family members living together, and any others who are central to presenting problems, getting the whole family to attend therapy is often the first engagement challenge and initial target of intervention.

Motivation

Families of youth with SUDs enter treatment with myriad complaints (e.g., school problems, arrest, drug use, lying, disrespect, or noncompliance) and established patterns of dysfunctional interaction. These patterns may involve hostility, conflict avoidance, or some other pattern that interferes with open communication and effective problem solving. In addition, youth with SUDs generally enter treatment with low motivation or readiness to change their substance use behavior, and parents often focus solely on the youths' need to change, with little awareness or understanding of how they themselves may be playing a role in the family's problems. From the beginning, the therapist works to shape a new understanding of the problems by examining how they emerged and are sustained within the family relationships. When families do not bring up drug use directly, the therapist raises the topic nonjudgmentally, emphasizing the contextual, relational aspects of the behavior and focusing on understanding how the family has behaved and interacted around drug use. A core philosophy of FFT for youth with SUDs is working with families in a "spirit of respect" that highlights families' strengths from the outset and sets an accepting, nonblaming, nonjudgmental tone to lower family defensiveness and hostility. The primary strategies for motivating families include emphasizing strengths or areas in which the family is working well; developing a relational framework by interconnecting the thoughts, feelings, and/or behaviors of family members; reframing or changing the meaning behaviors and interactions that are perceived negatively to a benign or more positive understanding of them; and actively managing aversive interactions. The therapist's use of warmth, empathy, and humor in responding contingently to family members and maintaining a balanced alliance with family members, is key to maintaining the respectful, accepting style of an FFT therapist. The goals are for every family member to experience therapist support, and that no one person is blamed for the presenting problem.

Part of the therapist's job is to highlight the interactions between family members to increase awareness of how they affect one another. The therapist can facilitate a relationship focus by asking questions and identifying sequences of behavior that highlight the relational impact of family members' behaviors, thoughts, and feelings, and guide the family away from discussions of the adolescent's problem behavior. Another core technique in FFT is reframing problem behavior to change the meaning and value of negative emotions and behaviors in the family. Reframing may operate by suspending the automatic negative thinking and response patterns in families, requiring members to search for new explanations of family behavior. Reframing also offers a cognitive perspective that opens the door to more effective communication and expression of feelings, and reconnects families with their underlying care for each other. If family members can be helped to consider that their own and others' behaviors are motivated and maintained by variables other than individual malevolence (e.g., misguided attempts to cope or protect others), they are more likely to see change as possible. For families that engage actively in hostile exchanges, therapists use reframing or relational comments, point out processes observed, or actively interrupt interactions to slow the pace of therapy. Some reframes may focus on motives (e.g., "So letting your son live at home after he turned 18 allowed you to make sure he was safe and, at the same time, kept you from experiencing the loss of having him move out"). Others emphasize a common experience shared by all family members and evolve into overarching themes that can be returned to throughout therapy (e.g., "A lot of times it sounds like important things don't get said in this family because you want to protect one another from pain and hurt"). Observing repeated patterns of behavior, the therapist can use knowledge, inferences, and guesswork about the family to reframe interaction patterns until the negativity is reduced and family members have adopted the shift in perspective.

Exploring and clarifying the *meaning* of substance use in families is an important task for the motivation phase of treatment. Substance use often has a profound impact on multiple generations within families. Parental and sibling substance use are among of the strongest predictors for adolescent SUDs, and a history of use among extended family members is common. Based on prior experiences, each parent may have strongly held beliefs about substance use that differ from those of the other, and that create difficulty in their relationships. In one family we worked with, the mother had lost her brother to a drug overdose, and she feared her son might escalate his drug use and die, too, whereas the father was relatively unconcerned about the son's drug use. The resulting disagreements between the parents left the mother feeling frustrated and alienated, the son confused by his parents' mixed messages, and the father caught in the middle. By examining the different meaning each parent placed on drug use, the therapist was able to highlight the relational nature of the problem. The goal was not to persuade parents to change their views. Instead, the therapist noted the limitation in working as a team the difference of opinion created, leaving family members feeling unsupported by one another, and contributing to parental conflicts that made it easier for the youth to continue the problem behavior.

Another common pattern is an overly punitive approach, with limited attention to any positive aspects of the relationship. When parent define any new instance of substance use as a rule violation or failure, the stage is set for crises that disrupt treatment and interfere with the expected process of recovery. In such cases, the focus needs to expand beyond the overemphasis on rules, toward reestablishing strong positive bonds as a motivational foundation for change. Parents may also voice concern over the dangers of "hard" drugs but express tacit or explicit approval for marijuana, and in these families, youth and parents alike often enter treatment without a perceived need for change. Therapists may enhance motivation by acknowledging the perceived benefits of use, while reinforcing the family's comments about the negative consequences of use.

Assessment

Assessment takes place at two levels: (1) what change is needed (i.e., the behavioral targets of change) and (2) how the behavior change needs to occur in order to maintain the functions served by the behavior (i.e., the process of change). FFT for adolescent SUDs relies on family report, in-session observations, and formal assessment instruments as deemed appropriate to determine what changes are needed. Urine toxicology screening can also offer an invaluable resource to FFT therapists as long as the results of screening are integrated into family sessions as a way to encourage and support sobriety efforts and not used to emphasize problem behaviors and justify punitive responses. The concept of the interpersonal function of behavior is unique to the FFT model and is an essential element in determining how behavior change techniques should be implemented. The therapist devises a unique plan for each family that takes into account the characteristics and needs of each individual, as well as the fit between these individual characteristics at the relationship level.

Relational functions are defined in terms of the interpersonal relatedness or interdependency they allow family members to achieve with each other. Each family member has a relational function (i.e., closeness, distance, or midpointing) with each other member of the family. The essence of understanding the interpersonal function of behaviors between members of each dyad is to look at the outcome of the behavior. If a behavior is associated with repeated interaction patterns in families that result in family members experiencing significant physical or psychological separation from one another, then the outcome, or function, of the behavior is distance. Conversely, if the behavior results greater connection or interdependency between family members, then the function is closeness. Some relationships are characterized by marked distance and closeness, with the blending referred to as "midpointing." Functions are unique to each relationship, and any given behavior may simultaneously produce one function in one dyad and another in a different dyad (e.g., the son's drug use elicits nurturance and concern from his mom and simultaneously increases distance between the son and the dad, the husband and wife). FFT functions are not conceptualized as inherently good or bad. Rather, functions can be expressed in either adaptive or maladaptive ways. The focus of treatment is on changing the maladaptive behaviors by which functions are achieved, while preserving the functions associated with family relationships. The identification of the functions for each dyad in the family allows the therapist to develop a change plan to address maladaptive behaviors, while ensuring that each family member's functions with others are maintained, so that change will be sustained.

Behavior Change

During the motivation phase, techniques are used to change the meaning of behavior, and the attributions family members have about one another. While such changes are important prerequisites to long-term change, they will not be maintained unless the family adopts more functional behavioral patterns. The behavior change phase focuses on establishing and maintaining behavior change at both the individual level and for the family as a whole. In the behavior change phase, the motivational framework created and the assessment data obtained in the engagement and motivation phases are used to guide the selection and implementation of specific behavioral techniques. The primary goal of the behavior change phase is to establish new behaviors and patterns of interaction that will replace old ones, preventing maladaptive patterns from reappearing and producing long-term change in the family.

Interactions in this phase are highly structured, and the therapist is active and directive. Techniques introduced by the therapist in the behavior change phase can include any strategies or devices capable of changing behavior and accomplishing these goals. Clinicians have the flexibility to draw from other evidence-based cognitive and behavioral treatments to integrate behavior change strategies as needed. Session topics include increasing positive family activities, communication ("feeling heard"), problem solving, anger management, assertiveness skills, coping with depression and anxiety, parenting skills, and job skills. Therapists also apply specialized, evidence-based cognitive-behavioral interventions for substance abuse. For example, therapists often conduct a functional analysis of substance use behavior with the whole family to identify antecedents and consequences associated with drinking and/or drug use and the quantity and frequency of substance use. This process can help to reinforce the relational nature of substance use problems and therapist's reframes regarding substance use in the family. The functional analysis can also help guide the selection of substance-specific interventions, and highlight ways the adolescent and parent can support each other in their efforts to reduce their use. This process also establishes safety in sharing about drug use and often helps the family realize significant movement toward increased trust and open communication.

Other behavioral change modules or techniques that may follow the functional analysis include skills for coping with urges and cravings to use drugs or alcohol; substance refusal; decision making for drug avoidance; and alternatives to drug use, as needed, for particular youth and families. These strategies are woven into a cohesive behavior change plan that allows each session to build on skills learned in prior sessions. For example, strategies for regulating negative moods and emotions will include links between moods and substance use. Sessions on negative mood management focus on an awareness of one's own and others' negative moods and provide ways to deescalate emotional responses and communicate needs to other family members more effectively. "Contingency management" (CM), an empirically supported approach that involves providing low-cost tangible items or money to youth who regularly demonstrate a targeted behavior change, may also be integrated into treatment. In CM, incentives are contingent on evidence of abstinence (i.e., urine screening) or other behavioral goals. Within FFT, toxicology results and incentives are discussed in the context of the family's constructive efforts to support the youth's recovery efforts. Most families also receive training, beginning in the behavior change phase and continuing into the generalization phase, in relapse prevention. Relapse and skills for preventing relapse are typically discussed with the entire family, and specific responsibilities are assigned to family members to help support the adolescent's sobriety.

How these techniques are applied will again depend on an understanding of interpersonal functions. Intervention attempts can lead to rapid change or resistance depending on how well the intervention strategy has been fitted to each family member's interpersonal function with each other family member. Even when the behavior change strategy is technically correct and well developed, resistance will arise if the intervention implemented is inconsistent with one or more of family members' interpersonal functions. For example, a youth's opiate use may result in considerable distance from his parents, while at the same time creating a context for his father to connect more closely with his mother as they discuss concerns about their son. Attempts to move the son into more interdependent and intense interactions with his parents would be incompatible with the family's relational functions and less likely to succeed, while encouraging the youth's involvement in activities outside the family that compete with opiate use would be more likely to succeed. Alternatively, a contact function between a youth and a parent may set the stage for the parent to provide more direct support in the youth's recovery efforts. The unique emphasis of the FFT model is on the application of techniques in the context of the assessment of functional payoffs in the family and tailored to each set of family relationships.

Generalization and Termination

The final phases of FFT are designed to facilitate maintenance of behavior change and the generalization of treatment gains to the natural environment. As behavioral changes are established in the family, the focus of therapy shifts toward maintenance of change and establishing the family's independence from the therapy, with the therapist gradually taking a less active role. A key goal of the generalization phase is for families to apply their newly acquired behavioral skills to novel situations outside of therapy. Family members are continually faced with new challenges that can quickly send them back into prior behavior patterns. While still in therapy, it is helpful to review the families' attempts during the week to use their newly acquired behavior change skills. Family members tend to be more successful using the behavior change strategies over time when they are able to identify situations where they failed to use them at home and examine the barriers they experienced putting them in place. Some extrafamilial factors cannot be changed (e.g., neighborhood crime, availability of drugs) and avoidance coping strategies learned in behavior change may be generalized to the ecological environment. Other factors may be modifiable (e.g., responsiveness of school personnel). The therapist may interact directly with legal and educational systems on behalf of the family and help families interact more effectively with extrafamilial systems on their own. Anticipating future problems and potential solutions will help the family increase the likelihood of appropriate responding when the situation arises, further solidifying treatment gains. Therapy moves toward termination when drug and alcohol use and other problem behaviors are reduced or eliminated, adaptive interaction patterns and problem-solving styles have been developed and occur independent of the therapist, and the family appears to have the necessary motivation, skills, and resources to maintain a positive clinical trajectory without the support of ongoing services.

EVIDENCE ON THE EFFECTS OF TREATMENT

FFT has received considerable research attention over the past 45 years. The first FFT randomized clinical trials (RCTs) were conducted with delinquent adolescents charged with minor offenses. In the early studies, reviewed by Alexander et al. (2013), FFT was associated with significantly greater improvements in family functioning and decreased recidivism, relative to a range of comparison conditions, including individual therapy, probation supervision, other family-based treatment, and no-treatment controls. Moreover, significant primary prevention benefits of FFT were noted in reduced recidivism rates for siblings of target adolescents. Barton, Alexander, Waldron, Turner, and Warburton (1985) also found support for the effectiveness of FFT (1) as delivered by bachelor's degree-level counselors, (2) for severely delinquent youth, and (3) in a cost-effectiveness study comparing FFT to out-of-home-placement for delinquent youth referred through the family court. Despite methodological limitations of the early research, relative to current standards, the consistent improvements across these studies, as well as independent replications by other investigators, strengthened confidence in the positive findings (cf. Alexander et al., 2013). A formal community effectiveness evaluation, conducted by Washington State Institute for Public Policy, involved rural and urban youth in 14 Washington counties randomly assigned to FFT or probation services as usual (Aos, Phipps, Barnoski, & Lieb, 2001; Barnoski, 2002). Significant reductions in recidivism were found for therapists who implemented FFT with fidelity. The financial benefit of FFT is estimated at $7.50 for each dollar of program cost (Aos, Lieb, Mayfield, Miller, & Pennucci, 2004). In another community-based study, Baglivio, Jackowski, Greenwald, and Wolff (2014) compared multisystemic therapy (MST) and FFT for youth involved with the juvenile justice system in the state of Florida, using propensity-score-matching techniques to equate the two samples. The results indicated that FFT was superior to MST, with significantly lower rates of new offenses during probation for all youth, for females and low-risk youth, and for high-risk youth during the 1-year postprobation follow-up. Overall, the research evidence supports the effectiveness of FFT for delinquency and youth disruptive behavior.

Building on the FFT approach for delinquent youth and the promising support for FFT for substance-abusing youth (Friedman, 1989; cf. Stanton & Shadish, 1997), the authors and their colleagues developed and refined FFT for families of youth with SUD and other CODs through a series of formal RCTs conducted in New Mexico and Oregon (see Table 20.1). Youth in each of the studies were referred for substance abuse treatment and presented with various co-occurring conditions, such as depression, conduct disorder, delinquency, HIV-risk, and trauma-related problems. All studies involved random assignment, assessment staff naïve to treatment condition, manual-guided treatments, multimethod–multisource measurement, rigorous fidelity monitoring, and 12–19 months of follow-up assessment.

In the first two trials, youth were randomly assigned to one of four intervention conditions: FFT, individual CBT (ICBT), group CBT (GCBT), or a combined CBT and FFT intervention (IB-FFT), during which two different therapists simultaneously delivered 12 sessions each of FFT and CBT. In the first study (Waldron et al., 2001), all conditions consisted of 12 sessions except IB-FFT (i.e., 24 sessions). In the second (Waldron & Turner, 2008), all conditions involved 14 sessions, and IB-FFT typically consisted of eight FFT and six ICBT integrated sessions. In Study

1, compared to ICBT or GCBT, the two FFT conditions were more efficacious and cost-effective at posttreatment (French et al., 2008; Waldron et al., 2001). The relative effect sizes were 0.79 for FFT, 0.43 for IB-FFT, 0.29 for GCBT and 0.00 for ICBT. In Study 2, all four conditions were associated with significant reductions in substance use from baseline to each of the three follow-up assessments, as well as for binge drinking. The relative pre–post change effect sizes for substance use were FFT ($d = 0.79$), ICBT ($d = 0.61$), GCBT ($d = 0.25$), and IB-FFT ($d = 0.33$). The relatively poorer findings for IB-FFT may have been due to an inadequate "dose" of FFT. Some posttreatment relapse was observed for youth in all conditions, highlighting the need for continuing care to maintain treatment gains. In general, however, the findings are consistent with the independent investigations that provide evidence supporting FFT for SUDs (Stanton & Shadish, 1997; Slesnick & Prestopnik, 2009)

The third trial, a two-site study conducted in New Mexico and Oregon, compared the ICBT and IB-FFT interventions (cf. Waldron & Turner, 2008) for Hispanic and Anglo youth with SUDs. Both treatments showed significant reductions in marijuana use through the 18-month follow-up, with Hispanic youth responding significantly better to IB-FFT than to ICBT alone. Moreover, both conditions were efficacious in reducing HIV-risk behaviors in high-risk adolescents across ethnicities (Hops et al., 2011). In a more fine-grained examination of ethnicity outcomes using data from Studies 1 and 2, Flicker, Waldron, Turner, Brody, and Hops (2008) compared outcomes for families with an ethnically matched FFT therapist with those from "nonmatched" families. While all youth achieved significant drug use reductions, ethnically matched Hispanic adolescents demonstrated greater decreases relative to Hispanic adolescents with Anglo therapists. No matching effect was seen for Anglo youth. Hispanic therapists may be more attuned to core cultural Hispanic values and may be more able to tailor their interactions in accordance with these values. Taken together, the initial three studies suggested that FFT is a particularly good fit for Hispanic youth and families, especially when delivered by a therapist similar in ethnic background.

The data from the first three studies were also included in a meta-analysis (Waldron & Turner, 2008) that included 46 different treatment conditions for adolescents with SUDs. The combined sample evaluated several therapy models, including FFT, other family-centered interventions, GCBT, ICBT, and a minimal treatment condition. The effect size associated with reductions in drug use was significantly larger for FFT relative to the minimal treatment condition ($p \leq .007$). No differences were found between the minimal treatment condition and IB-FFT in which families received a smaller dose of FFT, suggesting that a full dose of FFT is necessary for optimal outcomes. Given some evidence of relapse in our prior research, we conducted a study to examine whether the beneficial effects of FFT can be made more durable by the addition of a transitional aftercare component (Waldron et al., 2013). After youth and families received a standard course of FFT, they were randomly assigned to one of three aftercare interventions: a home-based family systems intervention to further enhance family relationships and refine family skills, clinic-based GCBT, and a biweekly telephone conference call between the FFT therapist and the family. Consistent with prior studies, FFT was associated with a 24.6% reduction in marijuana use and maintained with additional improvements during the 12-month follow-up for both the home-based and telecounseling interventions. The findings suggest that substance use reductions from a course of FFT can be sustained through brief telephone counseling calls designed to help families consolidate treatment

TABLE 20.1. Study Characteristics and Treatment Outcomes: FFT for Substance Abuse and Co-Occurring Problems

Study/location	Reported sample characteristics	Treatment/comparison conditions	Follow-up period	Treatment outcomes
Friedman (1989); Stanton & Shaddish (1997)/Philadelphia, PA	Drug-abusing adolescents; $n = 135$; ages 14–21 ($M = 17.8$); 89% non-Hispanic white, 11% other	Random assignment: a. FFT, $n = 91$ b. Parenting group intervention, $n = 75$	> 15 months	*Substance use:* Significant pre–post reductions at all follow-up points, with greater reductions in FFT, compared to parenting intervention (see Stanton & Shaddish, 1997). *Risk/protective process:* FFT produced greater parental involvement, lower family dropout; improved psychiatric and family functioning in both conditions.
Waldron, Slesnick, Brody, Turner, & Peterson (2001); Waldron & Turner (2008); French et al. (2008)/Albuquerque, NM	Youth with SUDs, moderate–heavy use; $n = 120$; ages 13–18 ($M = 15.6$); 38% non-Hispanic white, 47% Hispanic, 8% Native American, 7% other	Random assignment: a. FFT b. Individual CBT (ICBT) c. Group CBT (GCBT) d. Integrated CBT+FFT (IB-FFT)	19 months	*Substance use:* FFT, GCBT, and IB-FFT all showed significant reductions in substance use from pre- to posttreatment or follow-up; FFT and IB-FFT superior to ICBT. *Delinquency:* FFT, GCBT, and IB-FFT all showed significant reductions in delinquent behavior from pre- to posttreatment or follow-up; FFT and IB-FFT superior to ICBT. *Risk/protective process:* Improvements in family functioning associated with substance use reductions in the FFT conditions, but not GCBT, supporting family improvement as a mechanism of change in FFT. *Cost analyses:* FFT and IB-FFT were more cost-effective than ICBT or GCBT at posttreatment due to lack of posttreatment effects for these conditions. GCBT was more cost-effective than the other treatment conditions at follow-up, albeit with delayed benefits.
Flicker, Waldron, & Turner, Brody, & Hops (2008)/Albuquerque, NM	Youth with SUDs, moderate–heavy use; $n = 88$; ages 13–19 ($M = 15.7$); 50% Anglo, 50% Hispanic	Random assignment: a. FFT b. IB-FFT	Post-treatment	*Substance use:* Significant pre–post reductions in substance use for all youth in FFT and IB-FFT. Hispanic youth with Hispanic therapists showed greater decreases in substance use compared to Hispanic youth with Anglo therapists. Ethnic match was not related to treatment outcome for Anglo youth.

Slesnick & Prestopnik (2009)/ Albuquerque, NM	Alcohol-abusing runaways; n = 119; ages 12–17 (*M* = 15.1); 29% Anglo, 44% Hispanic, 11% Native American, 5% African American, 11% other	Random assignment: a. Home-based ecological family therapy, *n* = 37 b. Office-based FFT, *n* = 40 c. Services as usual, *n* = 42	15 months	*Substance use:* Significant pre- to posttreatment reductions in alcohol and drug use for all three conditions.
Waldron, Ozechowski, Brody, Turner, & Hops (2017)/Albuquerque, NM	Youth with SUDs—alcohol and moderate–heavy drug use; *n* = 140; ages 13–19 (*M* = 16.3); 45% non-Hispanic white, 44% Hispanic, 7% Native American, 4% other	Random assignment: a. FFT b. ICBT c. GCBT d. IB-FFT	19 months	*Substance use:* All four conditions showed significant reductions in alcohol use, and FFT, ICBT, and GCBT (but not IB-FFT) showed significant reductions in marijuana and other illicit drug use from pre- to posttreatment.
Waldron, Hops, Turner, Brody, Davis, Finstad, & Barrera (2017); Hops et al. (2011)/ Albuquerque, NM; Salem and Portland, OR	Youth with SUDs, moderate–heavy use; *n* = 245; ages 13–19 (*M* = 15.8); 49% Anglo (non-Hispanic white), 51% Hispanic	Random assignment of Hispanic and Anglo youth to treatment conditions: a. ICBT b. IB-FFT	19 months	*Substance use:* Significant reductions in substance use for youth in both treatment conditions, with greater reductions in marijuana use for Hispanics in IB-FFT compared to ICBT. *HIV-risk behavior:* Significant pre- to posttreatment reductions in HIV-risk behaviors for high-risk youth in both treatment conditions, with greater reductions in ICBT than IB-FFT and greater reductions for high-risk Anglos compared to Hispanics.
Waldron, Ozechowski, Brody, Turner, Hops, & Scherer (2013)/ Albuquerque, NM	Youth with SUDs, moderate–heavy use; *n* = 74; ages 13–18 (*M* = 16.4); 40% non-Hispanic white, 54% Hispanic, 6% other	Random assignment to post-FFT aftercare condition: a. FFT + home aftercare (FFT-HA) b. FFT + group CBT aftercare (FFT-G) c. FFT + telephone aftercare (FFT-TA)	12 months	*Substance use:* FFT showed significant reductions in substance use, with changes maintained in FFT-HA and FFT-TA, but not FFT-G. FFT-HA was superior to FFT-G at 12-month follow-up. *Delinquency:* FFT showed significant reductions in delinquency, with reductions maintained in FFT-HA and FFT-TA, but not FFT-G. FFT-HA and FFT-TA were superior to FFT-G at 12-month follow-up. *Risk/protective process:* Improvements in depression, anxiety, withdrawn behavior, and family functioning found for all FFT conditions.

(continued)

TABLE 20.1. *(continued)*

Study/location	Reported sample characteristics	Treatment/comparison conditions	Follow-up period	Treatment outcomes
Rohde, Waldron, Turner, Brody, & Jorgensen (2014)/ Albuquerque, NM and Portland, OR	Dually diagnosed youth with depression and SUDs, moderate–heavy use; *n* = 170; ages 13–19 (*M* = 16.4); 54% non-Hispanic white, 32% Hispanic, 4% African American, 10% other	Random assignment to treatment sequence: a. FFT first, then Coping with Depression (CWD) group (FFT-CWD) b. CWD, then FFT (CWD-FFT) c. Integrated FFT+CWD	19 months	*Substance use:* Significant reductions in substance use, depression, and delinquency from pre- to posttreatment and follow-up for all conditions, with superior substance use outcomes for FFT for youth with less severe depression and better outcomes for severely depressed youth in the CWD-FFT sequence.
Waldron, Brody, Turner, Ozechowski, & Hops (2008)/ Albuquerque, NM	Youth with SUDs, moderate–heavy use; *n* = 140; ages 13–19 (*M* = 16.5); 40% non-Hispanic white, 41% Hispanic, 19% other	Random assignment to adaptive treatment sequence: a. Group CBT with FFT if needed (GT-FFT) b. Group CBT with individual CBT if needed (GT-IT)	6–11 months	*Substance use:* Preliminary findings show significant reductions in substance use from pre- to posttreatment and follow-up for treatment completers in both conditions, with superior retention and greater improvements in substance use across all youth in the GT-FFT condition.
Ozechowski, Waldron, Brody, & Hops (2016)/ Albuquerque, NM	Youth with SUD, moderate–heavy use; *n* = 120; ages 13–18 (*M* = 16.5); 40% non-Hispanic white, 41% Hispanic, 19% other	Random assignment to treatment conditions: a. FFT delivered via video teleconference (FFTV) b. Home-based FFT (FFTH) c. Services as usual (SAU)	9 months	*Substance use:* Preliminary findings show significant reductions in substance use from pre- to posttreatment and follow-up for both FFT conditions, with superior outcomes for both conditions compared to SAU. *Risk/protective process:* Improvements in depression, anxiety, withdrawn behavior, and family functioning found for all FFT conditions.
Waldron, Robbins, Turner, Hops, Ozechowski, & Brody (2017)/ Los Angeles, CA	Youth referred to community agencies for behavioral disturbances, at-risk for or diagnosed with SUDs; *n* = 42 therapists and 164 youth; ages 13–17	Random assignment to supervision: a. FFT, supervision as usual + observation-based feedback to therapists b. FFT, supervision as usual (no observation-based feedback)	12 months	*Preliminary findings:* Significant improvements in youth internalizing and externalizing behaviors from pre- to posttreatment (5 months). Analyses are ongoing.

gains. We also found support for FFT delivered via video teleconferencing for families located in rural areas (Ozechowski Waldron, Brody, & Hops, 2016). In this study, FFT was as effective as FFT delivered in family homes, with improvements in substance use, disruptive behaviors, depression, anxiety, and family functioning. Based on these two studies, telehealth strategies for the delivery of FFT appear promising.

Positive effects of FFT were also noted in a study of youth dually diagnosed with SUD and depression (Rohde, Waldron, Turner, Brody, & Jorgensen, 2014). Referred youth were randomly assigned to receive Adolescent Coping with Depression (CWD-A; Clarke, Lewinsohn & Hops, 1990) and FFT in one of three conditions: CWD followed by FFT, FFT followed by CWD, or integrated FFT/CWD. At the 6-month follow-up, large effect sizes for reductions in depression were noted for all three treatment conditions among youth with more severe depression (d = 1.45) and moderate effect sizes for less severely depressed youth (d = 0.53), with no differences between conditions. Reductions in substance use were greater for youth receiving FFT (d = 1.41) first, compared to CWD first (d = 0.56) or integrated treatment (d = 0.48). For the more severely depressed youth, however, offering CWD first, followed by FFT, was associated with greater substance use reductions. Taken together, the findings support the efficacy of FFT in reducing both depression and substance use for youth with co-occurring depressive disorders and SUDs, with evidence that severely depressed youth may benefit from CWD prior to FFT.

As a whole, the research conducted by independent investigators, with different populations of youth and families and in different settings, provide strong support for FFT in reducing substance use and related co-occurring problems such as delinquency, conduct problems, delinquency, and HIV-risk. By integrating booster sessions, the positive effects of FFT can be sustained. The flexible, menu-driven approach to behavior change allows FFT to be tailored for youth presenting with various patterns of drinking and drug use, as well as youth presenting with associated disruptive behaviors, trauma-related problems, and CODs. The ability to tailor FFT to the specific needs of youth and families has the potential to reduce the need for multiple treatment referrals for youth with co-occurring problems.

FUTURE DIRECTIONS

Based on the empirical support for FFT established through formal clinical trials, we have begun to focus on implementation research to guide the dissemination of FFT in community behavioral health settings. This emphasis is consistent with efforts and initiatives to promote the widespread implementation of evidence-based practices and the acceleration of implementation science across all sectors of mental and behavioral health care. Despite some progress, however, the science–practice gap remains a pressing problem. Research on implementation processes is needed to address the many barriers that impede efforts to translate FFT and other evidence-based treatments to practice settings.

One challenge in implementing evidence-based treatments in community settings is maintaining the high treatment fidelity that is needed to produce positive youth and family outcomes. Barnoski (2002) found that only half of the FFT therapists in a community effectiveness study, in which supervision was based on therapist self-report alone, were adherent to the FFT model. He estimated that competent delivery could reduce recidivism rates for felonies and violent crime by as much as 35%. We are currently conducting an FFT community effectiveness study that directly compares a supervision condition involving therapist self-report only to supervision in which supervisors listen to family sessions weekly and provide feedback and coaching based on direct observation of therapist behavior. This multisite study involves seven behavioral health programs and 42 therapists in California delivering FFT services to families of youth with disruptive behavior problems. The research is designed to address whether observation-based supervision produces superior outcomes in community settings. If so, then questions regarding the cost-effectiveness of observation-based supervision, given that this approach is more labor-intensive and could be difficult to sustain in community practice settings, will need to be addressed.

Fundamentally, implementation research is "how to make the right things to do easy things to do" (Clancy, 2011, p. 36). Research is urgently needed to inform the development of more efficient and effective dissemination strategies for FFT by examining organizational and therapist-level implementation processes and outcomes in the context of training therapists to deliver treatment services. As well, efforts are needed to identify and test feasible implementation procedures that can ensure the sustainability of evidence-based treatments. Implementation structures and technology-based strategies such as Web-facilitated fidelity monitoring and clinical guidance tools, could promote the self-regulation of fidelity within community behavioral health programs and reduce program dependence on developers and disseminators. Another research path to enhance implementation is the integration of "lean" service operations into the implementation process to identify and reduce inefficiencies associated with adopting an evidence-based practice (Hoffman et al., 2012). eLearning technologies could also reduce the cost barriers of dissemination, improve community access to training, and increase the scalability of evidence-based practices.

CONCLUDING COMMENTS

The FFT for SUDs intervention offers an integrative, systemic approach for addressing multiple co-occurring disorders and problem behaviors in adolescents. The specific problems of youth and their families can differ widely in pattern and severity, and understanding how best to treat the complex presentation of substance use, disruptive behaviors, depression, trauma-related problems, and other behaviors can be challenging for therapists in community behavioral health settings. A major benefit of the FFT for SUDs approach is that it offers a set of core intervention principles, a clear road map for intervening with families, along with the flexibility for well-trained therapists to work creatively and effectively to address a wide range of adolescent issues and dysfunctional relationship patterns. The breadth of problems that may be addressed with the model requires therapists to develop competence and confidence with a range of relational, as well as general and SUD-specific cognitive and behavioral intervention skills.

Despite the evidence supporting FFT for youth with SUDs and CODs, however, the vast majority of substance-abusing youth do not receive an evidence-based treatment. Transporting effective interventions to practice settings has met with limited success. Broad research goals moving forward should include establishing how to more efficiently implement and sustain FFT and other evidence-based treatments, and how to enhance large-scale replication of such treatments to expand adolescents' access to effective services and narrow the research–practice gap.

ACKNOWLEDGMENTS

This research was supported in part by grants from the National Institute on Drug Abuse (Nos. R01DA11955; R01DA13350; R01DA13354; R01DA029406; R01DA021357; R01DA15762) and the National Institute on Alcohol Abuse and Alcoholism (No. R01 AA12183).

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PART III

IMPLEMENTATION AND DISSEMINATION

Extending Treatments to New Populations and New Settings

CHAPTER 21

Evidence-Based Psychotherapies with Ethnic Minority Children and Adolescents

Stanley J. Huey, Jr., and Antonio J. Polo

Ethnic minorities[1] and immigrants make up a large and growing percentage of youth in many Western nations (Manilla, Messing, van den Broek, & Vidra, 2010; U.S. Census Bureau, 2014), and the mental health needs of ethnic minority youth are expanding rapidly (Molcho et al., 2010; Costello, He, Sampson, Kessler, & Merikangas, 2014). Despite this need, enormous racial disparities in mental health care exist for youth (Alegría, Vallas, & Pumariega, 2010; Flores & the Committee on Pediatric Research, 2010; Garland, Lau, McCabe, Hough, & Landsverk, 2005; Kataoka, Zhang, & Wells, 2002). Yet our understanding of optimal ways to engage and treat ethnic minority youth with behavioral and emotional problems is limited.

In recent years, scholars have debated whether evidence-based psychotherapies (EBPs) for mental health problems are effective for ethnic minority youth and adults (Hall, 2001; Huey & Polo, 2008; Huey, Tilley, Jones, & Smith, 2014). Two broad perspectives are dominant, representing opposite ends of a continuum. The ethnic invariance perspective argues that conventional EBPs are equally effective across cultural groups because the principles underlying psychotherapeutic change are essentially universal. In contrast, the ethnic-specific perspective argues that EBPs are ineffective or less effective for ethnic minorities because they were not developed or evaluated with ethnic minorities, and because they tend to ignore cultural considerations that are critical to treating culturally diverse populations.

In this chapter, we shed some light on this debate by summarizing what we know about treatment more generally, and EBPs more specifically, for ethnic minority youth with mental health problems. We draw primarily from youth-focused treatment outcome reviews and meta-analyses published over the past decade. Although we focus mostly on ethnic diversity within the United States, we also include research on diverse populations in other Western nations.

EFFICACIOUS PSYCHOTHERAPIES FOR ETHNIC MINORITY YOUTH

First, we briefly summarize efficacious psychotherapies for ethnic minority youth. We began with a list of minority-focused EBPs published in our earlier review (Huey & Polo, 2008; 2010), then expanded our search to include additional randomized trials published from 2007 through 2014. Interventions were classified as *well established, probably efficacious,* and *possibly efficacious* psychotherapies for ethnic minority youth based on criteria summarized by Huey and Polo (2008). Well-established therapies require support from two or more randomized controlled trials (RCTs) by independent teams comparing treatment to placebo; probably efficacious therapies require one placebo-controlled trial (or two trials comparing treatment to no treatment); and possibly efficacious therapies require one study showing treatment superiority to no treatment. In addition, studies had to include (1) a sample that was at least 75% ethnic minority, (2) analyses showing that therapy was effective for ethnic minority participants, or (3) analyses showing that ethnicity did not moderate outcomes or that therapy was effective for minority participants regardless.

Only one treatment, motivational interviewing, was considered *well established* for ethnic minority youth. In addition, 22 treatments were considered *probably efficacious,* and 22 as *possibly efficacious.* In Table 21.1, the interventions listed in regular font were identified as EBPs in the 2008 review (Huey & Polo, 2008), and those in bold are new ones identified from our recent search. Efficacious psychotherapies were found for ethnic minority youth with a diverse array of psychosocial problems, including attention-deficit/hyperactivity disorder (ADHD), anxiety-related problems, conduct problems, depression, suicidal behavior, trauma-related problems, and mixed/comorbid problems (i.e., no single problem type predominated). Psychotherapies for conduct problems and substance use problems accounted for the majority (56%) of interventions listed in Table 21.1.

The majority evaluated group- or family-based interventions, while only a few used individual therapy. Cognitive-behavioral psychotherapies (i.e., those derived from social learning principles and cognitive theories of psychopathology) predominated, accounting for more than 53% of EBPs listed. However, treatments derived from other treatment paradigms were also well represented, including interpersonal psychotherapy, family systems therapies (e.g., brief strategic family therapy), motivational interviewing, and art/play therapies.

The evidence base is strongest for African Americans and Latinos, the two largest ethnic minority groups in the United States. In contrast, evidence supporting the use of psychosocial interventions with other non-European American youth in the United States is extremely rare. Only one EBP was found for Asian American youth (Lau, Fung, Ho, & Liu, 2011), one for multiracial Hawaiian youth (Rowland et al., 2005), and *none* for Native American youth. Indeed, of the three trials that focused on symptomatic Native American youth, none were effective at reducing alcohol use, depressive symptomatology, or smoking (Bowen, Henderson, Harvill, & Buchwald, 2012; Carpenter, Lyons, & Miller, 1985; Listug-Lunde, Vogeltanz-Holm, & Collins, 2013) in this high-risk population.

In terms of trends, one interesting thing to note from Table 21.1 is the large number of EBPs that have emerged for Latino youth over the past 7 years, particularly for those with substance use problems. Another positive trend is the emergence

TABLE 21.1. Well-Established, Probably Efficacious, and Possibly Efficacious Psychotherapies for Ethnic Minority Youth with Behavioral/Emotional Problems

Problem domain	Youth ethnicity	Evidence-based psychotherapies
ADHD	African American and Hispanic/Latino	Behavioral treatment + stimulant medication
	Hispanic/Latino	**PCIT**
Anxiety-related problems	African American	AMT; group CBT; modified AMT; study skills training
	Hispanic/Latino	Group CBT
Conduct problems	African American	Anger management group training; assertive training; attribution training; behavioral contracting; cognitive restructuring; coping power; MST; response cost; social relations training
	Asian American	**The Incredible Years**
	Hispanic/Latino	BSFT; CCPT; **child–parent relationship therapy**; **familias unidas**; **PCIT**
	Mixed/other ethnicity	**CCPT**; rational emotive education; structured problem-solving
Depression	African American	**CBT-based quality improvement intervention**
	Hispanic/Latino	CBT; **group CBT**; interpersonal psychotherapy
Substance use problems	African American	**BSFT**; MST
	Hispanic/Latino	**BSFT**; **ecologically based family therapy**; **MI**; **structural ecosystems therapy**
	Mixed/other ethnicity	**MI**; multidimensional family therapy
Suicidal behavior	African American	MST
Trauma-related problems	African American	Fostering Individualized Assistance Program; **prolonged exposure**; resilient peer treatment; trauma-focused CBT
	Hispanic/Latino	School-based group CBT
	Mixed/other ethnicity	**Psychodrama**; **trauma-focused expressive art therapy**
Mixed/comorbid problems	African American	Reaching educators, children, and parents
	Multiracial Hawaiian	MST

Note. Updated from Huey and Polo (2010). Interventions shown in regular font were identified as EBTs in Huey and Polo (2008); those in **bold** font are those identified as EBTs in our most recent search. ADHD, attention-deficit/hyperactivity disorder; AMT, anxiety management training; BSFT, brief strategic family therapy; CBT, cognitive-behavioral treatment; CCPT, child-centered play therapy; MI, motivational interviewing; MST, multisystemic therapy; PCIT, parent–child interaction therapy.

of EBPs for ethnic minority youth outside the United States. For example, several trials have assessed cognitive-behavioral treatments for diverse youth with behavioral problems in the Netherlands (Leijten, Raaijmakers, de Castro, van den Ban, & Matthys, 2015; Liber, de Boo, Huizenga, & Prins, 2013). In both trials, moderator tests showed that the active treatments were equally effective at reducing disruptive behavior for ethnic Moroccan/Turkish and ethnic Danish youth. Additional trials support the use of Triple P for disruptive aboriginal youth in Australia (Turner, Richards, & Sanders, 2007) and group cognitive-behavioral therapy (CBT) for depressed Māori youth in New Zealand (Woods & Jose, 2011).

In terms of the breadth of evidence supporting EBPs for ethnic minority youth, several other reviews have reached similar conclusions. For example, in a review of interventions for Latino youth, Bernal, Saez-Santiago, and Galloza-Carreno (2009) identified 17 EBPs for externalizing, internalizing, and mixed/other problems. Similarly, Ho, McCabe, Yeh, and Lau (2010) identified 16 therapies as *well-established, probably efficacious,* or *possibly efficacious* for ethnic minority youth with (or at risk for) conduct problems. Thus, the evidence strongly suggests that a number of interventions are available for treating ethnic minority youth, in the United States and elsewhere, with a broad array of mental health problems.

MAGNITUDE OF TREATMENT EFFECTS

As others have noted (e.g., Hinshaw, 2002), treatments may show statistically significant effects yet not be clinically impactful. To address this issue, we present results from several meta-analyses evaluating the magnitude of treatment effects for ethnic minority youth. With treatment outcome meta-analysis, effect size coefficients of 0.20 or lower represent "small" effects, coefficients of 0.50 represent "medium" effects, and coefficients of 0.80 or higher represent "large" effects (Cohen, 1988). Positive effects mean that treated youth show more favorable outcomes than comparison youth.

The Huey and Polo (2008) meta-analysis assessed EBP effects for ethnic minority youth with behavioral and emotional problems, with findings from 25 RCTs comparing active treatments to controls. Results showed a medium effect size of $d = 0.44$, which indicates that 67% of treated participants were better off at posttreatment when compared to control youth. Moreover, therapy effects were generally maintained at follow-up. Although treatment effects were significantly larger when treatment was compared to no treatment or placebo (vs. treatment as usual[TAU]), problem type (externalizing vs. internalizing), problem severity (clinically significant vs. not significant; DSM diagnosis vs. no diagnosis), and youth ethnicity (African American vs. Latino vs. mixed/other) did not affect outcomes.

One limitation, however, is that the Huey and Polo (2008) meta-analysis deliberately excluded ineffective treatments; thus, the magnitude of treatment effects was likely inflated. Indeed, when we reviewed six additional prevention and treatment meta-analyses focused on ethnic minority youth (Gillespie & Huey, 2015; Hodge, Jackson, & Vaughn, 2010a, 2010b; Hodge et al., 2012; Jackson, Hodge, & Vaughn, 2010; Yuen, 2004), we found effect sizes ranging from a low of 0.12 to a high of 0.39 (see Figure 21.1), which were all significant effects but smaller than that found for

Huey and Polo (2008). However, most of these meta-analyses are limited as well, in that they included only culturally adapted treatments, targeted diverse behavioral health outcomes (e.g., dietary behavior, sexual behavior, substance use), evaluated preventive and indicated interventions, or included a mix of randomized and nonrandomized trials.

Thus, notwithstanding the qualifications noted earlier, the limited evidence suggests that interventions for ethnic minority youth generally show small to medium treatment effects. Moreover, positive effects are found for diverse ethnic minority youth with a broad array of mental health problems. These results are generally consistent with findings from other published meta-analyses assessing interventions effects for youth more broadly (e.g., Weisz, Jensen-Doss, & Hawley, 2006; Weisz, McCarty, & Valeri, 2006).

ETHNICITY-AS-MODERATOR EFFECTS

Another important question for investigators is whether therapy effects vary by youth ethnicity. In considering this issue, Huey and Polo (2008) summarized 13 randomized trials that assessed youth ethnicity as a moderator of treatment effects. Eight of the 13 trials showed no significant ethnicity-as-moderator effects. While the remaining trials did show significant moderator effects, two showed effects favoring European American youth, whereas three showed effects favoring ethnic minorities (Huey & Polo, 2008).

Recent meta-analyses reveal similar trends with regard to ethnicity effects in clinical trials. Table 21.2 briefly summarizes results from 18 youth-focused meta-analyses that test whether treatment effects vary by youth ethnicity. The meta-analyses focused on treatment for ADHD (Fabiano et al., 2009), antisocial behavior

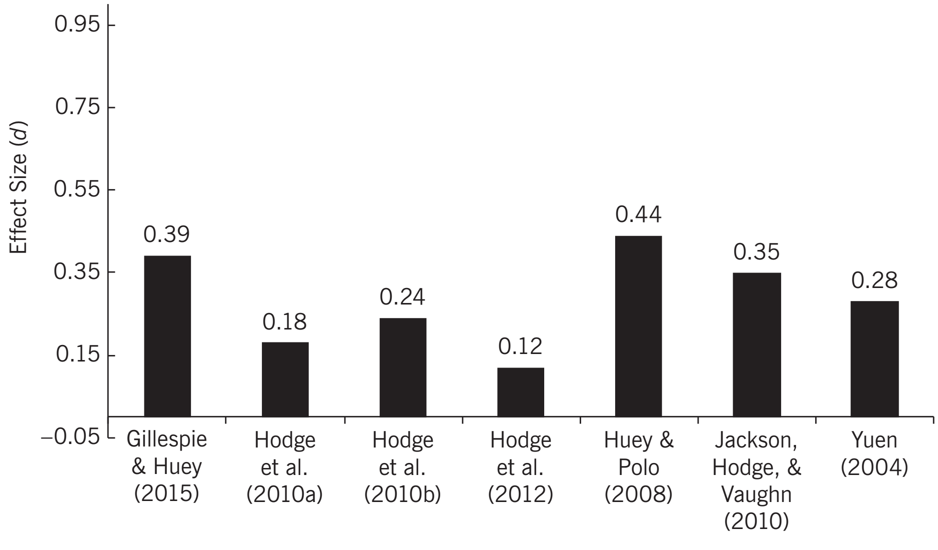

FIGURE 21.1. Meta-analyses evaluating effects of interventions for ethnic-minority youth.

TABLE 21.2. Summary of 18 Meta-Analyses Evaluating Youth Ethnicity Effects on Treatment Outcomes

Significant ethnicity effects	Null effects
James et al. (2013) (ethnic-minority status associated with larger effects)	Baldwin et al. (2012)
Lin (2011) (ethnic-minority status associated with larger effects)	Comer et al. (2013)
van Stam et al. (2014) (European/ European American background associated with larger effects)	DeSwart et al. (2012)
Wilson & Hoge (2013) (European/ European American background associated with larger effects)	Fabiano et al. (2009)
	Ghafoori (2010)
	Lipsey (2009)
	McCart et al. (2012)
	Sawyer (2012)
	Silverman et al. (2008)
	Sussman et al. (2006)
	Trask et al. (2011)
	Weisz, Jenson-Doss, & Hawley (2006)
	Whipple (2007)
	Wilson et al. (2003)

(James, Stams, Asscher, De Roo, & van der Laan, 2013; Lipsey, 2009; McCart, Priester, Davies, & Azen, 2012; Sawyer, 2012; van Stam et al., 2014; Wilson & Hoge, 2013; Wilson, Lipsey, Soydan, 2003), anxiety disorders (Silverman, Pina, & Viswesvaran, 2008), externalizing behaviors (Comer, Chow, Chan, Cooper-Vince, & Wilson, 2013; Ghafoori, 2001; Lin, 2011; Whipple, 2007), smoking (Sussman, Sun & Dent, 2006), mixed drug use and delinquent behavior (Baldwin, Christian, Berkelijon, Shadish, & Bean, 2012), diverse psychosocial problems in real-world treatment settings (Weisz, Jensen-Doss, et al., 2006), problem behavior in institutional care (DeSwart et al., 2012), and psychosocial sequelae to sexual abuse (Trask, Walsh, & DiLillo, 2011). The majority found no significant ethnic differences in treatment effects. When ethnic differences were found, effects favored ethnic minority youth (James et al., 2013; Lin, 2011) just as often as they favored European American youth (van Stam et al., 2014; Wilson & Hoge, 2013).

Overall, results from individual trials and meta-analyses show few ethnic differences in youth treatment outcomes. Moreover, when ethnic differences do emerge, studies show similar outcomes for youth of ethnic minority and European backgrounds. These results generally support an ethnic invariance perspective.

As noted in greater detail elsewhere (Huey & Jones, 2013; Huey & Polo, 2008; Huey & Polo, 2010), four methodological limitations qualify what conclusions can be drawn concerning ethnic disparities in treatment effects. First, because moderator effects are more difficult to detect than main effects, the preponderance of null findings may mostly result from low power (e.g., because of small sample sizes). For example, using integrative data analysis techniques, Greenbaum et al. (2015) pooled data from five randomized trials of multidimensional family therapy (MDFT) and found previously undetected ethnicity-as-moderator effects. For African Americans and European Americans, MDFT was significantly more effective than control at reducing drug use; however, for Latino adolescents, there were no significant treatment effects. Second, even when treatment moderator effects are significant, appropriate interpretation of such effects can be challenging, particularly when control groups are robust (e.g., placebo, TAU). Third, in ethnic comparison analyses, most studies combine diverse non-European American youth into a generic "ethnic minority" group, which improperly assumes homogeneity across minority groups and potentially masks outcome disparities that might exist for some groups. Finally, because a large percentage of minority-focused treatments are culturally tailored (Huey et al., 2014), the therapeutic experience of ethnic minority youth may be enhanced in these trials, which may minimize differential outcomes by ethnicity. Given these limitations, caution should be exercised when concluding that psychotherapies are equally beneficial for ethnic minority and European American youth.

CULTURAL TAILORING EFFECTS

Demonstrating that evidence-based psychotherapies can benefit ethnic minority youth is a positive development in the treatment outcome literature. However, documenting that "standard" treatments work for ethnically diverse youth and families does not mean that it is unwarranted to evaluate whether tailoring or adapting these treatments also produces beneficial effects. That would be like saying that because CBT for anxiety disorders has been found to be efficacious, we should not pursue examining whether mindfulness interventions are also beneficial.

One view in the health disparities field is that standard treatments ought to be adapted to maximize outcomes for ethnic minority youth and adults (Fuertes & Gretchen, 2001; Sue, Zane, Hall, & Berger, 2009). Indeed, results from two meta-analyses show that the majority of published trials with predominantly ethnic minority youth include some form of culturally tailored treatment (Gillespie & Huey, 2015; Huey & Polo, 2008), suggesting that many clinical investigators share this assumption. These adaptations were very diverse and involved using cultural agents during the treatment development and refinement process, ethnic/linguistic match between provider and client, adapting treatment manuals for cultural sensitivity, and integrating culture-related content into treatment sessions, among other strategies (Huey & Polo, 2008).

However, only a handful of studies have rigorously assessed whether cultural adaptations actually improve youth outcomes. Table 21.3 summarizes five trials that include two basic elements that allow for "strong inference" with regard to cultural tailoring effects: (1) comparison of a culturally tailored versus generic intervention in an RCT, and (2) use of tailored and generic treatments that differ only in the inclusion or absence of key cultural features (Huey et al., 2014). Two trials compared generic and culturally tailored treatment to a no-treatment, placebo, or TAU control. Grodnitzky (1993) recruited Puerto Rican and Anglo youth with "maladaptive behavior" and assigned them to hero modeling (which utilized biographies of Puerto Rican historical figures), non-hero modeling (Puerto Rican role models were excluded), or no-treatment control. No posttreatment effects on maladaptive behavior were found for either ethnic group.

TABLE 21.3. Summary of Randomized Trials Comparing Generic and Culturally Tailored Treatments for Youth Mental Health Problems

Study	Participants	Treatment	Findings
Burrow-Sanchez & Wrona (2012)	35 Latino adolescents (*M* = 15.49 years) with substance use disorders	Randomly assigned to standard CBT (S-CBT) or culturally accommodated CBT (A-CBT)	No group differences in substance use outcomes over 3-month follow-up.
Burrow-Sanchez et al. (2015)	70 Latino adolescents (*M* = 15.2 years) with substance use disorders	Randomly assigned to S-CBT or A-CBT	No group differences in substance use outcomes over 3-month follow-up.
Grodnitzky (1993)	35 Puerto Rican and 29 Anglo youth showing "maladaptive behaviors"	Randomly assigned to Hero Modeling (utilizing Puerto Rican figures), Non-Hero Modeling (Puerto Rican role models excluded), or no-treatment control	For Puerto Rican and Anglo youth, no group differences in maladaptive behavior at posttreatment.
McCabe & Yeh (2009); McCabe et al. (2012)	58 Mexican American youth with behavioral problems and their parents	Randomly assigned to standard PCIT, *Guiando a Niños Activos* (GANA; a culturally modified version of PCIT), or TAU	At posttreatment and follow-up, GANA was superior to TAU for externalizing and ADHD symptoms; at posttreatment, but not follow-up, PCIT was superior to TAU; GANA and PCIT did not differ at either time period.
Szapocznik et al. (1986)	31 Cuban American youth (*M* = 15.1 years) with conduct/maladjustment problems and their families	Randomly assigned to structural family therapy (SFT) or bicultural effectiveness training (BET; a culturally enhanced version of SFT)	No group differences at post-treatment across four behavior problem and five psychiatric problem scales.[a]

[a] Szapocznik et al. (1986) did report a significant treatment effect for "impulse-control disturbance," but appeared to dismiss the finding as being due primarily to baseline differences between SFT and BET.

McCabe and colleagues (McCabe & Yeh, 2009; McCabe, Yeh, Lau, & Argote, 2012) assigned externalizing Mexican American youth and their parents to parent–child interaction therapy (PCIT), *guiando a niños activos* (GANA; a culturally modified version of PCIT), or treatment as usual (TAU). At posttreatment, both GANA and PCIT led to greater reductions in externalizing behavior than TAU, but only GANA led to greater reductions in ADHD symptoms than TAU (McCabe & Yeh, 2009). At follow-up, GANA remained superior to TAU for externalizing and ADHD symptoms, but there were no significant effects for PCIT (McCabe et al., 2012). No significant differences were found between GANA and PCIT for externalizing problems or ADHD symptoms at either time period.

Three additional trials compared culturally tailored and generic treatments but did not include a control group. In two randomized trials, Burrow-Sanchez and colleagues (Burrow-Sanchez, Minami, & Hopps, 2015; Burrow-Sanchez & Wrona,

2012) evaluated the effects of standard versus culturally accommodated group CBT for Latino juvenile offenders with substance use problems. No differential treatment effects were found for either study. Szapocznik et al. (1986) compared structural family therapy (SFT) to bicultural effectiveness training (BET; a version of SFT focused on mitigating intergenerational cultural conflicts) for Cuban American youth with conduct/maladjustment problems and their families. Again, no treatment effects were found.

The evidence across these five trials suggests that culturally tailored interventions do not outperform other, equivalent, standard evidence-based interventions for ethnic minority youth. However, with only 15–35 youth per condition, all of these studies probably lacked adequate power to detect significant cultural tailoring effects. As we note elsewhere (Huey & Polo, 2008), at least 65 participants per group would be needed for adequate power if moderate cultural tailoring effects (e.g., $d = 0.50$) were anticipated. Thus, results based on small sample studies such as these must be interpreted with caution.

Another approach involves using meta-analysis to determine how cultural tailoring affects youth outcomes. Three recent meta-analyses are relevant here and, curiously, each reaches different conclusions about the importance of cultural tailoring. The meta-analysis by Yuen (2004) evaluated whether cultural tailoring was associated with differential outcomes for youth participating in primary prevention, secondary prevention, and positive youth development interventions. Surprisingly, Yuen found that inclusion of cultural values and degree of cultural tailoring were associated with *poorer* treatment outcomes, suggesting that tailoring might attenuate treatment effects. In their meta-analysis, Huey and Polo (2008) tested whether cultural tailoring enhanced treatment outcomes within the context of minority-focused youth EBPs. Overall, they found no outcome differences between "standard" versus "culture-responsive" EBPs for ethnic minority youth. Finally, two meta-analyses showed that culturally adapted therapies might be particularly beneficial for ethnic minority youth. Gillespie and Huey (2015) assessed therapy effects for ethnic minority youth with conduct problems and assessed whether cultural adaptation moderated treatment effects. They found that culturally adapted interventions ($d = 0.56$) for conduct problems were indeed more effective than "generic" interventions ($d = 0.28$). Similarly, a meta-analysis by Benish, Quintana, and Wampold (2011) compared culturally adapted and unadapted therapies for ethnic minorities of diverse ages. Overall, culturally adapted treatments were more effective than unadapted treatments, and participant age did not moderate outcomes.

Thus, given these diverse outcomes, one cannot say definitely whether cultural tailoring is necessary to obtain superior treatment effects for ethnic minority youth. Some scholars have argued that cultural tailoring works best when it reduces client reactance and maintains fidelity to core treatment principles, but can be problematic when it reduces treatment dosage or eliminates core treatment content (Huey et al., 2014; Kumpher, Alvarado, Smith, & Bellamy, 2002). However, research addressing the parameters of cultural tailoring effects is nearly nonexistent. Ultimately, more experimental research is necessary to discern the conditions under which tailoring is effective for ethnic minority youth.

ENGAGING ETHNIC MINORITY YOUTH AND THEIR FAMILIES IN TREATMENT

As a final issue, we discuss approaches aimed at increasing participation and engagement of ethnic minority families in mental health treatment. A large proportion of ethnic minority youth do not receive the mental health services they need (Kataoka, Zhang, & Wells, 2002) and have lower use of inpatient and outpatient mental health services than youth of European American backgrounds (Garland, Lau, McCabe, Hough, & Landsverk, 2005). When they do receive treatment, ethnic minority youth are more likely to terminate prematurely (Miller, Southam-Gerow, & Allin, 2008), attend fewer sessions (Bui & Takeuchi, 1992), and show less clinical improvement (Weersing & Weisz, 2002) than European American youth. Even when receiving EBPs, dropout rates for African American and other ethnic minority youth are often higher than for European American youth (e.g., Kazdin & Whitley, 2003). A recent meta-analysis of 48 studies focusing on predictors of treatment dropout of youth receiving mental health outpatient treatment (de Haan, Boon, de Jong, Hoeve, & Vermeiren, 2013) found that ethnic minority youth were more likely to drop out across both efficacy and effectiveness study designs. Other factors that disproportionately impact ethnic minority families are also often associated with dropout from treatment. These include lower socioeconomic status, single-parent household, unemployment, Medicaid coverage/lack of insurance, and being placed on a wait list rather than receiving immediate treatment (Austin & Wagner, 2010; Muzik et al., 2014; Warnick, Gonzalez, Weersing, Scahill, & Woolston, 2012; de Haan et al., 2013). In addition to focusing on symptom reduction and functional improvement, research is needed on how interventions can address structural barriers that may determine whether ethnic minority families enroll and are retained when offered EBPs specifically and mental health services in general (Polo, Alegria, & Sirkin, 2012).

A number of strategies have been used to increase participation in treatment and reduce unilateral termination, including several that have focused on ethnic minority populations. Early research in this area with poor, ethnic minority adults and families successfully focused on single prompts (e.g., phone calls and letters) immediately prior to a scheduled session (e.g., Hochstadt & Trybula, 1980; Planos & Glenwick, 1986). Subsequent efforts (McKay, Stoewe, McCadam, & Gonzales, 1998) evaluated the effects of a 30-minute telephone call prior to the intake appointment and an in-person engagement interview. In an RCT, families who received the phone call alone or the combined call and interview were more likely to show up to their scheduled appointments. However, relative to those who received the usual intake procedures, only those in the combined call/interview condition showed improved attendance in subsequent scheduled appointments.

Szapocznik and colleagues (1988) developed an intervention called strategic structural systems engagement (SSSE), which uses family therapy techniques (e.g., joining and restructuring) to reduce resistance and increase the initial engagement of adolescents and their families in treatment. In the first randomized trial of this intervention, Latino families who had an adolescent involved in substance use and received SSSE were significantly more likely to attend the intake and less likely to drop out of treatment than those who received a control condition simulating usual care procedures (Szapocznik et al., 1988). A second trial of SSSE, also involving an exclusively Latino sample (Santisteban et al., 1996), confirmed its efficacy in increasing engagement, as measured both by increased rate of attendance during the intake interview and subsequent therapy sessions.

More research is needed to advance the understanding of ethnic differences beyond attendance and dropout. For example, a recent review of *parent* engagement and participation in treatment found that, despite the well-established differences in engagement across ethnic groups, only about 50% of the studies report on the ethnic background of their participants, and those that do predominately include European American samples (Haine-Schlagel & Walsh, 2015). Similarly, a meta-analysis of engagement strategies among adolescents and early adults reported the ethnic composition of the eligible studies but did not examine ethnicity as a potential moderator of the effects found (Kim, Munson, & McKay, 2012).

Antonio J. Polo has been involved in the adaptation of a brief intervention inspired by the work of a community nonprofit organization from Lawrence, Massachusetts (see *www.rightquestion.org*). They adapted this educational strategy, called the Question Formulation Technique, to increase the level of participation in treatment-related decisions of individuals receiving services and to reduce their likelihood of dropping out of care. This strategy has been successfully implemented with adult outpatients from ethnic minority backgrounds, particularly immigrant Latinos (Alegría et al., 2008, 2014). The intervention teaches participants to identify important decisions that are relevant to their care and to generate carefully constructed questions directed to their providers. Through this process, clients shift their role from passive recipients of information to empowered partners invested in making collaborative decisions and shaping their course of treatment. Two trials have documented the positive impact of this intervention. In a quasi-experimental design, the authors found that, relative to those receiving usual care, participants reported significantly higher activation in their interactions with their mental health providers, higher attendance at their scheduled appointments, and lower dropout rates (Alegría et al., 2008). The latest version of the intervention, called DECIDE, was evaluated in an RCT that included 13 outpatient community mental health clinics across five states and one U.S. territory with adult participants, most of whom (85%) were of ethnic-minority backgrounds (Alegría et al., 2014). Compared to usual care, those enrolled in the DECIDE sessions were found to have greater engagement with their providers (e.g., asked more questions) and greater self-management. The intervention, however, was not associated with increased retention in care. A current RCT is examining the impact of DECIDE, combined with an intervention to help therapists be more receptive to these clients when they bring up questions and express interest in collaboratively making key decisions related to their mental health care. To date, interventions such as DECIDE, which aim to increase empowerment and retention, have only been evaluated with ethnic-minority adults. These interventions, when successfully applied to youth and parents with ethnic-minority backgrounds, could help reduce and eliminate the well-documented service use disparities.

In summary, although strategies exist to increase the participation and retention of ethnic-minority youth and their families, the vast majority have focused on the initial engagement of clients and devote less effort to reducing dropout postintake. These interventions are not yet available in manual form, which would facilitate dissemination in community settings or integration into existing EBP protocols. Also, engagement strategies for Asian American and Native American youth and families were not found, and the vast majority of the work has been done with African Americans and Latinos. Interestingly, one strength of available engagement strategies is that, in contrast to many EBPs, they have been developed and tested in community settings and compared to usual care procedures. Experimental designs evaluating the impact of EBPs, with or without engagement components, are much needed, including those conducted in laboratory and naturalistic settings.

FUTURE DIRECTIONS

Over the past 2 decades, there has been a significant increase in the documented participation of ethnic-minority youth and families in psychotherapy research. As a result, evidence regarding the effects of specific interventions across a number of mental health problems has been accumulating. Although there is reason for optimism regarding positive impact of these standardized psychotherapies with ethnically and culturally diverse populations, a few critical issues that remain unresolved temper our enthusiasm.

As noted earlier, needed are studies specifically designed to examine ethnicity as a moderator, which requires that investigators recruit and enroll diverse samples large enough to evaluate this question with sufficient power. Carefully designed studies could additionally shed light on some of the inconclusive findings regarding the therapeutic effects of cultural tailoring and other adaptations. Several other broader issues are also outlined below.

The first issue is the limited reporting of demographic characteristics in RCTs, many of which have been notoriously absent from published reports. For example, Weisz, Jensen-Doss, and Hawley (2005) found that almost 60% of their identified treatment studies of youth psychotherapy (*N* = 236) did not report the ethnic composition of their samples. Another troubling finding in that review was that almost three out of four trials did not report on the socioeconomic characteristics of their participants. As a result, the studies that reported on ethnicity or that focused on documenting outcomes across ethnic groups represent a relatively small fraction of all the clinical trials that have been conducted on youth. There is no doubt that this has limited the ability to examine treatment effects across ethnic and socioeconomically diverse groups.

A second issue is that of representation. It is simply not possible to make conclusive statements regarding the effects of psychotherapy for groups such as Asian American and Native American children and adolescents, as there are hardly any trials conducted on these populations. Similarly, because socioeconomic status is rarely reported, it is difficult to estimate the impact of psychotherapies for children and adolescents with *both* low income and ethnic-minority backgrounds. In a recent meta-analysis focusing specifically on socioemotional interventions conducted with low-income youth in urban school settings, an overall effect size was found at posttreatment of 0.08 across 23 studies, most of which were RCTs (Farahmand, Grant, Polo, & Duffy, 2011). In the United States, a large and disproportionate number of ethnic-minority youth live in poverty. Meta-analyses of psychotherapy outcomes have not documented the effects of EBPs specifically for these youth, and the evidence thus far is not very promising.

Future research should also focus on a related representation concern. Evidence is needed to determine whether rates of *participation* in psychotherapy trials vary by key demographic characteristics, including income, ethnicity, nativity, and language. Studies are needed to document that specific groups can be successfully recruited and that they are not being systematically excluded from treatment outcome research. These include immigrants, linguistic minorities, and low-income populations with limited literacy or educational attainment.

Finally, as noted earlier, disparities in utilization of mental health services are present and significant. Ethnic-minority youth do not have equal access, retention, and participation rates compared to youth from European American backgrounds. Future research focused on developing strategies that eliminate these disparities is needed. This research should address ethnic disparities in lab-based EBTs, as well as usual care settings.

CONCLUDING COMMENTS

The impact of psychotherapy on ethnic-minority clients has been of interest dating back to the pioneering work by Smith and Glass (1977), who were among the first to systematically quantify treatment effects across studies. The search continues almost 40 years later. Although most psychotherapy trials with children and adolescents have been conducted with European Americans, there is now greater representation of ethnic and geographically diverse youth. The research questions have also become more sophisticated, addressing not just whether therapy works for diverse youth but under what circumstances (e.g., culturally tailored psychotherapies). The implementation of evidence-based psychotherapies in real-world settings warrants significantly more attention to the contexts under which treatments are delivered, and the client characteristics that may shape or determine their success, including, but not limited to, ethnicity, socioeconomic status, nativity, and cultural affiliation. Nonetheless, the evidence in this chapter suggests that youth of ethnic-minority backgrounds can benefit from these interventions.

ACKNOWLEDGMENT

The work described in this chapter has been funded by a grant from the Annie E. Casey Foundation (Grant No. 212.0008) to Antonio J. Polo.

NOTE

1. In the United States and other Western nations, the term “ethnic minority” refers broadly to youth of non-European backgrounds. We acknowledge the limitations of this term given that historical “minorities” are actual numerical majorities in some Western regions. We also recognize that our use of specific ethnoracial categories (e.g., African

American, Asian American, Latino) might implicitly minimize the enormous heterogeneity that exists within groups. However, we retain these terms, in part, to be consistent with other literature.

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CHAPTER 22

Crossing National, Cultural, and Language Barriers

Implementing and Testing Evidence-Based Practices in Norway

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OVERVIEW OF THE NORWEGIAN CENTER FOR CHILD BEHAVIORAL DEVELOPMENT

During the 1990s, public attention in Norway focused on the lack of public response to adolescent violence and the negative outcomes of publicly funded out-of-home treatments. The media pressed for political action and in 1997, on a request from the Ministry of Children, Equality and Social Inclusion, in collaboration with the Ministry of Health and Care Services, the Norwegian Research Council (NRC) hosted an international conference with several high-profile scholars. They recommended that structured, evidence- and home- and-community based interventions should be the first priority in the treatment of conduct problems among children and youth. A group of experts appointed by the NRC critically examined several candidate programs and recommended that some of these should be systematically implemented and tested in field trials. Following the conference, a project was established at the University of Oslo, with the aim of increasing competence levels and treatment capacity of the public service system, and decreasing placements out of home. Following visits to relevant U.S. program sites by Norwegian stakeholders, representatives of all 19 county health directors in Norway accepted an invitation from the government to participate in a project for the nationwide implementation of Parent Management Training—Oregon Model (now known as the Generation Parent Management Training—Oregon Model, or GenerationPMTO) (PMTO; Forgatch, 1994; Ogden, Forgatch, Askeland, Patterson, & Bullock, 2005; see Forgatch & Gewirtz, Chapter 6, this volume) and multisystemic therapy (MST; Henggeler, Schoenwald, Borduin, Rowland, & Cunningham, 1998; Ogden, Christensen, Sheidow, & Holth, 2008; see Henggeler & Schaeffer, Chapter 12, this volume). At the same time, the Ministry of Health and Care Services also funded the evaluation of The Incredible Years program in two counties in the middle and the north of Norway (see Webster-Stratton & Reid, Chapter 8, this volume). The MST program was well established in the United States, and their disseminating organization, MST Services, took an active role in the implementation of the program in Norway. The PMTO, however, had not earlier been disseminated on a large scale, because PMTO therapists had previously been trained at the Oregon Social Learning Center (OSLC) primarily for research purposes. Norway became the first widespread testing ground for the PMTO dissemination efforts (Ogden et al., 2005). At the turn of the century, a strategy for the large-scale implementation and evaluation of the programs were developed as a collaborative effort between the program developers, the two Ministries, and the staff at the Norwegian Center for Child Behavioral Development (NCCBD).

The implementation strategy used was a combination of a "top-down" and a "bottom-up" approach (Ogden, Amlund-Hagen, Askeland, & Christensen, 2009). Top-down initiatives tend to place program control in the hands of experts and may easily create resistance at the practitioner level, while bottom-up initiatives are based on shared control between program purveyors and local stakeholders. The strength of the bottom-up strategy is the practitioners' sense of ownership, but it may be vulnerable due to lack of long-term funding and support from the political and organizational leadership. The tension between the top-down and bottom-up strategies was handled by combining the two models in a hybrid implementation model (Ferrer-Wreder, Stattin, Lorente, Tubman, & Adamson, 2004) based on federal funding, while the services took part in the decisions about adoption and implementation of programs. The main components of the national implementation strategy were the establishment of (1) a national center for implementation and research on evidence-based interventions (NCCBD); (2) a plan for implementations at the county and municipal levels; (3) a comprehensive therapist recruitment, training, and maintenance program; and (4) a network for collaboration, supervision, and quality assurance.

Even if the two ministries strongly recommended the implementation of evidence-based interventions (EBIs), there was also a high level of autonomy in the local agencies that allowed them to choose between EBI and more traditional approaches. But the national response to the invitation was encouraging. MST, which was delivered by the regional and state child welfare services, was immediately scaled-up with 24 teams in 17 counties, and shortly after, in all of the 19 counties in Norway. The implementation structure of PMTO was more complicated, because of a large number of potentially eligible agencies in at least 430 municipalities. A sufficient number of professionals had to be trained within the specialist services at the county level to be able to take on the task of a national implementation, both in the specialist and municipality services. Due to the limited capacity for training and supervision at the NCCBD, only 33 PMTO trainees were strategically selected to participate in the first round of training. But the planned training of consecutive generations of PMTO therapists has resulted in the certification of more than 400 trainees, 350 of whom are still active.

The NCCBD was established in 2003, in order to support implementation and research activities. The center has three separate departments, each led by a director. The department for children (12 years or younger) has seven clinicians, and the department for adolescents (17 years or younger) has six clinicians. The clinicians are certified specialists in clinical psychology or have equivalent competence. The research department has six full-time PhD researchers, and also a logistics team with five specialists in data management, observational coding, and research implementation. The following sections describe the implementation and testing of evidence-based practices in Norway, including the challenges and measures applied to successfully cross national, cultural, and language barriers.

OVERVIEW OF THE CLINICAL PROBLEMS ADDRESSED BY THE NCCBD

The target groups are families with children with noncompliant and aggressive behavior, and adolescents with antisocial behavior, including delinquency, criminal offenses, and drug abuse. The clinical problems are also described as externalizing behavior problems, conduct problems, oppositional defiant behavior, and serious behavior problems. Included are also additional problems such as attention-deficit/hyperactivity disorder (ADHD), anxiety, depression, truancy, and running away from home. Intake to the programs is based on clinical judgments, not diagnostic criteria. The intake criteria for each of the programs are detailed and include any behavior listed in diagnostic manuals (DSM-5 or ICD-10) or a problem description that is consistent or synonymous with these symptoms, such as those listed in the Child Behavior Checklist (CBCL) and the Teacher Report Form (TRF).

CHARACTERISTICS OF THE TREATMENT PROGRAMS IMPLEMENTED AND TESTED BY THE CENTER

Parent Management Training—Oregon Model

The PMTO was developed by Gerald Patterson, Marion Forgatch, and their colleagues at the (OSLC; Reid, Patterson, & Snyder, 2002). PMTO consists of five core parental skills whose aim is to promote positive parenting and healthy child development: encouragement, positive involvement, effective limit setting, monitoring, and problem solving. These are taught and rehearsed weekly (average 20–25 sessions) in a predetermined order through interactive teaching, by conducting role plays, and by committing the parents to participate in the process of finding the best solutions, adapted to the family's unique context.

The first regular practitioner training program of PMTO was developed in Norway as a collaborative enterprise between the program developers and the Norwegian Implementation Team (NIT) for children (Askeland, Apeland, & Solholm, 2014). Included in the training program was a PMTO handbook based on Patterson's social interaction and coercion model and on protocols from previous OSLC clinical trials (Forgatch, 1994). The new handbook, which was written in Norwegian, outlined the principles, procedures, and core program components. Members of the first generation of PMTO therapists were trained in English for 18 months by Forgatch and her colleagues but had to conduct their therapies in their native language. A lot of translation was necessary between the program developer and the candidates in the process of training, supervision, and certification. As acknowledged by the U.S. program developer: “The Norwegian trainers had to translate the purveyors’ materials, make language adjustments, adapt parent materials to fit cultural metaphors and perspectives, develop training programs, train trainers, develop communication systems, and strengthen and expand the infrastructure to monitor all stages.” (Forgatch & DeGarmo, 2011, p. 240). The practical problems were solved by group-based video supervision from the U.S. developer supplemented with her written comments and translated transcriptions (from Norwegian to English) of video recordings. In this way it was possible to evaluate whether the PMTO candidates applied the principles and concepts in accordance with the original model. In the certification process, the developer and her team did fidelity checks on all the first-generation participants. The Norwegian handbook was never translated back into English language, however, but some concepts and examples or metaphors were adapted to Norwegian culture in close collaboration with the developer.

The first generation of certified PMTO therapists included mostly clinical psychologists and clinical social workers/educators who documented extensive clinical experience with conduct problems in children. In order to become a PMTO therapist, at least a bachelor’s/MA degree and relevant clinical training were required. For each new generation of certified PMTO therapists, the therapists with the highest fidelity scores (Fidelity of Implementation Rating System [FIMP]) were selected to be trained as trainers. Expertise in the training, supervision, and certification of therapists has gradually been anchored in Norway. The NIT provides training, regular supervision, training protocols, additional materials, and quality assurance support. Site assessments are carried out in the municipalities and contracts that are signed state the mutual responsibility of the NCCBD and the local authorities. Guidelines for program participation are specified, as well as the resources that will be provided by the federal authorities and resources that will be required from the participating municipal services. Candidates for training are recruited through their workplaces to ensure that certified therapists in the future will be able to apply their competencies following certification.

Early Interventions for Children at Risk

Recognizing that many parents may manage with shorter parenting interventions than PMTO, the Early Interventions for Children at Risk program (Norwegian acronym, TIBIR) was designed to identify children at risk as early as possible, and to offer tailored local rather than specialist interventions (Solholm, Kjøbli, & Christiansen, 2013). The model was a modular, structured version with a low threshold for intake to treatment in the municipal services, and with shorter or alternative intervention approaches.

The TIBIR program was implemented in a variety of primary care settings, including public child health clinics, school psychology services, and kindergartens. Training and intervention handbooks describing the core intervention components were developed by the NIT. By 2015, there were 1,117 trained practitioners active in 100 municipalities that have implemented one or more of the following modules.

Brief parent training (BPT) promotes parenting skills in a short-term intervention (three to five sessions) delivered by regular staff in municipal child and family services. *PMTO parent group training* is delivered to groups of eight caregivers who meet weekly for 12 sessions, each lasting about 2.5 hours. Each group is led by two qualified PMTO therapists who have undergone a 2-day group intervention training. *The PMTO immigrant intervention* was developed to overcome the lack of participation by ethnic minorities in parent training programs. The NIT hired bilingual "link workers" to contact Somali and Pakistani mothers, who are the most dominant immigrant groups in Norway. This approach improved their recruitment and participation in the parent groups created specifically for these ethnic groups (Bjørknes, Jakobsen, & Nærde, 2011).

Multisystemic Therapy

MST is an intensive family- and community-based treatment for adolescents ages 12–17, with serious antisocial behavior. In MST the "client" is the ecology of the youth in which interventions aim to reduce risk factors and increase protective factors in the family, as well as in the adolescent's social network, including friends and school. As implemented in Norway, each team has a supervisor and three to four therapists, who are available for the families 24/7. The educational requirements for MST supervisors and therapists are a degree in clinical psychology or equivalent qualifications, and they also should have knowledge, training, and experience in the theoretical foundations of MST. The therapists have a caseload of three to five families, and they meet with the families and the social network system on a daily or frequent basis in the course of the treatment, which typically lasts 3–5 months. The County Municipal authorities hire the teams and cover salaries and expenses, while the training and the quality assurance with six Norwegian consultants, supported by MST services, are funded by the Ministries.

The extensive amount of MST training materials has been translated, but it could not be translated back and forth in a rigorous way without totally altering the clinical meaning of the texts. Therefore, English sentences had to be rewritten to make sense in Norwegian. It was considered clinically important that the translation be done by the staff members at the Department for Adolescents, who were all bilingual and specialists in clinical psychology.

Site assessments are carried out before teams are established, in order to ensure that there are an adequate number of eligible cases and to give guidelines to the host organization. In contrast to how regular services are conducted, the therapists require the clinical lead in the collaboration with other services. Flexible working hours are also required, so the therapists may meet with families and other systems when needed. Over the years the Department for Adolescents has assumed primary responsibility for training and quality assurance, and being able to do this in Norwegian was an important step in building the sustainability of MST.

The PMTO and MST programs were not immediately accepted by Norwegian practitioners, and a common objection was that "they may have worked in the United States, but they won't work here." No matter how many studies proved that evidence-based programs worked in the United States, it was not assumed that the same results would be achieved in Norway. Therefore, the randomized clinical trial

(RCT) replication studies were important contributions in the process of establishing the credibility of the programs. A small-scale implementation and evaluation project planned at the University of Oslo was quickly transformed into large-scale nationwide implementation study by request of the Ministries. The full-scale Norwegian replication studies were therefore conducted at the same time that the programs were rolled out nationally.

EVIDENCE ON THE EFFECTS OF THE TREATMENTS

PMTO studies

In order to test the transferability of the PMTO program to Norway, an RCT was conducted with 112 children age 12 or younger and their parents. Participants were recruited for this effectiveness study through regular child welfare and child mental health services (Ogden & Amlund-Hagen, 2008). The families were randomly assigned to PMTO or to regular services and were treated individually in a mean number of 26 sessions. Parents who received PMTO reported fewer externalizing behavior problems in their children and the teachers reported a higher level of social competence at postassessment in these children compared to the children who received regular services. The effect sizes favored PMTO, with Cohen's $d = 0.16$ and 0.20 for the CBCL Externalizing and Total Problem (TOT) scales, respectively. Medium effect sizes were found for the teacher-reported social skills and the parenting discipline dimension ($d = 0.47$ and 0.30, respectively), and a large effect size was found on the Parent Satisfaction scale ($d = 0.83$).

The question of sustainability of behavioral change in the children was addressed in a 1-year follow-up of study (Amlund-Hagen, Ogden, & Bjørnebekk, 2011). The study documented that the positive behavior changes were sustained in the PMTO group, but on most of the primary outcome variables, the comparison group caught up with the intervention group. According to intention-to-treat (ITT) analyses, there were no significant group differences on the main outcome variables, but two-parent families in PMTO showed greater reduction in observed total aversive behavior (TAB) compared to their regular service (RS) counterparts ($d = 0.42$). In the TOT analyses (of those who actually had participated in the training), PMTO children were rated by their teachers to have reduced their problem behavior (TRF, $d = 0.30$) and increased their social competence (Social Skills Rating System [SSRS], $d = 0.45$) relative to RS children. But the overall effectiveness of PMTO a year after treatment termination can at best be described as modest. Examining change mechanisms, two separate mediation models showed that assignment to PMTO predicted greater effective discipline (significant at the .05 level) and family cohesion (marginally significant at the .07 level) at postassessment, which in turn predicted improvements in several child domains at follow-up (Amlund-Hagen & Ogden, 2016).

The *scaling up* of PMTO in Norway was examined across three generations of PMTO therapists in a study investigating how large-scale dissemination affected the composition of the target group, the service providers, and the child behavioral outcomes (Tømmerås & Ogden, 2015). In spite of indications of a larger heterogeneity among both the service providers and the target population, the program was at least as effective in the large-scale dissemination phase as in the effectiveness phase, as measured by the amount of child behavioral change.

Working alliance and treatment fidelity (FIMP) were examined as predictors of parent-rated externalizing problem behaviors in PMTO in a sample of 331 parents (Hukkelberg & Ogden, 2013). Parents reported high and stable levels of alliance from pre- to postassessment, and there were no correlations with treatment fidelity as reported by independent coders of video-recorded therapy sessions. The standardized estimate of the fidelity measure was .18 for the fidelity measure, and –.17 for the alliance, and when added, the two predictors explained 49% of the change in parent-reported problem behavior at posttreatment assessment. In other words, treatment fidelity predicted reductions in parent-reported externalizing behavior, whereas working alliance was related to less change in problem behavior. The findings indicated the importance of high treatment fidelity as a predictor of parent-rated child outcomes, but alliance and fidelity were unrelated to teacher reports. The predictive validity of FIMP had been established in a study in which structural equation modeling (SEM) was successfully used to estimate effects of FIMP ratings on pre–post change in parenting across three generations of PMTO therapists in Norway. Higher levels of fidelity predicted increases in effective parenting (Forgatch & DeGarmo, 2011).

Early Interventions for Children at Risk (TIBIR)

The effectiveness of BPT was examined in an RCT that compared BPT to regular services ($N = 216$; Kjøbli & Ogden, 2012). At posttreatment assessment, significant beneficial outcomes in parenting practices and child behavior favoring BPT were demonstrated on 10 out of 15 outcome measures. The magnitude of the effects ranged from small to moderate. According to the parents, children who received BPT exhibited lower levels of conduct problems (Eyberg Child Behavior Inventory [ECBI] Intensity $d = 0.47$, and Problem Scale $d = 0.35$) and Anxiety/Depression (CBCL $d = 0.29$) and higher levels of social competence (Merrell Home and Community Social Behavior Scales [HCSBS]: $d = 0.30$) than children in the comparison group. Six months after treatment, the beneficial outcomes were sustained on six of 14 child and parent variables (e.g., ECBI: $d = 0.33$ and 0.32, HCSBS Externalizing: $d = 0.27$; Kjøbli & Bjørnebekk, 2013). But except for social skills assessment at posttreatment, the teacher assessments were not favoring the intervention group at any of the time points.

PMTO parent group training was evaluated in an RCT at posttreatment and 6 months after termination of the intervention (Kjøbli, Hukkelberg, & Ogden, 2013). A total of 137 children (ages 3–12 years) and their parents were randomly assigned to group-based training or regular services. Short- and long-term beneficial effects were reported from parents, although only short-term effects and no follow-up effects were evident on teacher reports. The parents in the PMTO group reported that the children presented significantly fewer problems on the ECBI Intensity and Problem scales at posttreatment (Cohen's $d = 0.42$ and 0.34, respectively) and also at 6-month follow-up ($d = 0.47$ and 0.31, respectively). The effect sizes for HCSBS externalizing were $d = 0.15$ (parents) and $d = 0.32$ (teachers) in favor of the PMTO group condition at posttreatment and $d = 0.39$ and $d = 0.26$ at follow-up. The children in the group condition scored higher on HCSBS social competence on both the parent ($d = 0.57$) and teacher ($d = 0.47$) posttreatment assessment, and similarly at follow up (parents $d = 0.38$, teachers $d = 0.31$). Taken together, there were significant effects in favor of group-based PMTO for 8 of the 14 outcomes at posttreatment, while 7 of the 14 outcomes were significant at the 6-month follow-up (Kjøbli et al., 2013).

A randomized trial of short-term (eight to 10 sessions) *individual social skills training* (ISST) of children with conduct problems examined its effectiveness immediately and 6 months after the termination of the intervention. The intervention is an integrated part of the TIBR model, and participants were 198 children (ages 3–12 years) randomly assigned to ISST or practice as usual. Findings revealed positive change on most outcomes in both study conditions, but no significant group differences appeared. The data suggest that it is insufficient to provide ISST when aiming to reduce conduct problems in children, and that the intervention probably should be combined with parenting interventions (Kjøbli & Ogden, 2014).

A PMTO *minority project* was tested in an RCT with wait-list control that examined the effectiveness of PMTO on maternal parenting practices and child behavior in a group of 96 mothers from Somalia and Pakistan and their children ages 3 to 9 years (Bjørknes & Manger, 2013). PMTO significantly enhanced positive parenting practices ($d = 0.54$) and reduced mother-reported child conduct problems (ECBI and Parent Daily Report [PDR] composite score: $d = 0.32$), but no behavioral changes were reported by the teachers.

A nonrandomized moderator study examined whether ADHD predicted behavioral change among 253 children and families treated with PMTO; among these, 97 children were reported to have an ADHD diagnosis (Bjørnebekk, Kjøbli, & Ogden, 2015). Although different at intake, the groups (CP [conduct problems] and CP + ADHD) had close to an equal change in behavioral status following treatment. However, the lack of a comparison group made it difficult to ascertain what the outcomes would have been if the combined CP and ADHD group had received no treatment or an alternative treatment. The combination of child ADHD and a high degree of maternal anxiety/depression or low family income predicted less beneficial outcomes after PMTO treatment. Reductions in CP following PMTO were of the same magnitude in children with or without ADHD, except in the presence of maternal depression or low family income.

MST Studies

A randomized trial of MST was conducted with outcomes reported at posttreatment and 2 years after intake. The study was conducted during the first year of implementation with 100 adolescents (ages 13–17) and their families. Following treatment, MST had prevented placement out of home to a greater extent than regular services (91 vs. 58% living at home at posttreatment). MST was associated with a marginally significant decrease in externalizing ($p < .07$) and a significant reduction in internalizing problems ($p < .03$) at termination of treatment. The MST group also increased their social competence more than did the comparison group ($p < .05$), and their families gave more positive evaluations of the treatment ($p < .07$) than did the families receiving regular services (Ogden & Halliday-Boykins, 2004).

The follow-up study conducted 2 years after intake showed that MST was still more effective than regular services at three of the four sites included in the study. The effect sizes were $d = 0.26$ for self-reported delinquency (SRD), $d = 0.50$ for the parents' CBCL ratings, and $d = 0.68$ for the teachers' TRF ratings (Ogden & Amlund-Hagen, 2006).

The sustainability of the MST program across participant groups in the second year of operation was examined in a group comparison study of 55 adolescents who were referred to MST in the second year of program operation and those who participated in the first round of evaluation (Ogden, Amlund-Hagen, & Andersen, 2007). Of those living at home at intake, 90% of the MST adolescents referred in the second year were still living at home at postassessment compared to 60% of those receiving regular services in the first year. The clinical outcomes in the second year of program operation matched and, for key indices of antisocial behavior, surpassed those achieved during the first year. The design of the study did not, however, allow for conclusions about causality.

Echoing the international literature, Norwegian practitioners asked if new programs like PMTO and MST were better adapted to boys' risk profiles and needs than to those of girls. In response to this question, gender differences in behavioral change were examined in a group comparison study of 117 MST adolescents, of which 41 were girls (Ogden & Amlund-Hagen, 2009). Results suggested that boys were significantly more likely than girls to be referred because of criminal offenses and domestic violence, while girls were more likely to be referred because of statutory offenses and drug use. Gender differences were detected on neither the main outcome variable of placement out of home nor the multi-informant composite variables of internalizing and externalizing behavior. The design of the study did not allow for causal conclusions, but it still demonstrated an equal amount of behavioral change in girls and boys who received MST (see also Kjøbli & Ogden, 2009).

A special challenge appeared in efforts to treat drug abuse in family-based treatment programs such as MST. As a consequence, and sponsored by the National Institute on Drug Abuse (NIDA), a clinical trial was carried out as a joint project between the U.S. program developers, the NCCBD, and eight Norwegian MST teams. The trial examined the effects of MST combined with contingency management and cognitive techniques on drug abuse among adolescents (Holth, Torsheim, Sheidow, Ogden, & Henggeler, 2011). The aim of the study was to investigate therapist adherence to behavioral interventions as a result of an intensive quality assurance system integrated into MST. Eight teams were block randomized to either an "Intensive Quality Assurance" or a "Workshop Only" condition, and 41 cannabis-abusing adolescents and their families were treated during the trial. The results showed that cannabis abstinence increased as a function of time in therapy. Abstinence was more likely with stronger adherence to contingency management, but it did not differ across quality assurance conditions.

Ten years after the nationwide dissemination of MST and PMTO, a cross-sectional study was conducted to compare their implementation profiles (Ogden et al., 2012). The 218 participants in the study were therapists, supervisors, and agency leaders who were interviewed by telephone according to the "Implementation Components Questionnaire" (Fixsen, Panzano, Naoom, & Blase, 2008). Both programs seemed to have established and sustained highly structured and consistent procedures for training and supervision, and scored high on the competency implementation drivers. The mean composite scores were lower on the organizational implementation drivers, indicating that the integration of the programs into the local services systems was less encouraging. Among the therapists, the most positive ratings came from young persons with shorter professional careers, and from the MST therapists who worked full-time in tightly organized teams of three and four. Equally positive were the PMTO therapists who worked more than 80% on the program and in the company of at least two program colleagues. Ratings were not influenced by the number of years of experience with the program, and the median number of 3 years of program experience for therapists indicated a considerable stability among program staff members.

Summing up, the Norwegian RCTs of MST and PMTO generally showed that the evidence-based programs significantly outperformed usual care, even if the effect sizes were modest at posttreatment assessment (see Tables 22.1 and 22.2).

TABLE 22.1. Characteristics and Outcomes of the PMTO and TIBIR Studies

Publication	Target problem	Sample size	Design	Intervention	Control condition	Outcomes
Ogden & Amlund-Hagen (2008)	Conduct problems	112	RCT (ITT)	PMTO	RS	Mean *d* = 0.15
Amlund-Hagen, Ogden, & Bjørnebekk (2011)	Conduct problems	75	Follow-up (TOT)	PMTO	RS	TRF: *d* = 0.12 SSRS—teacher: *d* = 0.29 TAB: *d* = 0.17
Bjørknes & Manger (2013)	Conduct problems	96	RCT (ITT)	PMTO group treatment	Wait-list control	CP composite: *d* = .27 ECBI—problem: *d* = 0.27 TRF: *d* = 0.11
Hukkelberg & Ogden (2013)	Conduct problems	331	Prediction	PMTO	None	Treatment fidelity > alliance
Kjøbli & Ogden (2012); pre–post assessment	Conduct problems	216	RCT (ITT)	BPT	RS	Mean *d* = 0.37
Kjøbli & Bjørnebekk (2013); 6-month follow-up	Conduct problems	216	Follow-up	BPT	RS	Mean *d* = 0.31
Kjøbli, Hukkelberg, & Ogden (2012); pre–post assessment; 6-month follow-up	Conduct problems	137	RCT (ITT) follow-up	PMTO Group training	RS	Mean *d* = 0.37 Mean *d* = 0.39
Kjøbli & Ogden (2014); pre–post assessment; 6-month follow-up	Conduct problems	198	RCT (ITT) follow-up	Individual social skills training	RS	NSG
Tømmeraas & Ogden (2015)	Conduct problems	322	Group comparison	PMTO	None	NSG

Note. BPT, brief parent training; CP composite, conduct problems composite scale; ECBI, Eyberg Child Behavior Inventory; ITT, intention to treat; ES, effect size; NSG, no significant group differences; RCT, randomized controlled trial; RS, regular services; SSRS, social skills rating system; TAB, total aversive behavior score; TOT, totally treated; TRF, Teacher Report Form.

TABLE 22.2. Characteristics and Outcomes of the MST Studies

Publication	Target problem	Sample size	Design	Intervention	Control condition	Outcomes
Ogden & Halliday-Boykins (2004)	Antisocial behavior	96	RCT	MST	RS	Mean $d = 0.23$
Ogden & Amlund-Hagen (2006)	Antisocial behavior	75	Follow-up	MST	RS	SRD: $d = 0.26$ CBCL: $d = 0.50$ TRF: $d = 0.68$
Ogden, Amlund-Hagen, & Andersen (2007)	Antisocial behavior	105	Group comparison	MST	RS	MST > RS on externalizing and internalizing composite
Holth, Torsheim, Sheidow, Ogden, & Henggeler (2011)	Antisocial behavior and substance abuse	41	Block randomized	MST and contingency management	Regular MST	Cannabis abstinence increased as a function of time in treatment

Note. CBCL, Child Behavior Checklist; RS, regular services including outpatient services and residential care; SRD, self-report of delinquency; TRF, Teacher Report Form.

The effect sizes have to be considered in relation to the fact that the effectiveness studies were conducted early on in the introductory phase of the programs in Norway. The new generation of adapted PMTO interventions (TIBIR) was developed and implemented at a later stage when programs had matured. With one exception (Kjøbli & Ogden, 2014), the evaluation of the adapted interventions demonstrated larger effect sizes than the clinical trials of PMTO and MST. But even if the effect sizes increased in the more recent studies, they were still in the moderate range according to Cohen's (1992) criteria. The studies also confirmed findings from meta-analyses that the improvements in parenting practices were larger than improvements in child and adolescent behavior, and few generalization effects to schools or child care were detected (Shirk & Karver, 2003; Weisz et al., 2013).

CROSS-NATIONAL IMPLEMENTATION AND TESTING OF MODEL PROGRAMS

A number of scientifically evaluated interventions from North America seemed to work equally well in Norway. And as recommended by Fixsen and colleagues (2008) and evidenced by Gardner, Montgomery, and Knerr (2015), the programs were initially implemented with no major modification of the original model. Few adaptations were called for in order to make the programs work in the Norwegian context, and the programs' ability to match the individual families' needs and situation were indicated by the low number of dropouts from treatment, encouraging youth outcomes and positive user evaluations. According to the panel of European implementers interviewed by Ferrer-Wreder and colleagues (2004), the main cross-national implementation barriers were time constraints and lack of financial support or lack of personal energy. In addition, to have pragmatic appeal, the interventions should be robust enough to adapt to contextual and cultural variations. Norwegian MST therapists and supervisors reported few problems in engaging ethnic minorities in treatment, referring to the highly contextual nature of the model as contributing to the adaptation to each family's cultural needs (Ogden et al., 2008). One cultural difference that became quite noticeable was the understanding of how young people develop independence. In the United States, it seems the parents have more to say when decisions are made concerning what the youth is allowed to do, while in Norway the adolescent will often have more influence in those decisions. This topic was also raised in the PMTO program with reference to the contemporary Norwegian attitude strongly supporting childrens' right to influence their daily lives, and their right to speak out, without being exposed to harsh discipline or punishment.

Even if Norway has been receptive to empirically supported interventions for children, youth, and families, there were several challenges and controversies in the process of implementing the evidence-based programs, particularly in the initial phases (Ogden et al., 2005, 2009). Critics claimed that the "relation" was more important than the "evidence" and that the practitioners had to be more important than the programs (Fossestøl & Enehaug, 2008). Some practitioners opposed the manual-driven approach, stating that it was a threat to professional autonomy and to the principle of freedom of method choice. At the clinical level, the lack of specific, explicit therapeutic skills also turned out to be a challenge. The practitioners were expected to learn clinical skills through role play and apply them to training situations and therapy sessions. They also had to accept supervision based on video-recordings of their therapies (PMTO), weekly group supervision and consultation in MST, and feedback from families on the therapists' treatment adherence were collected on a regular basis in MST. But to our knowledge, no trainees dropped out of the training because of these requirements, and the therapists gradually adapted to the skills-oriented approach and the increased transparency of the therapy process.

Some of the local leaders were not prepared for the new demands that were put on them and their agencies to establish practical routines for recruiting, training, and supporting the evidence-based practices (EBPs). And there are still great variations in how much leaders of local agencies and regional services have adapted their leadership style to the needs and demands of the EBPs. The new programs also challenged the traditional strategy of placing children and youth out of home in institutions or foster homes for longer periods of time. When children, and youth to a greater extent, are treated within their family and local environment, the result can be increased pressure on their social networks, including families, schools, and neighborhoods. And some still claim that it would be better to incarcerate the young offenders (Ogden et al., 2008). This is as much a policy discussion as a discussion about "what works" for children who act out, and we expect this to be a part of the continuous discussion about "punishment or treatment" in the Norwegian society.

Looking back at the implementation of PMTO in Norway, Forgatch, Patterson, and Gewirtz (2013) reflect on how some practitioners were less than enthusiastic to meet the requirements of the implementation. The PMTO training program was comprehensive, intensive, and based on behavioral and systemic principles that did not match the eclectic or dynamic theoretical orientation of several of the therapists. Moreover, many of the agency leaders were unfamiliar with implementing structured treatment programs, and integrating the programs with existing regular practice was not without problems. The introduction of the new program was considered by some to be an implicit critique of regular practice, and the implementation team had to engage in several information and negotiation activities. No systematic strategy was applied in this process, and several ad hoc countermeasures were used, such as information meetings, e-mails, and phone calls, and distribution of written information such as journal articles, newspaper articles, and even TV reports, when available.

The turning point for many of the therapists happened when the parents receiving PMTO and MST expressed their satisfaction with the positive changes in their families and in their children's behavior. Moreover, the objections and resistance did not reduce the number of practitioners volunteering to learn and practice the programs. And even if there still are some who question the relevance and value of EBPs, the positive experiences and feedback from practitioners and families seem to have balanced the opposition and critique. To a very little extent did the local services have to make a shift in funding from existing resources (Ogden et al., 2008). The long-term financial support from the Ministries through the NCCBD has been crucial for the sustainability of the fidelity of the programs and to handle turnover of therapists.

"Core components" were defined by both the developers and the Norwegian change agents as those with the strongest empirical underpinnings in controlled trials. And they appeared to work equally well in Norway and the United States. But some surface changes were made in order to adjust words and ideas to the Norwegian context. In PMTO, the constructs of "punishment" and "discipline" did not go down well with parents and therapists, and were replaced by "negative consequences" and ”limit setting." Another concept that met with resistance, "time-out," was consequently replaced with "time for a break." These replacements were congruent with the underlying principles of PMTO stating that parents used contingent, short, negative sanctions for deviant behavior. In the current PMTO training programs, the school component is emphasized, including increased involvement of and training of the teachers in behavior management.

Research Challenges

Intervention research is complex, expensive, and time consuming. Maybe for these reasons, few, if any, RCTs had been conducted within the child and adolescent services in Norway before the introduction of MST and PMTO. In order to conduct independent studies of the interventions, the researchers at the NCCBD have not been involved in the training or supervision of the therapists, nor have they been in direct contact with the families undergoing treatment.

Norway and United States share some fundamental values and ideas, for instance, about how families and parent–child relations or teacher–student relations work. But still there are national differences, for instance, in the type and amount of risk factors to which young delinquents are exposed, such as differences in poverty, violence, crime rates, and the availability of drugs and guns. Norway has no juvenile justice system, and the age of criminal responsibility is higher than that in the United States (age 15 years in Norway). In RCTs, treatment-as-usual (TAU) groups in the United States are often exposed to risk factors that are both more severe and more numerous than those in Norway. The prevalence of stressors such as neighborhoods with high crime rates and substance abuse are more common in the United States. Moreover, the regular services to which MST was compared in Norway were likely to be more comprehensive and to have more elements of treatment than the regular services offered to comparison groups in previous MST trials in North America. In the United States, "regular services" often consists of probation office visits and referral to social services when deemed necessary. In Norway, usual services involve a broad array of social services and mental health treatment, including placement in institutions and in-home services.

FUTURE DIRECTIONS

The transportation of evidence-based programs across borders has been a source of inspiration to researchers, scholars, and practitioners in other European countries (Biglan & Ogden, 2008). The experiences from Norway could serve as a model and inspiration for large-scale implementation of EBPs that other nations can employ. It is possible to identify and implement EBPs and have clear standards for training and evaluation of competence that ensure implementation fidelity and support local efforts. Federal funding of training and technical support, combined with allowing agency employees to volunteer to participate, is a promising strategy. Research should be an integrated part of the implementation of EBPs, preferably multiallegiance research across different programs and interventions. Although previous findings justify optimism, because larger effect sizes can most likely be achieved, further research is needed to optimize interventions aimed at reducing youth conduct problems. During the first 5 years of implementing MST, a concern was raised that adolescents not eligible for MST, but still at risk, would not have access to a similarly high-quality treatment such as MST. To address this, two more programs were introduced in Norway: functional family therapy (FFT; Alexander, Waldron, Robbins, & Neeb, 2013) and treatment foster care Oregon (TFCO; Chamberlain, 2003; see Buchanan, Chamberlain, & Smith, Chapter 11, this volume). Evaluations of these programs are ongoing (FFT) or in the planning phase (TFCO), but no publications are yet available. To further increase the effective use of EBPs in clinical practice in Norway, the modular approach to therapy for children with anxiety, depression, trauma and conduct problems (MATCH; Weisz et al., 2012) is being piloted during 2016. MATCH has been designed to address the comorbidity and changing problems and needs that often emerge during treatment, particularly in the outpatient child mental health services.

CONCLUDING COMMENTS

At present, implementation and research on EBPs have lasted for more than 15 years, and have allowed for the study of trans-Atlantic relevance of the programs.

The national implementation strategy seem to have worked as intended, and the PMTO and MST program and their adaptations have been implemented with a high degree of fidelity and sustainability over a period of 15 years. The Norwegian experience highlights the importance of establishing a national, self-sustaining implementation organization in order to strengthen the implementation infrastructure by securing sustainability of program operations and treatment fidelity at regional, county, and municipal levels.

Among the factors that have contributed to the long-term sustainability and effectiveness of EBPs in Norway, the following seems to be most important (Ogden et al., 2009): (1) a genuine interest and commitment at the political and administrative levels for the national implementation of EBPs, (2) increased interest in EBPs among practitioners, (3) establishing a self-sustaining national center for implementation and research, (4) the ability of the program developers to support the implementation and research efforts, and (5) positive evaluations from families and positive media feedback.

ACKNOWLEDGMENTS

The research reported in this chapter was supported by the Norwegian Government, the Ministry of Children Equality and Social Exclusion, and the Ministry of Health and Care (including the following directorates: *Barne-, ungdoms- og familiedirektoratet and Helsedirektoratet*). The research was also supported by Grants Nos. K23DA015658 and R01DA015844 (International Supplement) from the National Institute on Drug Abuse, and Grant No. R01DA 16097 from the Prevention Research Branch of the NIDA, and Grant No. P30 DA023920 from the Division of Epidemiology, Services and Prevention Research, Prevention Research Branch of the NIDA.

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CHAPTER 23

Implementing and Testing Youth Psychotherapies through a National Center for Evidence-Based Practice in New Zealand

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OVERVIEW OF THE WERRY CENTRE

The Werry Centre for Infant, Child and Adolescent Mental Health, in Auckland, New Zealand, is named for John Werry, the inaugural Professor in Psychiatry at the University of Auckland. In the 1990s, Werry articulated a vision for a university-based center that could support excellence in child and adolescent mental health services through research and teaching based on sound scientific evidence. The Werry Centre focuses on New Zealand, a country of 4.6 million people. About 70% are of European descent, about 15% are the indigenous Māori, 9% are of Asian descent, and 7% are non-Māori Pacific Islanders. As the indigenous people, Māori have status and rights that are protected by the Treaty of Waitangi (Durie, 2011), but nonetheless they and other minority groups experience health, educational, and socioeconomic disadvantages (Durie, 2011). One part of the Centre's mission is to address such inequities in relation to mental health care, with special attention to Māori young people.

A number of government initiatives to improve mental health in New Zealand, including provision of national training programs that were ideally suited for delivery by a tertiary educational facility, provided the original impetus that led to the development of The Werry Centre. This was launched at Waipapa Marae (a Māori meeting place house) at the University of Auckland in 2003. From the outset the Centre was set up with a national focus and with the aim of improving the mental health of infants, children, and adolescents in New Zealand by doing the following:

- Undertaking research in child and adolescent mental health.
- Providing training of a high quality to mental health professionals.
- Providing expert advice to support the development of excellent infant, child, and adolescent mental health services.
- Supporting the child and adolescent mental health workforce nationally.

Initially the Centre was small. With growth funded through many sources, the staff now numbers more than 30, including clinical academic child and adolescent psychiatrists and psychologists, nurses and other allied health professionals, and people with expertise in policy development and service planning. Youth and family consumer advisors and Māori and Pacific cultural advisors are also part of the team and provide input on all projects.

Supporting the introduction of effective therapies across a nation requires a strategic approach. We laid out a framework that included the following to address some of the potential barriers:

- Taking a systematic approach to identifying effective treatments.
- Testing evidence-based therapies developed in other parts of the world in the New Zealand context (and at times tailoring these to the specific needs of the New Zealand population).
- Developing and testing new therapies.
- Increasing the profile of evidence-based therapies.
- Developing an infrastructure to support the training and implementation of therapies likely to provide most gain for children and adolescents in New Zealand.
- Developing relationships with child and adolescent mental health services across the country, to encourage the implementation of evidence-based therapies.
- Working closely with a number of government departments, with the joint aim of ensuring excellent services for children and adolescents with mental health problems.
- Advocating for the mental health needs of children and young people when these are not being adequately addressed.

OVERVIEW OF CLINICAL PROBLEMS ADDRESSED BY THE WERRY CENTRE

A number of epidemiological and longitudinal studies have provided estimates of mental health problems faced by young people in the country (McGee, Feehan, Williams, & Anderson, 1992; Fergusson & Horwood, 2001; Fleming et al., 2014).

Among the problems identified, significant depressive symptoms are especially prevalent, with rates of 8.6% for males and 16.2% for females in secondary schools (Fleming et al., 2014). New Zealand studies have shown that only one-fourth of young people receive treatment (Fergusson, Horwood, & Lynskey, 1993; Mariu, Merry, Robinson, & Watson, 2011). Furthermore, New Zealand has comparatively high rates of youth suicide, with depression as one of the major risk factors (Beautrais et al., 2007). Depression is one of the costliest disorders to society (Murray & Lopez, 2013) and to individuals (Fergusson & Woodward, 2002). Anxiety is also common, affecting approximately 5–8% of children (Anderson, Williams, McGee, & Silva, 1987), and is highly comorbid with depressive disorder (Woodward & Fergusson, 2001). Natural disasters, especially the earthquakes in Christchurch, New Zealand, in 2010/11, added weight to the imperative to address this common problem.

The rate of significant behavior difficulties and conduct problems in New Zealand children has also been identified as a serious social issue, with significant impact on the educational achievement, and emotional and social well-being of children. These difficulties affect between 5 and 10% of children (McGee et al., 1992; Fergusson & Horwood, 2001), with rates higher for Māori children. There is evidence that intervening early to reduce or prevent these problems provides substantial savings to society over the longer term (Fergusson, Boden, & Hayne, 2011), with evidence that the cost of delivering parent training programs can result in a 10-fold cost reduction (Scott, 2007).

Given the high prevalence rates and impact of emotional disorders and disruptive behavior disorders in New Zealand, these have been a major focus of The Werry Centre. However, there have many other programs of work undertaken at the Centre designed to assist those with eating disorders, autism spectrum disorders, posttraumatic stress disorder, and early-onset psychosis, to name a few. The approach has been to identify and provide training in best practices for these conditions (for more information, visit *www.werrycentre.org.nz*).

Aspiring to Change Child and Adolescent Mental Health across a Nation

The Institute of Medicine has outlined a comprehensive model to address the mental health needs of a whole population, from health promotion through prevention, early intervention, treatment, and rehabilitation (O'Connell, Boat, & Warner, 2009). This lends itself to a "stepped-care" approach of providing interventions across a spectrum, addressing differing levels of severity, and incorporating the concept of attempting to prevent the onset of problems. This has provided a useful framework for tackling common mental health problems of young people in New Zealand and increasing the capacity and capability of the workforce to deliver evidence-based psychological therapies. In order to ensure that our own staff members were well informed, we used resources such as the reviews produced by the National Institute for Health and Care Excellence in the United Kingdom (NICE; *www.nice.org.uk*), the Practice Parameters developed by the American Academy of Child and Adolescent Psychiatry, and we conducted our own systematic reviews and meta-analyses under the Cochrane Collaboration (*www.cochrane.org*).

Interventions for Depression and Anxiety

Two early Werry Centre meta-analyses shaped our work on depression in young people. The first, on antipressant medications, showed that although antidepressants were, at the time, recommended as one of two first-line treatments for depressive disorder in young people, only fluoxetine was clearly more effective than placebo in reducing symptoms (Hetrick, Merry, McKenzie, Sindahl, & Proctor, 2007). The second, on depression prevention programs, identified numerous study limitations;

although the evidence did not warrant widespread introduction of depression prevention programs at that stage, the approach had promise and a case for further research was made (Merry, McDowell, Hetrick, Bir, & Muller, 2004).

Despite some limitations in the evidence, cognitive-behavioral therapy (CBT) remains one of the key psychological therapies recommended for emotional disorders, including depression and anxiety (Klein, Jacobs, & Reinecke, 2007; in this volume, see Kendall, Crawford, Kagan, Furr, & Podell, Chapter 2; Franklin, Morris, Freeman, & March, Chapter 3; Rohde, Chapter 4). The program of work at the Centre has included initiatives to develop and test interventions based on CBT to prevent the onset of depression and to provide increased access to treatment through innovative approaches to delivery and by increasing the number of CBT-trained practitioners.

Interventions for Conduct Problems

The most robust evidence for intervention for conduct problems in early and middle childhood has been for parent management training programs (Furlong et al., 2012; in this volume, see Forgatch & Gewirtz, Chapter 6; Zisser-Nathenson, Herschell, & Eyberg, Chapter 7; Webster-Stratton & Reid, Chapter 8; Kazdin, Chapter 9; Sanders & Turner, Chapter 25; Fried & Fisher, Chapter 26). One review of the evidence suggests that these programs are most successful with 3- to 7-year-old children, in whom treatment may reduce rates of conduct problems by up to 80%, with program effectiveness declining with increasing age of the child (Fergusson et al., 2011). A recent meta-analysis showed that parent training produced a statistically significant reduction in child conduct problems, whether assessed by parents (effect size [ES] = 0.53) or independently (ES = 0.44) and a reduction in harsh parenting practices (ES = 0.77 on parent reports and ES = 0.42 on independent reports) (Furlong et al., 2012).

There is a consensus that parent-training programs are cost-effective. It has been estimated that by the age of 28, costs for individuals with conduct disorder are around 10 times higher than costs for those without disorder, with a mean cost per individual estimated at US$124,642 (£70,019; €103,121) in 2005 (Dretzke et al., 2005). The cost of providing parent training programs was estimated at US$1,120 (£629; €926) to US$6,834 (£3,839; €5,654) per family in 2005, and in a recent meta-analysis was recalculated at approximately US$2,500 (£1,712; €2,217) per family (Furlong et al., 2012). Empirically supported parenting interventions appear to show beneficial effects even when transported outside their countries of origin (Gardner, Montgomery, & Knerr, 2016), although the "translation" of interventions from one country to another requires careful thought to ensure success.

CHARACTERISTICS OF THE TREATMENT PROGRAMS IMPLEMENTED AND TESTED BY THE WERRY CENTRE

In developing our intervention programs, we place special emphasis on a "cultural fit" for the Māori population. Intervention enhancements are often created to increase relevance for Māori. We follow a core set of guiding principles: the importance of working in partnership and taking time to build relationships; acknowledgment of and respect for the unique worldview of Māori; and the concept of weaving together cultural knowledge and skills with core program content and competencies. Specific enhancements are illustrated in the following descriptions.

Cognitive-Behavioral Therapy

Depression Prevention

Having identified depression prevention as a strategy worth further exploration (discussed previously), we obtained funding to assess a promising depression prevention program developed in Australia, the Resourceful Adolescent Program (RAP). This had been designed as a universal intervention for delivery in the school setting. Initial data from a cohort study comparing the program with no intervention were promising, showing significantly lower levels of depressive symptomatology and hopelessness postintervention and at 10-month follow-up in the intervention group (Shochet et al., 2001).

The RAP model is based on cognitive-behavioral and interpersonal therapy principles. It consists of 11 manualized sessions delivered weekly within a high school lesson. We adapted the Australian program to create "RAP-Kiwi" to ensure that the program was suitable for both Māori and other New Zealand adolescents. We kept the overall structure but provided both English and Māori titles for each session, changed the graphics to cartoons that depicted New Zealand young people of differing ethnicities, and changed the focus of some of the activities to make them more relevant to New Zealand young people. We designed a placebo program matched in look and duration, but in which the focus was on having fun, with all CBT and interpersonal therapy content removed. One example of this was the teaching of problem solving. In the active intervention, students were given a problem to solve, then were taught problem-solving strategies; in the placebo program, students were provided the same problem as an exercise but no problem-solving strategies were taught.

We carried out a single-blind randomized controlled trial ($N = 394$) in two secondary schools. It was explicitly bicultural, and we attempted to oversample for Māori to evaluate the efficacy of the program (Table 23.1). Our study showed that a universal depression prevention program, delivered by teachers, was effective in reducing depressive symptoms in the short term, but with more equivocal results at follow-up. Immediately after the intervention, depression scores were reduced significantly more by RAP-Kiwi than by placebo. Group differences in depression scores averaged across time to 18 months were significant on the Reynolds Adolescent Depression Scale (Reynolds, 2010) but not on the Beck Depression Inventory–II (Beck, Steer, & Brown, 1996). The effect size was small; however, categorical analysis confirmed potential significant clinical benefit with an absolute risk reduction of 3% ($p = .03$), with 33 as the "number needed to treat" for short-term benefit (Merry, McDowell, Wild, et al., 2004).

Despite the potential positive results of the trial, the equivocal results on the Beck Depression Inventory, lack of clear evidence that depressive disorder prevalence would be reduced, and somewhat negative feedback from teachers who had been part of the study led us to conclude that a national rollout of RAP-Kiwi was premature. This cautious approach was vindicated by later effectiveness trials by other groups that failed to show an effect of the RAP program (Harnett & Dadds,

2004) and one that suggested the potential to do harm (Stallard et al., 2012). These findings are salutary and will be discussed further in light of more recent meta-analyses in the section "Future Directions."

Depression Treatment Using E-Therapy

Despite the prevalence of depression and anxiety, access to evidence-based psychological therapies such as CBT is outside the reach of many New Zealanders, with barriers including variable access to mental health services and the stigma associated with mental ill-health (Booth et al., 2004, Mariu, Merry, Robinson, & Watson, 2011),

Computerized therapies provide an opportunity to increase access to help for common mental health problems, so in 2003 we created one of the world's first purpose-developed youth computerized CBT (cCBT) programs, "The Journey," in which we presented content informed by CBT using animations, interactive mini games, and minimal written text to ensure maximal appeal to youth. A pilot study showed it to be effective, with a between-group ES of 1.7 (Stasiak, Hatcher, Frampton, & Merry, 2014), but young people who used it reported that they wanted it be more interactive and game-like.

We went on to develop a CD-ROM based cCBT gamified program called SPARX (Smart, Positive, Active, Realistic, X-factor thoughts). SPARX utilizes an interactive three-dimensional (3D) fantasy game format. SPARX has seven sequential modules (levels), each taking 20–30 minutes to complete. The content covers the core CBT strategies, with elements of interpersonal skills development and mindfulness. Each module is set in a different "Province," reflecting the skills it aims to cover. For example, cognitive distortions are represented as GNATs (Gloomy Negative Automatic Thoughts) that "bog people down" and plague the "Swamp Province."

Using an iterative co-design process with youth and cultural advisors, we created the overarching game narrative and carefully considered the design features to ensure that they were culturally acceptable. For example, avatars can be customized to provide options for young people from major ethnic groups in New Zealand, and design elements in the fantasy world include many references to Māori symbols such as the Bird of Hope, which is a tui (New Zealand native bird which is symbolic of teaching) (Fleming, Dixon, & Merry, 2012; Lucassen et al., 2013).

A large randomized controlled inferiority trial demonstrated the effectiveness of SPARX compared with usual care (consisting mostly of face-to-face counseling; Merry et al., 2012). A smaller trial with adolescents excluded from mainstream education showed SPARX to be effective and acceptable in this high-risk group (Fleming, Dixon, Frampton, & Merry, 2012). Open trials with sexual minority youth (e.g., lesbian, gay, and bisexual adolescents) (Lucassen, Merry, Hatcher, & Frampton, 2015) and with Māori youth (Shepherd, 2011) further supported the acceptability of the program with these populations with within-group ES ranging from 0.8 to 1.49 (Table 23.1).

The CD-ROM version was then moved to an online platform and the Patient Health Questionnaire for Adolescents (PHQ-A; Johnson, Harris, Spitzer, & Williams, 2002) was embedded within the game interface to allow for ongoing monitoring of the effectiveness of SPARX, while data collected on the Web could be used to monitor adherence. This set the scene for a national rollout, which followed (see the section on implementation below).

TABLE 23.1. Brief Descriptions of the Studies Undertaken to Evaluate Depression Interventions

Program/ intervention	Study	Target population, setting, method (N = number of subjects starting study or treatment)	Content, format and number/length of sessions	Treatment/control (N = number of subjects in data analyses)	Major findings	Effect size	Additional information
			Randomized controlled trials				
RAP-Kiwi	Merry, McDowell, Wild, et al. (2004)	Universal sample: high school adolescents (ages 13–15); $N = 392$	CBT-based, manualized, teacher-led group program (graphics adapted for relevance to New Zealand youth); 11 sessions, 45 minutes each, completed once a week	Placebo control (matched for format/duration); intervention N = 185, control $N = 207$	Depression self-ratings at postintervention significantly lower in the intervention than the placebo group (persisting to 18-month follow-up on one measure of the two measures of depression)	Postintervention Cohen's $d = 0.24$ on RADS; at 18 months, $d = 0.08$ on RADS and negative effect size ($d = 0.11$) on BDI-II (i.e., favoring placebo)	
The Journey	Stasiak et al. (2014)	Adolescents seeking help for depression from school counselors (ages 13–18); $N = 34$	CBT-based computerized intervention with animations and interactive exercises; 7 modules, 20–30 minutes each	Placebo control computer program (matched for format/duration); intervention $N = 17$, control $N = 17$	Active group associated with significantly fewer depressive symptoms on CDRS-R postintervention	Postintervention Cohen's $d = 1.7$ on CDRS-R	Pilot, feasibility study
SPARX	Merry et al. (2012)	Help-seeking adolescents with significant symptoms of depression	CBT-based, computerized intervention with interpersonal	Treatment as usual (TAU) consisting predominantly of face-to-face	SPARX was not inferior to TAU in reducing symptoms of depression on	Cohen's $d = 0.3$ (on CDRS-R using ITT analysis)	Noninferiority design

		recruited through clinical services (ages 12–19); $N = 187$	and mindfulness strategies; 7 modules, 20–30 minutes each	counseling; intervention $N = 94$, control $N = 93$	CDRS-R and RADS-2 using per protocol and ITT analyses (effect maintained at 3 mo)		
	Fleming, Dixon, Frampton, et al. (2012)	Offered to whole classes (alternative education setting, i.e., those excluded from mainstream education) (ages 12–16); $N = 32$		Wait-list control; intervention $N = 22$, control $N = 10$	Significantly greater reduction in SPARX on CDRS-R and RADS-2 than in the control group	Cohen's $d = 1.19$ on CDRS-R (estimated from the data obtained from the author)	
				Open trials			
SPARX	Lucassen, Merry, et al. (2015)	Sexual minority youth (e.g., lesbian, gay and bisexual adolescents with elevated symptoms of depression) (ages 13–19); $N = 21$	As above, but content was enhanced to create a "Rainbow" version (e.g., content dealt with heterosexist bullying and problem solving in relation to "coming out")	No control group	Depressive symptoms decreased significantly postintervention and effect maintained at 3 mo	Pre- to posteffect size based on CDRS-R $d = 1.01$	Almost all the participants ($n = 19$, 90.5%) completed at least half the intervention
	Shepherd (2011)	Māori youth with elevated symptoms of depression from two secondary schools in the Auckland region (ages 12–19); $N = 7$	Regular version of SPARX	No control group	Depressive symptoms decreased significantly postintervention and effect maintained at 3 mo	Pre- to posteffect size based on CDRS-R $d = 1.49$	High satisfaction levels reported

Note. BDI, Beck Depression Inventory; CDRS-R, Children's Depression Rating Scale—Revised; ITT, intention to treat; RADS, Reynolds Adolescent Depression Scale.

Parent Management Training Programs

The Interagency Plan for Conduct Disorder/Severe Antisocial Behaviour, 2007–2012 (Ministry of Social Development, 2007) identified parent management training approaches as a core component in addressing significant behavior and conduct problems in children. The Incredible Years (IY) parent program (see Webster-Stratton & Reid, Chapter 8, this volume) was identified as demonstrating strong evidence of success (Menting, de Castro, & Matthys, 2013).

Over the last decade, the New Zealand Ministries of Health and Education have contracted The Werry Centre to support the infant, child, and adolescent mental health (ICAMH) workforce to deliver the IY parent program using a "train the trainer" model. In consultation with the program developer, there has been a series of program enhancements, incorporating Te Ao Māori (the Māori worldview), translating resources into Te Reo Māori (the Māori language), and with sessions delivered with increased cultural support from Māori group leaders. The importance of Māori whānau (extended family networks) has been at the heart of this development.

The provision of culturally safe environments, to provide opportunities for open, honest discussions, and safe and supported opportunities for exploring the interface between cultural and program knowledge is of particular importance. Initial feedback from Māori regarding the value of the cultural enhancements has been very positive (Pipi & Paipa, 2013). Building on this success, a further series of cultural developments has been produced for Pacific communities, including resources translated into four of the main Pacific-region languages (Samoan, Tongan, Cook Island Māori, and Niuean).

A pilot study was conducted to assess the efficacy and cultural acceptability of the IY basic parent program using data provided by the Ministry of Education. These data are based on responses from 214 parents attending the program for at least nine sessions. The program was effective (within group ES from 0.50 to 0.77). The retention rate in the study was 98%. Immediate effects were similar for Māori and non-Māori participants. Parental satisfaction with the program was high, with Māori and non-Māori parents reporting similar levels of satisfaction. However, at follow-up, a small but statistically significant difference between responses by parents of Māori and non-Māori children was detected for the overall child behavior outcome measure ($p = .025$). This suggests that there may be a particular challenge in maintaining the benefits of the IY program for Māori families (Fergusson, Stanley, & Horwood, 2009).

CROSS-NATIONAL IMPLEMENTATION AND TESTING OF MODEL PROGRAMS

Health services in New Zealand are, for the most part, publicly funded and administered locally by 20 District Health Boards (DHBs). The New Zealand specialist ICAMH services sit within the DHB structure and are delivered by multidisciplinary teams of child psychiatrists, nurses, and allied health professionals. They are considered secondary-level services and sit between primary health services, for example, those delivered by general practitioners, and tertiary level services such as acute inpatient services. The government has a strong track record in preventive health services, as well as provision of treatment.

Despite the extensive public health infrastructure in New Zealand, there are a number of challenges in providing mental health services to children and adolescents and their families. There are differences in service delivery geographically, and funding for ICAMH services is quite modest, although New Zealand is known for its efficient use of health care funding (Organisation for Economic Co-operation and Development [OECD], 2011).

In 1998, in an attempt to improve mental health services in New Zealand, the government set the benchmark for access to secondary mental health services for the neediest children and adolescents at 3–5% of the population. Access rates initially were low, and acuity of mental health problems was high. There was little specific training in child and youth mental health for health professionals working in the field (Lucassen, Robinson, & Merry, 2007), including clinical psychology (Lambie & Stewart, 2010). The work in the services was demanding, services were understaffed, and new graduates did not have the requisite skills to do the work required of them, resulting in poor access to evidence-based therapies. There have been a number of initiatives to address the problems.

National Implementation of SPARX

The delivery of evidence-based therapies using technology is one way to increase access when there is pressure on the workforce. In 2012, the Prime Minister of New Zealand initiated a multifaceted project to improve youth mental health, including the development of an e-therapy tool to address depression. In 2013, having shown SPARX to be effective, we made changes to optimize it for mass delivery, and partnered with a leading New Zealand technology research institute and with 24-hour telephone counseling services to deliver the online intervention. We created a free online training module for health professionals (*www.goodfellowunit.org*) and information (including material in the Māori language) for parents.

In April 2014, SPARX was launched across New Zealand by the Prime Minister, signifying one of the first national rollouts of e-therapy for adolescent depression in the world. By the end of 2015, there were 6,406 registered users, including 4,160 young people and 1,220 health professionals. Sixty percent of the adolescents who begin SPARX complete at least one module, and 14% complete four or more modules (i.e., half of the intervention). This is low compared with the original trial (Merry et al., 2012) but high compared with other online mental health interventions (Christensen, Griffiths, & Farrer, 2009; Van Gemert-Pijnen, Kelders, & Bohlmeijer, 2014). We have established an independent clinical advisory group to monitor safety and effectiveness. Software and logistical challenges require ongoing investment highlighting the importance of updating and future-proofing of e-therapy.

Increasing the Profile of Evidence-Based Practices

We regularly run series of workshops around the country, free of charge, profiling therapies with the most evidence of effectiveness. We aim to have charismatic international or local speakers. The target audience, initially secondary care clinicians, has recently been expanded to include those working in primary- and tertiary-level services. Moving forward we aim to utilize the Real Skills ICAMH/AOD (Alcohol and Other Drugs) competency framework (The Werry Centre for Child and Adolescent Mental Health Workforce Development, 2014) to measure the knowledge and skills development of clinicians working in infant, child, and adolescent mental health services.

Providing Information to Guide Clinical Practice

To support clinicians and service managers, a "guide" of evidence-based interventions for the range of mental health and alcohol and drug concerns emerging in childhood and adolescence was published (The Werry Centre for Child and Adolescent Mental Health, 2008, 2010). The publication was, for some time, the most downloaded document on the Centre website but was removed when lack of funding resulted in it going out of date. An update is planned for 2017.

National days are run two to three times a year and provide an opportunity for clinicians to meet and discuss ways they can extend delivery of effective therapies. Workplaces are encouraged to support the transfer of skills into practice by developing "practice" groups after the training day, and to support clinicians' access to appropriate clinical supervision. These days are popular and typically oversubscribed. As an example, in 2015 we facilitated a National Eating Disorders Training Day, which offered training that catered to the range of skills levels of participants, including those with little previous knowledge of treatment of eating disorders. Seventy eight percent of the 55 participants attending the basic level of training reported an increased awareness of the range of strategies available when working with young people with eating disorders, and 75% rated the day *very good* or a 5 on the 1- to 5-point Likert scale. Ongoing support for continuing skills development has been facilitated with links to the Regional Eating Disorders' services, and a discussion forum on the Centre's website.

More recently, the dissemination of information has been supported by The Werry Centre "Journal Club," which is accessible via the website and offers access to peer-reviewed articles, with an associated subsite that is updated regularly to maintain reader interest (*www.werrycentre.org.nz/journal-club#sthash.jhtw5hxy.dpuf*).

Training

Having identified and promoted effective therapies, it was important to develop an infrastructure to deliver training. Our initial focus was on parent management training and on child and adolescent CBT. We utilized the concept of a stepped-care approach, with training tailored to specific groups of health care providers appropriate to the level of care required in their services.

Cognitive-Behavioral Therapy

We used a "train the trainer" approach to introduce CBT for children and adolescents in New Zealand. An initial cohort of 20 people, including Māori and Pacific clinicians, were trained in New Zealand under the Beck Institute. Two of those trained and certified as CBT practitioners with the Academy of Cognitive Therapy, in the United States, then designed and continue to deliver two master's-level postgraduate courses at the University of Auckland. These courses focus on secondary service clinicians.

A more basic training, "Skate into Skills," was developed for primary care clinicians. This provides training in CBT skills suitable for delivery in a first tier of services for uncomplicated and relatively mild symptoms of depression, anxiety, and other disorders. This has proved to be a successful and popular program.

National Rollout of Parent Training Programs

The identification of IY and the national rollout of training has been outlined earlier. To date, 1,411 parent group leaders have now been trained in New Zealand, of whom 21% identify as Māori. Pre- and postratings for training events delivered to the IY workforce during 2015 (in groups ranging from 11 to 59 participants) were analyzed using the Wilcoxon Signed Rank Test. As a result of the training, statistically significant improvements were seen (large ES ranging from 0.57 to 0.67) in participants' knowledge about IY, confidence in their group delivery, understanding of core skills and processes, understanding of collaborative process, and confidence in delivering IY with fidelity.

Following this successful implementation, The Werry Centre was contracted by the Ministry of Health to provide national coordination of The Triple P Primary Care program (Sanders, 1999). This has allowed for the development of a targeted stepped-care approach including Triple P Primary Care, the IY program, and specialist IY teams offering more intensive wraparound support for families who typically face a number of challenges. Parent–child interaction therapy (PCIT), a third program using parent management training techniques, is more intensive and focuses on younger children (Chaffin et al., 2004; Thomas & Zimmer-Gembeck, 2007). The Werry Centre staff members have facilitated several workshops and are currently conducting PCIT research in a predominantly Māori population to assess its acceptability and efficacy in the New Zealand population. If results in New Zealand match those achieved elsewhere, and PCIT is acceptable to New Zealand families, we hope to add this to the training programs outlined earlier, as a more specialized tertiary-level program.

There have been some challenges translating training into practice. Not all those trained go on to deliver the therapy in their clinical services. Those managing clinical services do not always see the relevance or the long-term preventive value of parent training in managing disruptive behavior in children. Needs of the children are sometimes "trumped" by the pressure to manage adolescents at immediate risk of self-harm. Successful implementation of comparatively time-intensive, evidence-based interventions with fidelity will always be balanced alongside the pressure of acute clinical work. Despite these challenges, overall, the training program has been successful and is well regarded.

Postgraduate Qualifications

For almost 20 years, ICAMH clinicians across the country have been able to complete a master's-level postgraduate certificate or diploma via The Werry Centre.

These were designed to teach skills in comprehensive assessments in ICAMH at the certificate level and to deliver therapy in a more sophisticated manner at the diploma level. Research-based master's and doctoral programs are available, and some research projects have been directly relevant to the ICAMH sector. For example, one thesis (Lucassen et al., 2007) resulted in the publication of a CD-ROM-based workbook for student nurses, occupational therapists, and social workers (Lucassen, Merry, & Doherty, 2005). A positive evaluation of this (Lucassen, Doherty, & Merry, 2008) led to the development of an online course that has recently been updated and refined, and is available on The Werry Centre website.

FUTURE DIRECTIONS

The TrACY Study

While The Werry Centre provides training in evidence-based therapies, training in the individual modalities is time consuming and is not accessed by the majority of clinicians. The modular approach to therapy for children with anxiety, depression, trauma, or conduct problems (MATCH-ADTC; Chorpita & Weisz, 2009) was specifically designed to combine common elements of treatments for children with all the common mental health problems seen in ICAMHS (anxiety, depression, trauma-related symptoms, and disruptive behavior) in one protocol, cater for comorbidity, and provide an opportunity to address fluctuations in presenting symptoms that might emerge during therapy (Bearman & Weisz, 2015). MATCH-ADTC training is brief (5–6 days); however, support from a MATCH-ADTC expert/consultant is important to ensure integration into clinical practice. MATCH-ADTC has been shown to outperform usual care and standard evidence-based treatment on several clinical measures (Weisz et al., 2012). We tested whether the superiority of MATCH-ADTC over usual care will replicate in a randomized controlled trial (RCT) in the TrACY (Treatment Approaches for Children and Young People) study in New Zealand (Lucassen, Stasiak, et al., 2015), which was designed to investigate the acceptability and effectiveness for Māori and Pacific people. The study was completed in October 2016 and publication of results is planned for the near future.

The BRAVE–ONLINE Program

In February 2011, Christchurch (New Zealand's second largest city) suffered an earthquake that killed 185 people and damaged the city's and wider region's infrastructure. The numerous and severe aftershocks further traumatized an already vulnerable community. Led by a local child and adolescent psychiatrist, we introduced an evidence-based online program (BRAVE–ONLINE; March, Spence, & Donovan, 2009, Spence, Donovan, March, & Kenardy, 2011) to help children and adolescents deal with anxiety in the postdisaster environment. A pragmatic open trial (Stasiak, Merry, Frampton, & Moor, 2016) demonstrated that 6 months after the intervention, more than half (55%) of the participants no longer met criteria for their primary anxiety disorder. This compares well with previous RCTs, with remission rates of 62% (Spence et al., 2011) and 75% (March et al., 2009). We continue to provide the intervention through primary health care services in the affected region and collect outcome data.

Parenting Programs

There are doctoral studies under way at the Centre investigating therapies designed to support parents. These include the enhancement of IY with an in-home coaching progam to improve outcomes for those likely to drop out of the group program, an investigation of PCIT in a group of very high-risk mothers, and the use of Hoki ki te Rito, a Māori adaptation of the Mellow Parenting Program (Puckering, 2004) in a predominantly Māori population.

Monitoring Outcomes

It is important to have an ongoing system to measure the impact of the various initiatives carried out by The Werry Centre, and by other organizations, on the mental health of infants, children, and young people. Under contract from the Ministry of Health, we carried out a series of studies on mental health "outcomes measures" and made recommendations on measures that could be used to monitor the effectiveness of services (Merry, Stasiak, et al., 2004; Stasiak et al., 2013). As a result of this work, the Health of the Nations Outcomes Scale for Children and Adolescents (HoNOSCA; Gowers et al., 1999) and the Strengths and Difficulties Questionnaire (Goodman, 1997) were recommended for routine use, and the HoNOSCA was adopted as a mandatory outcome measure in ICAMH services nationally in New Zealand. This measure is also mandatory in Australia.

The "stocktakes" undertaken by The Werry Centre to track workforce numbers and access rates have shown a steady rise in staffing of ICAMHs and nongovernment organizations, and rates of access that have risen, with many services now meeting the target of 3–5%. Plans for the future include greater attention to the impact of services on infants, children, adolescents, and their families, and the development of a more formal implementation science framework to measure the impact of the work we do.

CONCLUDING COMMENTS

Having an academic center to promote research into and implementation of evidence-based therapies has led to a broad range of initiatives to improve care for children and adolescents, some of which we have outlined in this chapter. Some approaches have been particularly successful. Founding the work on rigorous research has been important, and we have ensured that our own staff members have expertise in evaluating evidence and in conducting RCTs. Complementing this are staff members with clinical and managerial experience in the ICAMH service setting, to ensure training and research that is relevant for the sector. Maintaining close links with the clinical services and with those to whom they provide services is crucial in ensuring that the work of the Centre remains relevant. We have a regional engagement strategy to ensure links with services around the country. Good relationships with staff in various government ministries are important to ensure that our efforts align with government priorities, and also allow us an opportunity to provide government staff with up-to-date information on promising developments in the field of child and adolescent mental health.

The "train the trainer" model has been a successful strategy, as has partnering with Māori and Pacific communities to ensure that effective therapies from elsewhere can be implemented successfully locally. Implementation also relies on a supportive management structure and the importance of a relationship with those managing the services cannot be underestimated. The challenges of fitting evidence-based practices into clinical practice have been well described (Weisz, Ng, & Bearman, 2014).

It is important not to lose sight of the ultimate goal, which is to provide therapies that lead to improved outcomes for infants, children, and young people and their families. Having systems that allow clinicians and service users to monitor progress and compare this with goals of therapy, and with expected outcomes from data available, will be an important part of ensuring that therapies we deliver result in improvements. Doing this systematically across clinical teams and services is a crucial part of translating evidence into practice. Having input from young people and families, particularly those who have experienced mental health problems has been important in ensuring our focus is appropriate. Having service users' input in all aspects of delivery of mental health care is crucial.

ACKNOWLEDGMENTS

The work reported in this chapter was supported by grants from the Ministries of Health and Education, Health Workforce New Zealand, the Health Research Council (Nos. 13/331, 12/926, 99/039), the Rotary Club of Downtown Auckland, Cure Kids, and the Duke Family.

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CHAPTER 24

A National Approach to Improving Child and Adolescent Mental Health Care

The Children and Young People's Improving Access to Psychological Therapies Program in England

Stephen Scott

In England and Wales, as in the United States and nearly all of the developed world, the proportion of people—both children and adolescents and adults—with mental disorders at a sufficient severity level to warrant a diagnosis who get any kind of specialist mental health service is no higher than 25%. In some populations, such as adolescent males, it is typically below 15% (Green, McGinnity, Meltzer, Ford, & Goodman, 2005). Even when they do receive a service, many receive treatments that are not evidence-based. The causes of this are twofold. First is underinvestment in mental health services. Currently in England and Wales (2016) the average spent per head of population ages 0–18 years on mental health is around £90 ($120), of which around 50% goes to inpatient and forensic services, leaving just £40–50 ($55–70) per head for all outpatient services. This is not so much lean and mean, but more like emaciated, in comparison to pediatric services for children's physical health conditions. Second, even when people do get to services, often the treatments offered are not evidence-based and not delivered with fidelity. This is hard to quantify, because there have been no nationwide surveys in the last decade; on the other hand, the number of non-evidence-based treatments that are flourishing for diagnosed mental disorders is considerable, including sensory integration therapies, music therapies, art therapies, counseling for conduct problems, and so on.

Numerous inquiries into British Child and Adolescent Mental Health Services (CAMHS; e.g., Kennedy, 2010; Children's Commissioner, 2016) revealed several problems with service delivery. Many services were judged by young patients to be falling short of being "friendly" and were seen by service users, families, and referrers as inaccessible in terms of location and time, and the problems had to be extremely severe before access was considered. Additionally, services were commonly seen as stigmatizing, especially for minority groups, were poor at involving carers and young people in decision making, and were designed around the preferences of service providers rather than the children/young people (McGorry, Bates, & Birchwood, 2013). Interventions were seen as biased toward late as opposed to early intervention, with an absence of preventive interventions or emphasis on building resilience. Data to monitor the effectiveness of existing services nationally and to support the planning of services were lacking.

From the point of view of those delivering the service, the shortcomings, while recognized, were seen as attributable to quite a different set of causes. CAMHS struggled with more referrals than they could cope with, significant shortages of trained professionals, with many redundancies and vacancies, as well as relatively poorly trained existing staff. Because of the overwhelming number of referrals, few services could offer a self-referral route of access, and there were few resources to smooth transition between child and adult services, and between community and specialist hospital services. Resources were not available for data collection, so performance improvement based on self-critical professional practice proved difficult. Informal national data collection on referral rates (NHS Benchmarking Network, 2013, 2015) and research reports on specific populations (Bor, Dean, Najman, & Hayatbakhsh, 2014; Fink et al., 2015), confirmed an increasing prevalence and presentation of mental health problems in the community. On top of this, there was the lack of a culture emphasizing the delivery of evidence-based services with ongoing improvement in the quality of practice through supervision after initial training (Rotheram-Borus, Swendeman, & Chorpita, 2012). Finally, there were poor outcome accountability mechanisms not only to underpin service planning but also to improve clinical decision making at the individual therapist–client level, and to provide early identification of young people at risk for treatment failure (Miller, Hubble, Chow, & Seidel, 2015).

On the positive side, several government reports did recognize the need for improved child and adolescent mental health services. The Mental Health Strategy released in 2011 adopted a quality-driven, life-course approach to mental health (Department of Health, 2011). At the same time, a strategy specific to talking therapies was released with an explicit commitment to increase access to National Institute for Health and Care Excellence (NICE)-approved, best-evidenced psychological therapies for children/young people (Department of Health, 2012). NICE is an authoritative independent body that evaluates the evidence for interventions across the whole of medicine (*www.nice.org.uk*). The chief medical officer's annual report (2012) focused exclusively on childhood prevention (in other years, it focused on subjects such as cancer, diabetes, etc.) and was entitled "Our Children Deserve Better: Prevention Pays." It noted that four or more adverse childhood events (ACEs—mostly abusive parenting), were associated with 400–800% increases in risky health behaviors and poor mental health in adulthood, such as smoking, excessive drinking, obesity, incarceration, anxiety, and depression. ACEs are also associated with severalfold increases in physcial illnesses such as cancer, lung disease, and cardiovascular events, and over double the chance of dying before age 65 years (Felitti et al., 1998; Brown et al., 2009; Bellis, Lowey, Leckenby, Hughes, & Harrison, 2014). Following this, there was a Department of Health policy document, "Future in

Mind" (2015), devoted to child and adolescent mental health, which, taking on board the strictures noted earlier, called for (1) early intervention; (2) increased access—it also noted that, at best, only 25% of children with mental disorders get seen; and (3) workforce transformation to use more evidence-based interventions. These recommendations drew on a wide range of independent evidence, including that showing improved outcomes from better access to evidence-based treatments (Asarnow et al., 2005) and the moderate superiority of evidence-based therapies over treatment as usual (Weisz et al., 2013).

OVERVIEW OF THE CHILDREN AND YOUNG PEOPLE'S IMPROVING ACCESS TO THE PSYCHOLOGICAL THERAPIES PROGRAM

To address some of these issues, in 2011, the Department of Health initiated a program of service transformation in CAMHS in England—the Children and Young People's Improving Access to Psychological Therapies (CYP-IAPT) program. The terminology was not new, since a path had already been blazed a few years previously in adult mental health by an initiative called simply Improving Access to Psychological Therapies (IAPT). The adult IAPT program had been launched 3 years earlier with the aim of making evidence-based psychological therapies for depression and anxiety widely available in the National Health Service (NHS). Interestingly, much of the push for this came from outside the mental health domain, from Richard Layard, an economist concerned with happiness and well-being, who forcefully drove the initiative forward with a leading adult clinical psychologist, David Clark, and together they set up the adult IAPT (Layard & Clark, 2014). This program was founded on a number of principles: (1) Only one evidence-based therapy would be offered, namely, cognitive-behavioral therapy (CBT) for anxiety and depression; (2) a new cadre of therapists would be trained in CBT at two levels of intensity, lower and higher; (3) outcomes would be monitored on a session-by-session basis for all cases, with supervisors called in if clients failed to progress; (4) the service would stand independently of the general adult mental health service and accept referrals from not only family doctors (general practitioners) but also directly from individuals themselves. While this last principle of separation from catchall adult mental health services could potentially fracture joined-up service delivery, it allowed far greater central direction and control than would have been the case if the IAPT workers had been embedded in existing services. Generally speaking, the adult IAPT initiative has been seen as a success, and has certainly led to far more people be treated than would otherwise have been the case. Prior to the adult IAPT initiative, pre–post routine outcome monitoring was not generally applied, being collected on 40% of cases at best (Clark, Fairburn, & Wessely, 2007), whereas after the introduction of IAPT it has risen to 97% of cases, using both patient- and clinician-rated measures (Health and Social Care Information Centre [HSCIC), 2014).

What do the more complete adult IAPT data tell us? Nationally, of patients who have finished a course of treatment in IAPT (liberally defined as having attended at least two sessions), 45% recover (based on a strict double criterion—dropping below the clinical threshold for both anxiety and depression) and a further 16% show reliable improvement that falls short of full recovery (HSCIC, 2014). However, there is considerable regional variability. About one-third (70 of 211) of areas now report recovery over 50% and some are consistently over 60% (*www.hscic.gov.uk*). This shows what the IAPT model can achieve in services with a sufficiently large and appropriately trained workforce that benefits from excellent clinical leadership. The adult IAPT service is now training therapists in the other therapeutic modalities that NICE recommends for adult depression (couple therapy based on behavioral principles for 15–20 sessions over 5 to 6 months); interpersonal psychotherapy; for people with mild to moderate depression who decline an antidepressant, CBT, interpersonal psychotherapy (IPT), and behavioral couple therapy; and counseling of an unspecified type for six to 10 sessions over 8–12 weeks or brief psychodynamic psychotherapy.

The challenge for the next phase is to raise other areas to the same level. Through monitoring overall recovery rates in each area, strong efforts are being made to investigate why treatments are less successful and to take appropriate remedial action.

The CYP-IAPT initiative differed from its adult "parent" in a number of respects. First, it did not create a service that was separate from mainstream mental health services. Instead, it aimed to improve the functioning of existing CAMHS (the language was "to transform" services provided by the NHS) by taking selected staff members from a service, then after training them in the IAPT approach, to return them into their service of origin, where the intention was that they should lead modernization and change. A second difference is that in keeping with contemporary political trends, CY-IAPT was to include some staff members from local authorities and the third sector (i.e., charity and voluntary organizations) rather than only from the NHS, since they see a substantial proportion of children with mental health difficulties and should be encouraged to provide evidence-based services. The mechanism for this was that partnerships of service providers would be created together with commissioners of services, so that there should be some coherence of service organization and delivery in each area. Therapies would not be confined to CBT—about which more later. From its inception, the program was highly ambitious, seeking a change in culture and practice to improve access to evidence-based psychological therapies in an environment that included participation by children, young people, and their families in service design and in steering their own treatment. The initiative built on lessons learned from its adult counterpart by including routine outcome monitoring. The CYP-IAPT program was initially given a modest budget of £52 million ($75 million) over 4 years in 2011.

PUTTING IMPLEMENTATION SCIENCE INTO PRACTICE

Implementation of the CYP-IAPT programme was founded on implementation science ideas (Fixsen, Blase, Naoom, & Wallace, 2009; Fixsen, Blase, & Van Dyke, 2011) based on the philosophy set out by the National Implementation Research Network (*http://nirn.fpg.unc.edu*) Its key principles are as follows:

1. Interventions should be usable (i.e., not only demonstrate the feasibility of the intervention's ability to improve outcomes but also they should be well

operationalized) so that (a) staff are available to train them well, (b) they should be learnable by clinicians, (c) they should be practically doable once therapists have learnt the new therapeutic modality or skills, and (d) they should be assessable in clinics and services.

2. Implementation should take place in stages: (a) exploration, (b) installation, (c) initial implementation, and (d) full implementation. These stages require thinking through the right activities to increase the likelihood of their success.

3. Drivers of implementation should be explicitly recognized, as they are key components of the infrastructure and capacity that influence the successful use of an innovation. They include competency drivers, organization drivers, and leadership drivers. Within each, specific implementation-informed processes should be made explicit and used to improve staff competence and confidence, and to create organizations and systems that enable the innovation to be sustained and be used with fidelity. Processes should be established that actively use data to manage change.

4. Improvement should be driven in cycles based on the plan–do–study–act cycle. Improvement cycles are iterative processes by which improvements are made and problems solved. They may be used for rapid-cycle problem solving, early testing of new ways of working, or improving alignment in systems.

5. Implementation teams should be set up that typically comprise three to five people who are accountable for seeing the implementation process through to full implementation. They actively integrate implementation stages, implementation drivers, and improvement cycles in service of implementing, sustaining, and sometimes scaling up usable interventions, leading to improved client outcomes.

Selection of Interventions Able to Improve Outcomes

To achieve this aspect of the first principle, best-evidenced therapies with standardized curricula were initially chosen, as recommended by NICE. At first there were two treatment modalities: CBT for anxiety and depression and behavioral parent training for conduct problems, both NICE approved. However, three further therapies were added later: generic systemic family therapy for children/young people with depression, self-harm, conduct disorder, and eating disorders; interpersonal psychotherapy (Jacobson, Mufson, & Young, Chapter 5, this volume) for young people with anxiety or depression; and counseling for a range of milder problems. While the evidence for CBT and parent training is very strong and NICE approved, interpersonal psychotherapy has fewer trials with youth, mainly by the program developer team, but since 2015 it has been NICE approved. Certainly, not all young people feel comfortable with CBT, and interpersonal psychotherapy may be seen as an alternative. Generic family therapy is not approved by NICE for conditions other that anorexia nervosa and depression, and has less evidence for other presentations (Fonagy et al., 2015; Eisler & Lask, 2015); this is not the case for some specific brands of family therapy, such as functional family therapy or multisystemic therapy (Henggeler & Schaeffer, Chapter 12, this volume), both of which have rather strong evidence bases. There is modest evidence for counseling in milder forms of anxiety and depression (Fonagy et al., 2015). Why these less strongly evidence-based therapies were chosen is not clear.

Supporting Availability and Training of Staff to Learn the Therapies

To achieve this aspect of the first principle, local CAMHS were offered training for their therapists for free. So long as they released the personnel for 3 days a week during university term-time, they were provided with funds to hire replacement staff for a whole year. The program selects, through a competitive process, commissioner and provider partnerships that can articulate that they understand and show they are ready to make a culture change, and are willing to initiate training of managers and supervisors to ensure services are ready to support practitioners in routine outcome monitoring and the delivery of evidence-based interventions. Typically, the ratio of applications to successful awards to collaboratives was about 2:1, and geographical cover across the country was important—the degree of cover to date is described in the progress section below.

Practitioners were trained in the evidence-based practices (EBPs) using the national curricula developed by expert consensus and implemented by the Healthcare Environment Inspectorates (HEIs). The curricula draw on the modular approach pioneered by Chorpita and Weisz (Chorpita, Bernstein, & Daleiden, 2011; Weisz et al., 2012). This approach recognizes that children present with multiple problems and disorders, that treatment needs to evolve within episodes of care, and that a clinician requires expertise in many EBP protocols. In the first term of the yearlong program, all staff members are trained together in whatever will be their specialties (e.g., CBT or parenting program) in terms two and three. This, however, is not the same as the full equivalence given to each modality in the Chorpita and Weisz approach, which is being introduced in some areas in England. The philosophy underlying the therapies taught is that trainees should have a strong grasp of generic principles rather than slavishly follow a particular “brand.” This is relatively straightforward for CBT and behaviorally based parent training, although in the latter case the group approach follows one of the well-evidenced programs to date, The Incredible Years (Webster-Stratton & Reid, Chapter 8, this volume); trainees also learn individual parenting training that is generic but similar to “brands” such as Helping the Noncompliant Child (McMahon & Forehand, 2005) or parent–child interaction therapy (Zisser-Nathenson, Herschel, & Eyberg, Chapter 7, this volume). At the end of their year, trainees take University examinations to gain a diploma. The examination process is reasonably stringent, with written essays, case reports, and presentation of video taped consultations; each year, some candidates do fail, underlining the rigor of the quality assurance.

In addition, the program developed a range of systems and products to support the demonstration of the quality of the courses and services. A National Accreditation Council made up of key stakeholders, including existing accreditation and quality bodies, developed a framework to accredit courses and also an overarching quality framework, which identified the key markers underpinning the values and qualities of effective service provision (York et al., 2013). The framework built on existing quality assurance mechanisms rather than burdening frontline agencies; trainings were aligned with existing accreditation bodies, such as the British Association of Behavioural and Cognitive Psychotherapy.

Staged Implementation and Recognition of Drivers

Staged implementation (the second principle) was achieved first by following on the learning experience in adult IAPT, and second by starting with three areas in England, then gradually increasing that number over the ensuing years. For the competency, organizational, and leadership drivers (the third principle), competency and fidelity were promoted by expecting trainees to bring video recordings of their actual clinical work to supervision every week. Organizational implementation was promoted by having a separate course to train supervisors to ensure that they drive up the quality of their staff members. Leadership was promoted by having a third training course, this time for the managers, so that they understood the wider picture and could support implementation.

Cycles of Improvement: Routine Outcome Monitoring

To implement the fourth principle, routine outcome monitoring was key. Outcome measures were a mixture of individualized goal and symptom measures suitable for all those presenting to community CAMHS. There was, as it were, a sting in the tail for organizations that took up the free training, since session-by-session outcome monitoring was to be used on not only the cases seen by the CYP-IAPT trained therapists but was also to be used on all cases seen by the organization, a far greater undertaking. Outcome measures were patient feedback collected on a continuous basis, typically involving a scale or questionnaire administered before each therapy session in order to gauge the severity of the patient's problems, his or her sense of progress toward his or her goals, and the extent to which the patient's expectations in relation to his or her treatment was met. The advantages of routine outcome measures (ROMs) have been frequently discussed in the literature (e.g., Bickman, Kelley, Breda, de Andrade, & Riemer, 2011; Miller et al., 2015). The ROMS used can be seen at *www.corc.uk.net/resources/measures*. An important innovation is that measures are not only taken pre- and posttreatment, but are intended to be taken session by session. While initially some practitioners were suspicious of this, training sessions support their use as a therapeutic tool to share with the young people and, where relevant, their parent or caregiver, so that a joint alliance is made on whether or not treatment is working and how to take it forward.

Staff members are supervised in the workplace using ROM and videotaping in order to ensure that well-defined specific tasks are mastered by trainees, that their performance is followed by immediate feedback, and that there is opportunity for repetition; the biases normally affecting learning (e.g., confirmatory and hindsight bias) should be reduced so that trainees have time to review their own behavior based on outcome feedback, with support to develop specific plans for improvement (Tracey, Wampold, Lichtenberg, & Goodyear, 2014). The close collaboration of trainers at the HEIs, clinical supervisors, service leads, and the central CYP-IAPT implementation team are critical in ensuring that high standards of competence are reached. Clinical delivery organizations were provided with substantial funds (£40,000/$55,000) to upgrade their information technology and computing systems so that videotapes of clinical work could easily and securely be uploaded, and clinicians were provided with tablets to enable simple recording of routine outcome monitoring.

While there were not sufficient funds to set up formal implementation teams, as laid out in the fifth principle, there were a number of central staff members appointed to lead ongoing improvement. For example, a senior clinical psychologist went round to each team helping members make the shift from seeing routine outcome monitoring as a pointless chore to helping them use them as a therapeutic tool during each session with the clients to improve the relationship and interrogate with the family factors that were making therapy go well, if that is what the young person and/or his or her caregiver reported or, alternatively, have a frank discussion about what was not going well or what were the barriers to progress.

User Participation

A further design feature to ensure realistic implementation was that user participation was mandated in not only in individual treatments through outcome monitoring, but also service design and delivery. Children and young people and their parents or caregivers were involved at both national and local levels to help steer the program, from young people's panels being part of the interview selection process for awarding grants to collaboratives to reviewing measures and procedures. A major theme of the initiative is the desire to empower children/young people to take control of their care, to engage in shared clinical decision making, to establish treatment goals appropriate to them, to choose the route to health that is best for them—and through this active engagement to strengthen their agency and trust. Participating in service design, understanding and modifying treatment progress via patient-rated outcome measures, and even participating in the training of practitioners and managers all serve to enhance a sense of agency. While the participation of service users in clinical decision making is known to improve the efficiency of health care provision across all medical specialities (Mulley, Trimble, & Elwyn, 2012), in mental health it has a special function in contributing to the reestablishment of trust in socially transmitted information that is so often lost for children/young people whose experience of social adversity—and their experience of health care—has made them suspicious of others' motives and the information they impart. Responding to children/young people's preferences, feelings, and thoughts, and showing them that therapists are hearing and thinking about what they are experiencing, helps them to enhance their capacity to absorb and respond to information both in therapy and in their wider social world (Fonagy & Allison, 2014).

Internet Therapies

As noted in the chapter opening, only about one-fourth of children and adolescents with difficulties at the level of diagnosable disorder get any kind of specialist treatment in England and Wales (or indeed in the United States or Western Europe). A major driver of the CYP-IAPT initiative was, as its name suggests, to increase access. Most CAMHS services can only be accessed through a referral letter from the family doctor, and waiting lists can be very long. The review by the Children's Commissioner (2016) found that 28% of referred children were not allocated any service; while some services saw children within 14 days, in one major conurbation the average wait was 200 days. Overall referral rates were between 0.28 and 0.55% of the population; the authoritative Office of National Statistics survey referred to earlier found that 10% of the population had a diagnosable disorder. Therefore, in addition to increasing provision of more effective interventions, part of the aim of this initiative was to increase availability, first through allowing self-referral by families or young people, and second by beginning to train staff to support the delivery of a range of low-intensity online Internet interventions. The e-learning is supported by MindEd, a mental health resource including free e-learning sessions for all those working with children/young people, as well as for young people and parents directly, see *www.minded.org.uk*.

PROGRESS AND EVALUATION

As of the start of 2016, the program included 94 partnerships, working with services covering 82% of the population ages 0–19 nationally. Geographical coverage of the service transformation program is increasing, with the aim of achieving 100% coverage by 2018. In 2014/15, 372 therapists, 86 supervisors, and 51 service leads were trained as part of the program. There has been no formal evaluation of CYP-IAPT in the sense of an independent agency looking at processes and comparing outcomes to management as usual. However, a relatively comprehensive internal audit has been undertaken involving 12 CAMHS partnerships, with 6,803 children/young people from 11 services and 361 clinicians from 43 teams surveyed by in-house questionnaires, and the Modified Practice Attitudes Scale (MPAS; Borntrager, Chorpita, Higa-McMillan, & Weisz, 2009) was used to measure attitudes about evidence-based therapies (e.g., “I am willing to use new and different types of treatments if they have evidence of being effective”). To measure attitudes toward feedback, the Attitude to Feedback scale was used from the Routine Outcome Assessment (ROA; Willis, Deane, & Coombs, 2009) questionnaire (e.g., “Providing feedback from outcome measures will help the clinician and service user work more collaboratively in treatment”). In addition to the questionnaire data, an interview was developed using the Tailored Design Method (Dillman, Smyth, & Christian, 2008) capturing demographic characteristics and experience of embedding the principles of CYP-IAPT. Interviews were carried out with 92 staff members, 45 children/young people, and 42 parents across the 12 CAMHS partnerships (Edbrooke-Childs, O’Herlihy, Wolpert, Pugh, & Fonagy, 2015).

The key observable benefit of CYP-IAPT was in improved efficiency. The time between referral and assessment decreased by 73%, from 239 days in 2010 to 64 days in 2014. The average number of days between assessment and discharge also decreased by 21%, from 299 pre-CYP-IAPT to 235 in 2014. Interviews revealed that the staff members attributed this improved throughput to the use of routine outcome monitoring. The audit revealed improvements in accessibility through self-referral routes, single points of access, outreach services, and evening and weekend appointments. The average number of accepted self-referrals increased by 195%.

Services within the program (the whole service, not just the clinician trained by CYP-IAPT) were more evidence-based in terms of the treatments they offered; thus, overall, 86% (*n* = 189/281) reported that they used the NICE-recommended treatment in 70% of their cases or more, and 89% (299/335) agreed that their service was working toward the delivery of evidence-based psychological treatments; and clinicians described feeling more confident in choosing and delivering evidence-based treatments. While the majority of clinicians trained in NICE-recommended therapies were, according to the clinicians themselves, still offering the therapy (83%) and still receiving supervision (66%), a substantial proportion of children/young people in the service, 39%, were still not receiving the recommended evidence-based treatment, chiefly because many of the staff members within the services had not been the ones trained by CYP-IAPT. Interviews with staff members confirmed the increased use of outcome measures, and that session-by-session monitoring supported shared decision making. In figures, 76% (n = 209/277) used outcome measures at assessment with at least 70% of cases, 43% (n = 119/276) used outcome measures on a session-by-session basis with at least 70% of cases, and 71% (n = 195/274) used outcome measures at review or case closure with at least 70% of cases. The average attitude to feedback was 4.51 (n = 318, SD = 0.93, range = 1.13–6), which means that clinicians slightly agreed in general with providing feedback based on outcome measures to CYP and parents. The increased proportion of cases closed by mutual agreement (from 34 to 56%) may have been in part a consequence of improved engagement. But the proof of the pudding will be when sufficient data have been collected on pre- and posttreatment symptom changes and the percentage of cases recovering; there should also be the possibility to examine what is going on in services, where recovery rates are low, and offer them support to turn the situation around, which has happened in the adult IAPT. For example, recovery from adult depression was running at 38% in one service, lower than the mean, but a year after service intervention to drive improvement, this was raised to 62% (D. Clark, personal communication, March, 2016).

The audit revealed several challenges to the implementation. First, each local service only sends five therapists to be trained over the year, leaving the great majority untrained in this approach. It is hoped that through supervisors and managers gradually pushing forward evidence-based approaches, the remaining staff will take up evidence-based programs. One of the positive aspects of the CYP-IAPT initiative is that it is not just the cases seen by the IAPT-trained therapists who have to have routine outcome monitoring, but all the cases seen by the service. This is beginning to set in motion a culture of examining effectiveness across all staff members delivering therapies.

The audit revealed that a major failure was in information technology to support adequate, routine outcome monitoring. Concurrent cost-efficiency initiatives and competing organizational changes, including the tendering of services during the implementation period, substantially disrupted the process at a number of sites. Loss of staff members to training while they were released to CYP-IAPT for the year, then loss posttraining when many moved on was a source of frustration to managers and clinicians. Increasing referrals and reductions in staffing commonly led to a situation in which demand outstripped capacity, which in turn affected staff morale. Practitioners wished for more protected time after training to be able to embed new practices and learn new systems and processes. Routine outcome monitoring generated some anxiety among practitioners, particularly when service users did not show positive change in outcome measures. Reflecting on the audit results, it seems clear that the joint work by universities and partnerships has brought about significant benefit in terms of service transformation and improvement, but that significant challenges remain for the days ahead.

The program continues to make a concerted effort to empower young service users by establishing their position as equal partners in the therapeutic relationship.

Educating not just clinicians but service managers and clinical leads in the principles of shared decision making is generally now considered one of the major achievements of CYP-IAPT. This led to initiatives such as the Mental Health Services Passport (*www.england.nhs.uk/mentalhealth/2015/10/15/passport-brief-yp-mh*), developed by young people and parents/caregivers with NHS England as part of the CYP-IAPT program. The passport provides a summary of a young person's time in a service. The information will be owned by the young person, for it to be shared with any future services if the young person so wishes.

Furthermore, the program supported the participation of parents and caregivers alongside young service users, to enable their participation in supporting their child's treatment and in service delivery and design. The young people's mental health charity YoungMinds was commissioned to consult with parents and caregivers to develop a resource toolkit for parents and carers, service providers, and commissioners. This led to the establishment of a large and diverse network for parents and carers and the launch of the "Parents Say" Participation Toolkit (*www.youngminds.org.uk/psaytoolkit*).

FUTURE DIRECTIONS

The program management required to deliver the transformation initiative was perfectly positioned to support the further development of policy at the Department of Health and NHS England. Following a strategic review of CAMHS provision jointly undertaken by the Department of Health and NHS England (Department of Health & NHS England, 2015), CYP-IAPT became the foundation to a wider transformation program that includes funds for an increased workforce and improved access following the announcement of further resources in the 2014 Autumn Statement (£30 million/$45 million) recurrent for the treatment of eating disorders and the 2015 Spring Budget (£1.25 billion ($1.75 billion) over 5 years for children/young people's mental health. These recent announcements should help ensure that the principles of CYP-IAPT, namely, collaborative, outcome-focused EBP, will be extended to community-based eating disorder services and guide the building of capacity and capability across systems, which by 2020 should deliver at least 70,000 more treatment episodes per year for children/young people. The goal is that CYP-IAPT will cover 100% of the country and will incorporate perinatal care.

Every area of England must now develop a Transformation Plan to improve children's/young people's mental health care that demonstrates that children/young people and their families/caregivers have been involved in developing the plans and participating fully in future commissioning and service development. There is a requirement for services to demonstrate how they will monitor outcomes, including regular feedback from children/young people, their families, and in clinical supervision. As well as geographical expansion, the range and choice of evidence-based treatments and interventions available will be expanded, with new curricula covering counseling; developmental, infant, and child mental health interventions for children ages 0–5; therapies for children/young people with mental health problems and autistic spectrum disorder or a learning disability; and combination therapies covering prescribing to support psychological interventions, as well as improving the knowledge base of nonprescribers in relation to psychopharmacological treatments.

All this is well and good, but at present there is no budget for a formal evaluation, which must surely be essential. It will need to be carried out by a body independent of the service providers or commissioners, and will need to examine services that have not been exposed to CYP-IAPT (e.g., those in Scotland), as well as comparing and contrasting the late adopters, or areas that have been put to adopt the principles, compared with high adopters. Recovery rates and rates of improvement need to be compared with epidemiological surveys of cases receiving no treatment (which still applies to the majority of cases in the country), alongside process variables such as measuring the skill and fidelity with which therapies are delivered. All this should be feasible, and the children and young people deserve nothing less.

CONCLUDING COMMENTS

The CYP-IAPT initiative has attempted to transform services nationwide. It has been feasible due to the centralized nature of government in England but should be replicable at smaller level of governments, such as states or similar administrative areas. It has applied modern methods to a field that has been slow to change in general, perhaps due to the many models that exist about how relationships and behavior can be improved and the great variety of trainings in these. By emphasizing interventions proven to work, and recording how these are affecting client progress, practice has been changed considerably from a more old-fashioned model of clinicians doing just what they felt comfortable with and are hoping over the months that clients will improve. The program has benefited greatly from advances in implementation science, a field that barely existed 20 or 30 years ago.

In summary, the process of implementation appears to have acquired its own momentum, with the principles of CYP-IAPT now organizing the transformation of services initiated following the commitment of new resources for children/young people's mental health. It is be hoped that in 5 years' time, the majority of services in England will be able to have data on the effectiveness of the treatments that they give to children and young people experiencing mental health problems.

ACKNOWLEDGMENTS

I am grateful to Peter Fonagy, national clinical lead; Kathryn Pugh, program lead; and Anne O'Herlihy, project manager in CYP-IAPT, for sharing previous accounts of the program, on which this account is based.

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CHAPTER 25

The International Dissemination of the Triple P–Positive Parenting Program

Matthew R. Sanders and Karen M. T. Turner

OVERVIEW OF AN EVIDENCE-BASED PARENTING INTERVENTION WITHIN A PUBLIC HEALTH MODEL

There is increasing international recognition of the importance of service providers and agencies delivering evidence-based interventions to promote the well-being of children and youth. The main aim of these providers is to prevent serious problems involving young people, including major mental health problems, child maltreatment, antisocial behavior, and drug and alcohol abuse (Graeff-Martins et al., 2008). Policy initiatives from regions as diverse as North and South America, Europe and the United Kingdom, and the Middle East and Australasia have led to unprecedented interest in the role of parenting in the promotion of children's well-being and the prevention of maltreatment and mental health problems in children. The imperative for evidence-based practice has been detailed in documents such as the World Health Organization's recommended programs for global violence reduction (WHO, 2010), the United Nations task force on family-based treatment for prevention of substance abuse (United Nations Office on Drugs and Crime [UNODC], 2009), the Washington State Institute for Public Policy cost–benefit analyses (Lee, Aos, & Pennucci, 2015), Blueprints for Healthy Youth Development (Mihalic & Elliott, 2015), and service delivery guides to evidence-based interventions (KidsMatter, 2012).

Concern about the need for parenting programs stems from the high prevalence rates of social, emotional, and behavioral problems in children. Evidence from behavior genetics research, as well as epidemiological, correlational, and experimental studies, shows that parenting practices have a major influence on children's development (Biglan, Flay, Embry, & Sandler, 2012; Collins, Maccoby, Steinberg, Hetherington, & Bornstein, 2000). Risk factors such as poor parenting, family conflict, and relationship breakdown strongly influence children's risk of developing various forms of psychopathology. Specifically, abuse, aversive interactions, and lack of a warm positive relationship with parents; insecure attachment; harsh, inflexible, or inconsistent discipline practices; inadequate supervision of and involvement with children; parental conflict; and parental psychopathology (e.g., depression) increase the risk that children will develop major behavioral and emotional problems (see Biglan et al., 2012). Parenting interventions, derived from social learning, functional analysis, and cognitive-behavioral principles, are among the most powerful interventions available and the treatment of choice for a number of social, emotional, behavioral, and developmental problems in children (Sanders, 2012).

Despite the strength of the evidence, still too few parents who might benefit from evidence-based parenting programs (EBPPs) actually participate. Although access to parenting intervention has improved significantly in many countries, EBPPs are not widely available outside of major metropolitan areas or in disadvantaged communities. Poor participation in parenting programs is a formidable barrier to widespread effective implementation of parenting support. A survey of 721 working parents in the United Kingdom (Sanders, Haslam, Calam, Southwell, & Stallman, 2011) found that only 2% of parents had completed a parenting program, yet 90% said they would do one if it was offered at work. Furthermore, although parenting groups are widely advocated in the parent training field, only a minority of parents (i.e., 27% of parents) wanted to participate in a group program. In fact, no delivery modality (e.g., group, individual, seminar, Web-based, over the telephone) was accounted for by more than 30% of parents. These findings confirm that contemporary parents are looking for alternative, flexible ways of accessing parenting advice. The major consequence of low program availability, limited program options, and nonoptimal participation rates is inadequate program reach.

Limited program reach means that most families who could benefit from parenting programs do not access them. When relatively few families derive the benefits of EBPPs, the potential of these programs to reduce the prevalence of problematic outcomes for children in the entire population is markedly weakened. Effective dissemination of EBPPs is critical for programs to have any significant community impact. Of the parent training programs that have been disseminated to date, many have been delivered late in the developmental trajectory as interventions for children with diagnosed conduct problems or for high-risk children already showing signs of behavioral disorder, or for families notified for abuse or neglect, rather than as prevention programs. We contend that to reduce prevalence rates of family dysfunction and emotional and conduct problems in children and adolescents, a population approach that addresses the broader ecological context of parenting (e.g., Biglan, 1995; Sanders, 2011), as well as the knowledge, skills, and confidence of parents is required. The Triple P—Positive Parenting Program (Triple P) is an example of a multilevel parenting and family support system.

WHAT IS TRIPLE P?

Triple P was developed as a multilevel system of parenting intervention to improve the quality of parenting advice available to parents (see Sanders, 2012). The system aims to prevent severe social, emotional, behavioral, and developmental problems in children and adolescents, and child maltreatment, by enhancing the knowledge, skills, and confidence of parents. It incorporates five levels of intervention on a tiered continuum of increasing strength for parents of children from birth to age 16. The multilevel suite of programs is designed to create a "family-friendly" environment that supports parents in the task of raising their children (see Table 25.1). It specifically targets the social contexts that influence parents on a day-to-day basis. These contexts include the mass media, primary health care services, child care and school systems, worksites, religious organizations, mental health and substance abuse services, and the broader political system. The multilevel strategy is designed to maximize efficiency, to avoid waste and overservicing, and to ensure that the program has wide reach in the community. It also allows for choice in the intensity and delivery modality to match programs to families' needs and preferences.

The empirical basis of Triple P is not the focus of this chapter and has been detailed extensively elsewhere (e.g., Sanders, 2012). The Triple P system has been featured in various meta-analyses that have concluded the interventions are effective in improving outcomes for children and parents (e.g., de Graaf, Speetjens, Smit, de Wolff, & Tavecchio, 2008a, 2008b; Nowak & Heinrichs, 2008; Sanders, Kirby, Tellegen, & Day, 2014; Wilson et al., 2012). Statistically and clinically significant effects for all delivery formats and program variants have been found for children's social, emotional, and behavioral outcomes; parenting practices; parenting satisfaction and efficacy; parental adjustment; the parental couple relationship; and observed child and parent behavior. The positive outcomes demonstrated for each of the five Triple P levels of intervention provide support for a multilevel, multidisciplinary system of parenting programs, including prevention and treatment options, to increase timely access to cost-effective services promoting child, parent, and family well-being.

Positive Parenting Principles and Strategies

The five core positive parenting principles that form the basis of the program were selected to address specific risk and protective factors known to predict positive developmental and mental health outcomes in children (see Table 25.2). Table 25.3 shows how these principles are operationalized into a range of specific parenting skills; see Sanders (2012) for a more complete overview.

Program Development, Implementation, and Quality Assurance

A public health intervention requires a range of high-quality practitioner and parent resources. Practitioner resources specific to each level of the intervention (Levels 2–5) and program variants (e.g., Stepping Stones Triple P, Teen Triple P) include comprehensive manuals that detail session activities, PowerPoint presentations,

TABLE 25.1. The Triple P System of Parenting and Family Support

Level of intervention	Target population	Intervention methods	Facilitators
Level 1 Communications strategy • *Universal Triple P* • *Stay Positive*	All parents interested in information about parenting and promoting their child's development.	Coordinated communications strategy raising awareness of parent issues and encouraging participation in parenting programs. May involve electronic and print media (e.g., brochures, posters, websites, television, talk-back radio, newspaper and magazine editorials).	Typically coordinated by communications, health, or welfare staff members.
Level 2 Health promotion strategy/brief selective intervention • *Selected Triple P* • *Selected Teen Triple P*	Parents interested in parenting education or with specific concerns about their child's development or behavior.	Health promotion information or specific advice for a discrete developmental issue or minor child behavior problem. May involve a group seminar format or brief (up to 20 minutes) telephone or face-to-face clinician contact.	Practitioners who provide parent support during routine well-child health care (e.g., health, education, allied health, and child care staff)
Level 3 Narrow focus parent training • *Primary Care Triple P* • *Triple P Discussion Groups* • *Primary Care Teen Triple P* • *Teen Triple P Discussion Groups*	Parents with specific concerns, as above, who require consultations or active skills training.	Brief program (about 80 minutes over four sessions, or 2-hour discussion groups) combining advice, rehearsal, and self-evaluation to teach parents to manage a discrete child problem behavior. May involve telephone contact.	Same as for Level 2.
• *Primary Care Stepping Stones Triple P*	Parents of children with disabilities, with concerns as above.	A parallel program with a focus on disabilities.	Same as above.
Level 4 Broad-focus parent training • *Standard Triple P* • *Group Triple P* • *Self-Directed Triple P* • *Triple P Online* • *Standard Teen Triple P* • *Group Teen Triple P* • *Self-Directed Teen Triple P*	Parents wanting intensive training in positive parenting skills. Typically parents of children with behavior problems such as aggressive or oppositional behavior.	Broad-focus program (about 10 hours over eight to 10 sessions) focusing on parent–child interaction and the application of parenting skills to a broad range of target behaviors. Includes generalization–enhancement strategies. May be self-directed, involve telephone or face-to-face clinician contact, or group sessions.	Intensive parenting intervention workers (e.g., mental health and welfare staff, and other allied health and education professionals who regularly consult with parents about child behavior).
• *Standard Stepping Stones Triple P* • *Group Stepping Stones Triple P* • *Self-Directed Stepping Stones Triple P*	Parents of children with disabilities who have or are at risk of developing behavioral or emotional disorders.	A parallel series of tailored programs with a focus on disabilities.	Same as above.

(continued)

TABLE 25.1. *(continued)*

Level of intervention	Target population	Intervention methods	Facilitators
Level 5 Intensive family intervention modules • *Enhanced Triple P*	Parents of children with behavior problems and concurrent family dysfunction, such as parental depression or stress, or conflict between partners.	Intensive individually tailored program with modules (60- to 90-minute sessions) including practice sessions to enhance parenting skills, mood management and stress coping skills, and partner support skills.	Intensive family intervention workers (e.g., mental health and welfare staff).
• *Pathways Triple P*	Parents at risk of child maltreatment. Targets anger management problems and other factors associated with abuse.	Intensive individually tailored or group program with modules (60- to 120-minute sessions depending on delivery model) including attribution retraining and anger management.	Same as above.
• *Group Lifestyle Triple P*	Parents of overweight or obese children; targets healthy eating and increasing activity levels, as well as general child behavior.	Intensive 14-session group program (including telephone consultations) focusing on nutrition, healthy lifestyle, and general parenting strategies; includes generalization-enhancement strategies.	As above, plus dieticians/nutritionists with experience in delivering parenting interventions.
• *Family Transitions Triple P*	Parents going through separation or divorce.	Intensive 12-session group program (including telephone consultations) focusing on coping skills, conflict management, general parenting strategies, and developing a healthy co-parenting relationship.	Intensive family intervention workers (e.g., counselors, mental health and welfare staff members).

DVDs demonstrating the parenting skills being introduced to parents, and self-report session fidelity checklists (e.g., Sanders, Markie-Dadds, & Turner, 2013). Parent resources such as tip sheets and workbooks are designed to minimize potential barriers, such as an average sixth-grade reading level in parent resources to avoid difficulties with literacy, use of video and live practitioner modeling to demonstrate parenting strategies, and the inclusion of families from diverse ethnic and cultural backgrounds in video demonstration resources. The types of parent resources used depend on the level of intervention and the type of delivery modality. Where possible, the information included in parenting materials depicts solutions or strategies that have been subjected to empirical evaluation. In the absence of definitive trials, materials were developed based on evidence-based principles and strategies that have been shown to work for similar problems. Where evidence is available for different strategies, those different options are presented.

The minimally sufficient information (i.e., just enough) is used to solve a problem. For example, although there are a large number of Triple P tip sheets dealing with specific developmental issues or behavioral problems, parent workbooks, and

DVDs, we advocate using only those resources that are actually needed to resolve a problem. Achieving a good outcome depends on providing clear, understandable parenting information that is provided with enough detail that the parents can decide whether the depicted strategy is acceptable to them, can follow the suggested solution, and can generalize the strategy to other situations. Giving parents more information than they require can lead to information overload and redundancy, and is just as problematic as providing insufficient information.

Program design strategies to improve families' access and engagement include offering different program delivery modalities such as individual, group, self-directed, telephone-assisted, large-group seminars, small-group discussion, and interactive online programs (see Table 25.1). There have also been effective documentary and lifestyle television programs that deliver evidence-based parenting messages through the mass media (e.g., Calam, Sanders, Miller, Sadhnani, & Carmont, 2008); tailored versions of the programs for specific high-need groups (e.g., parents of a child with a disability, maltreating parents); and programs that target different settings such as the workplace (Haslam, Sanders, & Sofronoff, 2013). Other engagement strategies are constantly being explored. For example, Heinrichs (2006) found that a small financial payment for high-risk, low-income parents for session attendance increased participation rates in German parents.

TABLE 25.2. Principles of Positive Parenting

Principle	Description
A safe and engaging environment	Children of all ages need a safe, supervised and therefore protective environment that provides opportunities for them to explore, experiment, and play. This principle is essential to promote healthy development and to prevent accidents and injuries in the home.
A positive learning environment	This involves educating parents in their role as their child's first teacher, and specifically teaching parents to respond positively and constructively to child-initiated interactions (e.g., requests for help, information, advice, and attention) through incidental teaching and other techniques to assist children to learn how to solve problems for themselves.
Assertive and consistent discipline	Triple P teaches parents specific child management and behavior change strategies that are alternatives to coercive and ineffective discipline practices (e.g., shouting, threatening, or using physical punishment). The aim is to develop predictable and consistent responses, and avoid factors that may maintain problem behavior (e.g., accidental rewards).
Realistic expectations	This involves exploring with parents their expectations, assumptions, and beliefs about the causes of children's behavior and choosing goals that are developmentally appropriate for the child and realistic for the parents. Parents who are at risk of abusing their children are more likely to have unrealistic expectations of children's capabilities.
Taking care of oneself as a parent	Parenting is affected by a range of factors that impact on a parent's self-esteem and sense of well-being. All levels of Triple P specifically address this issue by encouraging parents to view parenting as part of a larger context of personal self-care, resourcefulness, and well-being, and by teaching parents practical parenting skills.

TABLE 25.3. Core Parenting Skills Introduced in Triple P

Basic skills						Enhanced skills	
Parent–child relationship enhancement	Encouraging desirable behavior	Teaching new skills and behaviors	Managing misbehavior	Anticipating and planning	Self-regulation	Mood and coping skills	Partner support
• Spending brief quality time • Talking with children • Showing affection	• Giving descriptive praise • Giving nonverbal attention • Providing engaging activities	• Setting a good example • Using incidental teaching • Using ask–say–do • Using behavior charts	• Establishing ground rules • Using directed discussion • Using planned ignoring • Giving clear, calm instructions • Using logical consequences • Using quiet time • Using time-out	• Planning and advanced preparation • Discussing ground rules for specific situations • Selecting engaging activities • Providing incentives • Providing consequences • Holding follow-up discussions	• Monitoring children's behavior • Monitoring own behavior • Setting developmentally appropriate goals • Setting practice tasks • Self-evaluation of strengths and weaknesses • Setting personal goals for change	• Catching unhelpful thoughts • Relaxation and stress management • Developing personal coping statements • Challenging unhelpful thoughts • Developing coping plans for high-risk situations	• Improving personal communication habits • Giving and receiving constructive feedback • Having casual conversations • Supporting each other when problem behavior occurs • Problem solving • Improving relationship happiness

Delivering a program with fidelity does not necessarily mean rigid, manualized delivery. Practitioners are encouraged to deliver interventions flexibly to meet the diverse needs of their clients, but in such a way that the intervention is not moved beyond its evidence base (Mazzucchelli & Sanders, 2010). This involves working collaboratively with parents and being responsive to client need and situational context, while preserving the essential elements of the program. Key content, such as the positive parenting principles and strategies, must be presented to parents. However, adapting teaching examples, tailoring homework tasks and varying session length and number, can be used to respond to the needs and goals of specific clients. In this way, core concepts and procedures are preserved, but the idiosyncratic needs of particular parent groups are also addressed (e.g., parents of twins or triplets, parents of children with special needs).

The Triple P system of behavioral family intervention has evolved within a scientific tradition that values rigorous evaluation of outcomes and pursuit of greater understanding about what intervention works for whom and under what circumstances. Ensuring that the program has an adequate evidence base that demonstrates efficacy and effectiveness has meant that all aspects of the intervention system, including different levels of intervention, modes of delivery, and programs targeting specific problems and age groups, must be subjected to empirical scrutiny. Program developers also invite feedback from parents and practitioners to create a blend of evidence-based practice and practice-based evidence. This scientific agenda is necessary to ensure that the program continues to evolve in the light of new evidence. To assist with this ongoing process, an international Triple P Research Network (*www.tprn.net*) has been formed to promote scientific inquiry into all aspects of the program and its dissemination. This networking has led to a series of international collaborations and also independent replications that contribute to a growing body of evidence concerning intervention theory and practice.

SELF-REGULATION: A UNIFYING FRAMEWORK FOR SUPPORTING FAMILIES AND SERVICE PROVIDERS

A central goal of Triple P is the development of an individual's capacity for self-regulation (Sanders & Mazzucchelli, 2013). This principle applies to all program participants, from children and parents to service providers and researchers. "Self-regulation" is a process whereby individuals are taught skills to change their own behavior and become independent problem solvers, but in a broader social environment that supports parenting and family relationships (Karoly, 1993).

Developing Self-Regulation in Families

In the case of parents learning to change their parenting practices, self-regulation is operationalized to include the following five aspects.

1. *Self-sufficiency.* Social support and shared care are important. However, when parents become independent problem solvers they use their own resources

and become less reliant on others. Self-sufficient parents have the knowledge and skills to parent confidently and effectively, trust their own judgement and choices, and seek support if they need it.

2. *Self-efficacy*. Parents with high self-efficacy, who believe they can solve a parenting problem, have more positive expectations that change is possible. As parents experience success and reach goals, their self-efficacy and resilience increase.

3. *Self-management*. "Self-management" refers to the tools and skills that parents use to enable them to change their parenting practices, such as self-monitoring, self-determination of goals, self-selection of parenting strategies, and self-evaluation. Parents select which aspects of their own and their child's behavior they wish to work on.

4. *Personal agency*. Parents are encouraged to "own" the change process and attribute positive changes to their own or their child's efforts rather than to chance, maturational factors, or other uncontrollable events (e.g., the child's genetic makeup or the actions of others). This can empower parents and motivate them to continue their efforts.

5. *Problem solving*. Parents are encouraged to be actively involved and are supported to define problems, formulate options, develop a parenting plan, execute it, evaluate the outcome, and revise the plan as required. The aim is to assist parents to generalize their knowledge and skills to future problems, at different points in a child's development, and to other siblings.

These same self-regulation skills can be taught to children by parents in developmentally appropriate ways. Attending and responding to child-initiated interactions, and prompting, modeling, and reinforcing children's problem-solving behavior promote emotional self-regulation, independence, and problem solving in children.

Developing Self-regulation in Service Provision Systems

The implementation of a public health model takes time to become properly embedded within a community, and requires attention to the broader sociopolitical environment, as well as agency and provider capacity. This includes the following.

1. *Community capacity building*. Optimal program dissemination, implementation, and longevity require policy-level support; recurrent funding to ensure program sustainability over time; social marketing and community advocacy strategies that link parents to parenting support in ways that meet family needs without overwhelming local services; strong end user advocates; and public relations and science communication strategies to communicate to government, service providers, and the public about the progression of an initiative.

2. *Service system capacity building*. One way to increase the reach and accessibility of parenting programs is to involve many disciplines and create referral pathways. The Triple P System Population Trial in South Carolina, for example, involved

psychologists, social workers, parent educators, preschool directors, nurses, physicians, counselors, and others in the delivery of Triple P (Prinz, Sanders, Shapiro, Whitaker, & Lutzker, 2009).

3. *Organizational capacity building.* Program drift and de-adoption can occur unless program adherence is supported by an organization's leadership and a workplace culture of evidence-based practice is given more than lip service (Aarons, Sommerfeld, & Walrath-Greene, 2009). Our approach to organizational self-regulation has focused on internal advocacy to resource practitioners to implement programs with fidelity and to fit with community need and workplace parameters (Aarons et al., 2009; Hodge, Turner, Sanders, & Filus, 2016; Swain, Whitley, McHugo, & Drake, 2010), including supervision and logistical support to integrate the program into routine services (Turner, Nicholson, & Sanders, 2011).

4. *Service provider capacity building.* Self-regulation principles can be applied in the training of service providers to deliver programs flexibly according to each family's needs, in troubleshooting implementation difficulties, and focusing on their own ongoing skill development (Shapiro, Prinz, & Sanders, 2015). Provider utilization of Triple P has been shown to be related to completion of the full training and accreditation process (Seng, Prinz, & Sanders, 2006) and also to practitioner self-efficacy following training (Turner, Nicholson, & Sanders, 2011). A recent international survey of Triple P practitioners found that those sustaining the program at least 3 years following training were more likely to have received supervision/peer support, reported higher levels of program benefit, workplace support and positive leadership style, and lower program burden compared to practitioners who did not sustain use (Hodge et al., 2016).

THE TRIPLE P IMPLEMENTATION FRAMEWORK

The dissemination of Triple P is managed through a license agreement between The University of Queensland (the copyright holders) and Triple P International (TPI, a proprietary company established to disseminate Triple P). In recent years, TPI has developed a Triple P Implementation Framework (the Framework; Triple P International, 2015), drawing on best practice from the field of implementation science (e.g., The Active Implementation Frameworks: Fixsen, Naoom, Blase, Friedman, & Wallace, 2005; the RE-AIM Framework: Glasgow, Vogt, & Boles, 1999) and 15 years of experience supporting organizations to adopt and implement Triple P. It involves ensuring that implementation activities are context-specific and build on the existing capacity within the system. For community-wide rollouts of Triple P, the Framework can be used to support communities to establish collaborative implementation systems that develop the capacity for effective, sustainable program implementation. The five phases of the Framework are described below.

The first phase is *Engagement*. It is critical that the right programs and practices are chosen (the "fit") by implementing organizations. This requires a sound knowledge of the community and the organization, as well as a good understanding of the Triple P system. Considerations include whether there are gaps within existing services, which Triple P variants best fill these gaps, and how organizations could work collaboratively. Organizations also consider the cultural acceptability of the program. When introduced into new countries, cultural acceptability research is encouraged to ensure that programs are delivered in a culturally sensitive way.

The second phase, *Commitment and Contracting,* involves the development of a shared understanding of the scope of the implementation, and the local capacity to implement and sustain the program. Key activities include determining the target population, how the programs will be offered, and calculating the workforce capacity needed to meet the initiative's intended reach. Organizations looking to adopt Triple P as a community-wide rollout are encouraged to establish partnerships with other organizations committed to the same approach and goals, providing for broad and balanced availability of services.

Next, *Implementation Planning* occurs. Agencies have varying degrees of preparedness to adopt and maintain a program or intervention system, and thorough planning is crucial. Expecting practitioners to deliver a program following training within an unchanged organizational context does not support long-term sustainability. For practitioners to successfully achieve the proven outcomes from Triple P, an organization must have the appropriate supports and infrastructure (e.g., providing time for practitioners to adequately prepare, engage in peer support, and establish effective data collection systems). The aim is to ensure that an organization or collaborative develops awareness of their capacity to implement Triple P and put in place the implementation structures and processes required. To promote sustainability from the outset, the planning process includes careful selection and preparation of practitioners who will deliver Triple P (e.g., considering their capacity to engage with families in different ways, such as groups vs. individual programs); ensuring that sufficient time is allocated in work duties to deliver programs; and anticipating potential barriers to accessibility (e.g., child care, transportation, location, hours). Other factors to consider include resource costs, future training support to allow for staff attrition, and administrative implications.

Phase four is *Training and Accreditation.* Although many agencies favor a train-the-trainer model, such an approach can lead to program drift and poorer client outcomes, and program disseminators can find it difficult to incorporate revisions based on ongoing research. TPI directly manages all aspects of the professional training programs, including the initial practitioner training courses, pre- and post-training support for practitioners, networking for providers, and follow-up technical assistance. Maintaining control over the initial training of providers, although not without its challenges, is achievable and helps to promote quality standards. To prevent training program drift, all trainers use standardized materials (including participant notes, training exercises, and training DVDs demonstrating core consultation skills), become part of a trainer network, and adhere to a quality assurance process as part of the maintenance of their ongoing accreditation.

Triple P Provider Training Courses comprise attendance at a 1- to 5-day training course (based on the level of intervention), a preaccreditation day, and an accreditation. They employ an active skills training approach that involves a combination of didactic input by an accredited trainer, video and live demonstration of core consultation skills, small-group exercises to practice skills, problem-solving exercises, course readings, and competency-based assessment. This assessment includes a written quiz and live or videotaped demonstration by participants to show mastery of core competencies specific to the level of training undertaken. Triple P training is designed to be relatively brief to minimize disruption to staff schedules. Each training course is evaluated, and feedback is elicited on the course content, quality of presentation, opportunities for active participation and practitioners' overall consumer satisfaction. Practitioner feedback is incorporated into revisions of the training courses.

An online provider network provides ongoing technical support for accredited Triple P practitioners (*www.triplep-parenting.net/provider*). This network provides practitioners with practice tips and suggestions, as well as downloadable clinical tools and resources (e.g., monitoring forms, public domain questionnaires, session checklists), and keeps practitioners up to date with the latest research findings and new programs being released. As supervision and implementation support are so important for program fidelity and sustainment, there are also implementation consultants and a range of support options to build organizational capacity (e.g., a Triple P Workshop Series, with topics such as engaging hard-to-reach families, assessment and data management, and managing group process).

The final phase is *Implementation and Maintenance.* Following training, practitioners begin to offer Triple P in their community. Sustaining the changes established during implementation planning requires support through all implementing organizations in a community. These changes occur at multiple levels within the organization, including with practitioners (e.g., delivering Triple P with fidelity, attending peer support sessions), managers (e.g., encouraging service delivery, clarifying performance expectations and outcomes), organizations (e.g., adapting to challenges, implementing processes for peer support, coaching and supervision, ensuring ongoing funding), and at the systems level (e.g., using data to review support processes, service delivery, administrative support and leadership structures). As a practice takes hold, an organization enters into an implementation evaluation stage for approximately 6–12 months to accumulate service delivery and performance evaluations that demonstrate which systems can effectively sustain the successful delivery of Triple P and where additional support may be required.

Triple P is built on a scientist practitioner model, with outcome assessment at two levels: program effects for individual families and for large scale rollouts, changes at a whole-population level. Each program variant has a set of recommended outcome measures to assess child-, parent-, and family-level outcomes. Organizations are encouraged to establish an evaluation plan and develop processes for how pre- and postintervention data will be collected. A data scoring application is available to help practitioners score and track the most commonly used questionnaires. Other population-level measures include independent community prevalence data such as substantiated child maltreatment cases recorded by child protective services, child out-of-home placements recorded through the foster care system, and child hospitalizations and emergency room visits due to child maltreatment injuries (e.g., Prinz et al., 2009).

Practitioners who have access to supervision and workplace support post training are more likely to implement Triple P (Turner, Sanders, & Hodge, 2014). The peer-assisted supervision and support (PASS) model (Sanders & Murphy-Brennan, 2013) was developed to help practitioners establish a supervision network in their workplace, which is particularly helpful if clinical supervision is in the workplace has previously been inconsistent or embedded in hierarchical line management that may limit the opportunity for program-related reflective learning (McPherson, Sanders, Schroeter, Troy, & Wiseman, 2015). PASS involves practitioners meeting in small groups to review their sessions with parents. This process is largely self-directed and applies a self-regulatory framework to promote reflective practice and to encourage practitioners to deliver sessions according to standardized protocols. Conducting supervision in a small group promotes reciprocal learning outcomes, and peers become attuned not only to assessing their own clinical skills and those of fellow practitioners but also to providing a motivational context to enable colleagues to change their behaviors, cognitions, and emotions, so that they become proficient in delivering interventions. Sessions are recommended to occur every 2 weeks for the first six sessions, then monthly thereafter.

Maintaining the implementation of Triple P requires intentional feedback loops to ensure that the practice, organizational, and systems changes put in place are achieving the desired outcomes. Organizations are encouraged to use routinely collected family outcome data to enhance management and administrative support processes, and identify areas that need refinement, revision, or expansion for effective service delivery to continue over time. Ongoing procedures should be established to maintain workforce staffing levels, support program fidelity, and promote a shared understanding of the overall initiative aims.

CHALLENGES AND OPPORTUNITIES FOR INTERNATIONAL DISSEMINATION

Disseminating a program developed in the Southern Hemisphere is not an easy or straightforward process. Apart from the fact that Australia is seen as a considerable distance away, there are special communication challenges due to time zone differences. Despite these challenges, the Triple P system has been disseminated, to varying degrees, across 25 countries in 19 languages, testifying to the robustness of the program and adaptability to different cultural groups.

We have had the opportunity to work with many diverse cultures since the commencement of large-scale international dissemination of Triple P approximately 20 years ago. During this time, our experience has been that there are more similarities than differences across nations, as parents worldwide have similar concerns about raising their children and the need for parenting support (e.g., Lee et al., 2014; Morawska & Sultan, 2016; Sumargi, Sofronoff, & Morawska, 2015). Parent support practitioners working with these families also present in training with similar issues that have a consistent theme (e.g., engagement of hard-to-reach families, low literacy issues) and pose challenges to program usage and uptake globally. To date, Triple P training and parent programs have followed the same standardized format across all countries, supported by translated resources, with tailoring to account for contextual factors and unique aspects of a culture, with both minority groups and culturally diverse populations. As Triple P continues to gain international acceptance in diverse countries (e.g., Middle East) and within different minority groups (e.g., Indigenous populations), future consideration needs to be given to the delivery of training and accreditation when dealing with developing nations with limited professional resources (Ward, Sanders, Gardner, Mikton, & Dawes, 2016).

We have used a number of tailoring strategies that have enabled Triple P to be used in a diverse range of cultural and delivery contexts. As noted earlier, flexible tailoring involves encouraging practitioners to preserve the key or essential elements of the program, but to encourage them to change or adapt examples so that they are more relevant to specific client populations (Mazzucchelli & Sanders, 2010). We have also used consumer preference surveys to solicit parents' and practitioners' views on the cultural appropriateness and relevance of training procedures (Turner et al., 2014), parenting procedures (e.g., Morawska et al., 2011), program materials and delivery methods (Sanders et al., 2008; Metzler, Sanders, Rusby, & Crowley, 2012). Interestingly, the most important program design feature endorsed by 94% of parents as being "very important" was that the program had been proven to work. This finding confirms the importance that consumers attach to programs having an evidence base (Sanders et al., 2008).

As Triple P training is delivered to a broad range of service providers, the delivery of courses has to be customized to a certain extent to cater to the special characteristics of the service providers undergoing training. This can be accomplished by ensuring that trainers are familiar with the local context, including where different providers work, their role in providing parenting support, and their professional backgrounds and level of experience. Training should be flexible enough that the experience and learning styles of the group can be attended to, while at the same time ensuring that essential content is adequately covered. This tailoring can involve selection of relevant (to the audience) case examples and illustrations; drawing on the knowledge, experience and expertise of the group; and drawing to the attention of the group the variant and invariant features of the program. While the majority of Triple P Provider Training occurs in English, training resources have been translated into eight additional languages to date.

FUTURE DIRECTIONS

The task we have undertaken in developing the Triple P system is to develop and properly test the efficacy and effectiveness of a full suite of parenting programs tailored to the needs of individual parents. Such an ambitious undertaking required the sustained commitment of many prevention scientists and a dissemination organization that can translate findings from research into accessible programs in the community. There are key new directions in this body of work.

Evidence-based parenting programs are not widely accessible to the vast majority of the world population, particularly in low-resource environments in disadvantaged communities. We are developing and testing Triple P in several of low- and middle-income countries, including sub-Saharan countries of Kenya and South Africa, and Latin American countries (e.g., Panama). This work involves a coalition of nongovernment organizations and philanthropic organizations, and work has been done in some of the most challenging communities, such as urban ghettos. Current work also focuses on parenting programs with refugee families and Indigenous populations, including Aboriginal and Torres Strait Island populations in Australia, Māori and Pacific Island people in New Zealand, and First Nations populations in North America. Communities where children's and parents' lives are characterized by poverty, war, famine, disease, and natural disasters have very different needs, and much needs to be done to assess and meet those needs.

Another frontier is to harness the benefits of new technologies. Although there has been a proliferation of parenting websites, there is little evidence to refute or support the efficacy of this method of transferring knowledge about parenting. Specifically, randomized trials are needed to determine whether Web-based delivery of parent support changes parenting practices or children's behavior. We have, to date, found positive child and parent outcomes for families completing an interactive online variant of Level 4 Triple P in Australia (Sanders, Baker, & Turner, 2012) and New Zealand (Sanders, Dittman, Farrugia, & Keown, 2014) and with the addition of a social network platform for highly disadvantaged parenting in the United States (Love et al., 2016). Current research includes evaluations of the additional benefit of accompanying an online program with telephone support from a Triple P practitioner; the efficacy of a briefer, problem-specific Level 3 program; and a multilevel online system of programs triaged according to child behavior problem severity.

CONCLUDING COMMENTS

Traditionally, funding has been directed to tertiary (treatment) service provision based on clinical diagnosis rather than on prevention and early intervention programs. To ensure adequate reach of evidence-based programs, and access for all families, funding and delivery models need to be altered to include prevention and early intervention services. Our experience has led us to step out of a clinical psychology comfort zone to advocate for family support in many different ways, such as conducting briefings for senior bureaucrats, policymakers, and politicians; making formal in-person and written submissions to government commissions of enquiry; joining advocacy groups; becoming active in print, radio, televised, and online media to promote positive parenting messages and share research findings; and hosting an international conference for researchers, policymakers, and practitioners (*www.helpingfamilieschange.org*).

This chapter has documented the continuing evolution of the Triple P–Positive Parenting Program over 3 decades as a multilevel system of family interventions designed to reduce the prevalence of children's social, emotional, and behavioral problems, and child maltreatment. The program continues to evolve in the light of new evidence showing that it can be successfully implemented in diverse cultural contexts. The challenge remains to implement procedures that promote fidelity and program use by service providers in a way that is cost-effective and sustainable, that promotes professional development, and that delivers programs in a manner that has the greatest reach and impact.

ACKNOWLEDGMENTS

The Triple P is developed and owned by The University of Queensland. The University, through its main technology transfer company, UniQuest Pty Ltd, has licensed Triple P International Pty Ltd (TPI) to publish and disseminate Triple P worldwide. Royalties stemming from published Triple P resources are distributed to the Faculty of Health and Behavioural Sciences; School of Psychology; Parenting and Family Support Centre; and contributory authors. Matthew R. Sanders and Karen M. T. Turner are contributory authors and receive royalties from TPI. TPI engages the services of Professor Sanders as a consultant to support program integrity and dissemination, and to provide training to practitioners. TPI is a private company, and no author has any share or ownership in it.

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PART IV

CRITICAL ISSUES FOR THE FIELD

CHAPTER 26

Ethical Issues in Child and Adolescent Psychotherapy Research

Adam Fried and Celia B. Fisher

A body of empirical research has identified effective psychological treatments for children and adolescents diagnosed with mental health conditions (Falzon, Davidson, & Bruns, 2010; Ollendick & King, 2004; Weisz, Weiss, Han, Granger, & Morton, 1995). Continued progress in generating empirical knowledge of evidence-based practices relies on the responsible conduct of psychotherapy research to better understand the effects of standard and new treatment approaches with diverse populations. Researchers use a number of sources to make ethical decisions in the planning, implementation, and dissemination of treatment research, including applicable regulations and laws, such as the Code of Federal Regulations for the Protection of Human Subjects (Department of Health and Human Services [DHHS], 2009), the Health Insurance Portability and Accountability Act (HIPAA; 1996), and applicable state laws, such as mandated reporting requirements regarding child abuse and harm to self or others. Researchers also rely on professional ethics codes, including the American Psychological Association Ethics Code (American Psychological Association, 2010) and institutional rules, including those required by institutional review boards (IRBs). Finally, in addition to the researcher's own moral compass, responsible decision making is informed by consultation with colleagues and key stakeholders, including parents and families. Investigators often grapple with complex ethical challenges that may not be adequately addressed by established sources, especially as they may appear to provide contradictory information or are silent with respect to key ethics-in-science questions. We explore in this chapter emerging ethical considerations in the responsible conduct of psychotherapy research with children and adolescents, highlighting evidence-based, population-specific research ethics methods that achieve scientific goals, draw on participant strengths to maximize research benefits, and address vulnerabilities to protect the participant from potential research-related harms.

EVIDENCE-BASED RESEARCH ETHICS

Traditional ethical decision making often relies on universal approaches to concepts such as risk, benefit, and consent, designed to be applied across diverse populations, resulting in protections that may be overly broad or too narrow to adequately address the distinct patient groups and contexts involved in psychotherapy research (Sieber, 2008). Investigators have increasingly emphasized the need for empirical research on ethical practices that can guide contextualized evidence-based research ethics methods, appropriate to specific participant clinical characteristics, cultural attitudes, health care experiences, and values. Evidence-based ethical practices guide researchers and IRBs in more accurately anticipating participant harms and benefits, designing respectful informed consent and confidentiality and reporting procedures tailored to the population and consent context, and creating fair research procedures (Fisher, 2015).

Underlying the responsible conduct of research is a multicultural ethical commitment to understanding the ways in which cultural, political, and social factors may inform and affect the research process and outcome. This understanding, also referred to as "multicultural awareness," requires a self-examination of how one's own personal biases and beliefs may influence the research question and design, assessment of psychopathology and risk behaviors that fail to consider the effect of health disparities or stigma, and conceptions of treatment success (Arredeondo & Toporek, 2004; Fisher et al., 2002; Fisher, 2014, 2017). Effective psychotherapy research methods must continually be informed by empirical research on the ways in which individual factors, such as gender, race, ethnicity, sexual and gender identity, socioeconomic status, and religion, may affect research participation and outcomes. For example, results indicating that researchers may be less likely to provide consent information to minority parents and those from lower socioeconomic backgrounds, who, in turn, may be less likely to participate in informed consent conferences (Miller, Drotar, Burant, & Kodish, 2005) underscore the urgent need to train culturally knowledgeable research teams and to develop culturally sensitive consent procedures tailored to the research population (Fisher et al., 2002). In addition, the consent conference may be improved through a deeper understanding of participants' beliefs in term of their ability to refuse participation, the appropriateness of questioning those perceived to be in a position of authority, and the overall role of the scientist/doctor. Additionally, trainings for research staff aimed at promoting communication between researcher and participant during consent conferences have been shown to be effective in increasing dialogue and participant engagement (Cousino et al., 2011).

RELATIONAL ETHICS APPROACHES TO PSYCHOTHERAPY RESEARCH

Relational approaches to ethics-in-research decision making reflect core moral principles of integrity, beneficence, respect, and care through the creation of research procedures that are informed by (1) an understanding of the experiences, values, expectations, and research-related strengths and vulnerabilities of the participant and (2) the professional responsibilities of the researcher within the specific research context (Fisher & Goodman, 2009; Masty & Fisher, 2008). Two relational approaches that may be useful in psychotherapy research include goodness of fit and co-learning.

Goodness-of-Fit Approaches

Unlike traditional approaches to research ethics that often focus on participant vulnerabilities and serve to exclude or underprotect certain patient populations in research, goodness-of-fit methods attempt to shape study procedures and contexts to fit participant populations in ways that build on their strengths to reduce research-related vulnerabilities and increase active engagement of children and their families (Fisher, 2017). Goodness-of-fit ethics approaches have been used to develop contextually sensitive, ethically valid research methods with a number of vulnerable populations, including developmentally disabled adults, pediatric cancer patients and their parents, individuals who use illicit drugs and are at risk for HIV, and adolescents engaged in high-risk behaviors (Fisher, 2003a; Fisher & Goodman, 2009; Fisher & Masty, 2006; Fisher & Ragsdale, 2006). Goodness-of-fit approaches seek to identify and modify those aspects of the research procedures (e.g., informed consent, confidentiality, data collection, or debriefing procedures) that may exacerbate participant vulnerabilities through a comprehensive evaluation of participant characteristics, concerns, and values within the research context, attending to the scientific goals and professional and legal responsibilities of the researchers (Fisher, 2003a; Fisher, 2017; Fisher & Goodman, 2009). For example, informed consent language and procedures can be designed to enhance child and adolescent understanding of and engagement in the research process through consideration of a particular population's cognitive and emotional strengths and vulnerabilities, developmental level, research and treatment history, and cultural and other factors that may impact the ability of children and their parents to appropriately understand and consider critical consent information, such as randomization, treatment procedures, duration, and frequency (Fisher, 2003a; Fisher, Cea, Davidson, & Fried, 2006; Masty & Fisher, 2008).

Community Consultation and Co-Learning Approaches

Certain research designs and procedures may represent differing levels of risk, depending on the population (Fisher et al., 2002; Fisher, 2017), requiring investigators to seek input from communities and prospective participants to inform research design, implementation, and dissemination. Community consultation is often accomplished through formation of community advisory boards that include key research stakeholders who can advise investigators about specific science-in-ethics decisions (Fisher, 2017; Quinn, 2004). These relationships can promote community trust and provide support that is critical to the success of the study (Anderson et al., 2012; Quinn, 2004). However, identifying persons who can best represent the research-relevant and mental health concerns of children and their families requires an understanding of the social structures and relationships that define specific communities (Weijer & Emanuel, 2000). Researchers should also be aware that, at times, neither community leaders in positions of power nor service providers may be able to adequately address the hopes, fears, and values of the those who will participate in the research (Fisher et al., 2002), especially in communities whose research mistrust is rooted in a history of research abuses (Fisher & Wallace, 2000; Kerkorian, Traube, & McKay, 2007; Traube et al., 2013)

The co-learning approach to community consultation enhances the design of human subjects' protections and research methods by framing the relationship between investigator and community representatives as individuals with equal but different areas of expertise. Scientists' expertise lies in their ability to educate participants in communities about the purpose, nature, and methods of research, while participants' expertise lies in their ability to educate researchers about the values, attitudes, concerns, and hopes that will influence the success of recruitment, consent, confidentiality, and other research procedures (Fisher & Goodman, 2009; Fisher & Masty, 2006; Fisher & Ragsdale, 2006). For example, psychotherapy researchers often have questions as to whether parents and their children should be paid for participation in a clinical trial. The basis for this question may stem from fears that offering excessive payments in addition to clinical services may unduly influence participation decisions, especially in families that may be economically disadvantaged (Field & Behrman, 2004; Kendall & Suveg, 2008). However, as well intentioned as compensation decisions by investigators and their IRBs may be, differences in status and life circumstances suggest that they may not have the expertise required to determine when compensation is fair or exploitive. Studies that have drawn on community advisory boards and participant perspectives to inform such compensation decisions have found discordance about research compensation between adolescents and their parents, and between healthy volunteers and those with psychiatric illness (Wiener, Viola, Wilfond, Wendler, & Grady, 2015) and that worries regarding undue inducements are neither empirically or logically tenable, and may exclude poorer individuals from research participation (Denny & Grady, 2007; Fisher, 2003b).

INFORMED CONSENT AND ASSENT IN PSYCHOTHERAPY RESEARCH WITH CHILDREN AND ADOLESCENTS

Informed consent reflects scientists' commitment to respecting the self-determination and dignity of a patient's treatment and research decision making. In most cases, children and adolescents are not considered legally competent to provide informed consent to participate. Research that holds the prospect of direct benefit requires consent from at least one parent (45 CFR 46.408; DHHS, 2009), except in limited circumstances, such as when the IRB determines that guardian permission is not in the best interests of the child/adolescent, or when the minor is considered an emancipated or mature minor with special legal rights to consent independently to treatment.

Federal regulations also require that researchers obtain children's/adolescents' assent (agreement) to participate when they are capable based on their age maturity and psychological state. Meaningful discussion about participation in research reflects respect for personhood that may also enhance understandings of research purpose, procedures, and participant rights. In most instances a child/

adolescent's dissent (refusal) to participate overrides a parent's participation agreement. However, this dissent does not override guardian permission for participation in treatment research offering the prospect of direct benefit that cannot be obtained outside of the research. A dilemma may occur in these circumstances in which parents anticipate that the child/adolescent may not believe he or she has a condition to be treated or is otherwise resistant to participation. In these cases, a parent may request that the investigator not seek their child's/adolescent's assent. One alternative is to explain the research procedures to the child/adolescent and encourage questions and discussions, but not ask for his or her assent (Masty & Fisher, 2008). This approach respects the child's/adolescent's perspective, encourages active engagement in the consent dialogue, offers opportunities to ask questions and clarify research procedures and rights, while also respecting the family's decision-making process. While it is important to obtain the child's/adolescent's views about participation, his or her assent should not be sought if his or her dissent will not be determinative (Masty & Fisher, 2008; Rossi, Reynolds, & Nelson, 2003). It should be noted, however, especially in therapy settings, it may be practically difficult, if not impossible, to engage a child or adolescent who is adamantly opposed to participating in the therapy process in a meaningful way.

Informed, Voluntary, and Rational Consent

Consent is considered valid when the decision about participation is informed, voluntary, and rational. Psychotherapy research with children and adolescents presents unique challenges and opportunities with respect to these three consent requirements. Below we outline some key issues.

Informed

To make an informed decision, investigators must explain details about the research purpose and procedures that may impact an individual's decision to participate, including possible risks and benefits associated with participation. Benefits are traditionally distinguished between those that may be direct, such as assessments and interventions that hold the prospect of helping the participant, and those that may not directly benefit the participant, such as the generation of scientific knowledge that may be of benefit to others in the future. Psychotherapy research likely represents the possibility of both types of benefits, providing valuable data that may inform future treatments to benefit others, while holding the possibility of personal benefit to participants through the improvement of mental and/or physical health through evaluations and assessments, experimental interventions, monitoring, and treatment referrals.

If psychological interventions are powerful enough to improve mental health, it follows that they can be equally effective in worsening it (Barlow, 2010). In the normative practice of child and adolescent psychotherapy, the diversity of patient mental health needs and the fluid nature of differential diagnosis means that some therapeutic approaches will fail to help alleviate a mental health problem (Fisher, 2017). Researchers should be aware that risks associated with psychotherapy research communicated during informed consent may be interpreted differently depending on the population. For example, research suggests that adolescents and parents may disagree about the severity of clinical research-related risks (Wiener et al., 2015) and may minimize and/or experience difficulty identifying research risks, even after being provided with risk information during the consent process (Harth & Thong, 1995; Snowdon, Elbourne, & Garcia, 2006; Stines & Feeny, 2008).

Informed consent should be seen as a means of enhancing family research literacy. This includes explanations of random assignment that include not only a description of treatment and control conditions but also the rationale for randomization and the method (like flipping a coin). Similarly, the nature and purpose of safety monitoring procedures and whether control group participants will have access to a treatment found effective during the trial should also be explained. Finally, it should not be assumed that all participants understand the purpose and methods of psychotherapy; consent to treatment research should also include information about the nature and rationale for psychotherapy approaches. Effective consent procedures fitted to the characteristics of children and their families, including cultural and educational differences, may require a personalized approach to promote understanding of the nature and purpose of research as distinguished from treatment. Individual discussions with participants about the acceptability and any perceived barriers to the treatment research procedures may also be beneficial for both participants and the research, as previous treatment research suggests a relationship between these factors and outcome (Kazdin, 2000).

Voluntary

The decision to participate in research often arrives at a particularly stressful time for families struggling with the effects of their child's psychological condition. Parents who have had unsuccessful treatment experiences and who may experience pressure from family members, teachers, school officials, or others may desperately seek inclusion in a research study as a means of improving their child's condition. In these cases, parental stress and anxiety may impair their ability to adequately understand and appreciate the details of the research that are critical to making a truly informed decision (Eiser, Davies, Jenney, & Glaser, 2005; Kodish et al., 1998; Kupst, Patenaude, Walco, & Sterling, 2003; Masty & Fisher, 2008). Investigators should ensure that research staff members are adequately trained to work with families who may be experiencing this type of stress, including methods of encouraging dialogue with parents during consent conferences.

Investigators should be sensitive to the effects of the power differentials that exist between researcher and the family, especially when the researcher has a simultaneous treatment or professional role. Although adolescents may expect to play an active role in their own research and treatment decisions and prefer to collaborate with and seek parental opinions about participation decisions (Grady et al., 2014; Miller, Reynolds, & Nelson, 2008; Paul, Berriman, & Evans, 2008), some families may experience significant pressure to participate from health care providers or members of the research team (Grady et al., 2014). For example, children and adolescents who wish to withdraw may worry about disappointing the researcher or provider, which puts on them undue pressure to agree to participate and perhaps reduces the likelihood of voicing concern or a desire to terminate participation

(Grady et al., 2014). Investigators should avoid such conflicts of interest and clarify during informed consent that refusal to participate will not affect receipt of regular services.

Researchers should be aware that family decisions to participate in research may be influenced by the lack of access to care in their community. For some individuals without health insurance or other means to receive care, intervention studies may be the only opportunity to address mental health conditions. For example, participants in communities without mental health providers, who lack insurance coverage, or whose community's mental health services do not include empirically supported treatments, may experience pressure to participate in a clinical trial to gain access to competent and comprehensive mental health care at no cost (Pace, Miller, & Danis, 2003; Stines & Feeny, 2008). In such situations, the availability of such services through research can be considered a research benefit as long as the risks of participation are clearly communicated and understood, the treatments tested are specifically tailored to both the mental health and economic characteristics of the population, and participants are not selected simply as a sample of convenience due to lack of access to health care services.

Rational

Although children as young as 9 years old have been found to be able to understand the nature of research procedures, risks and benefits of research, participant rights, and to make a decision about participation, empirical research suggests that children do not have full comprehension of research and related rights until they are approximately 14 or 15 years old (Field & Behrman, 2004). Abstract concepts such as the purpose of the research and the reason for and nature of randomization may be more difficult for children and adolescents to understand, although these are challenging concepts for adults as well (Appelbaum, Roth, & Lidz, 1982; Fisher, 2003b; Horng & Grady, 2003). There is also great within- and between-groups variability in the ability to meaningfully contribute to consent decisions among individuals diagnosed with mental health conditions (Jeste & Saks, 2006; Palmer & Jeste, 2006). For example, some prospective participants may lack the ability to sufficiently appreciate the severity of or need to treat their condition (Masty & Fisher, 2008; Miller et al., 2008; Turrell, Peterson-Badali, & Katzman, 2011; Vitiello, 2008).

Assessing and Improving Consent and Assent Comprehension

Simply providing study-related information on a consent form does not ensure that participants adequately understand the research or their rights. In fact, research suggests that although participants may sign consent forms indicating their agreement to participate in research, many do not understand key components of the consent form, including risks of participation and the experimental nature of the treatment (Foe & Larson, 2016; Joffe, Cook, Cleary, Clark, & Weeks, 2001). Research suggests that pre-consent lessons, in-depth probing of consent information, educational brochures, and multimedia presentations may be helpful in enhancing child and adolescent understanding of research procedures, risks and benefits, and research rights (Abramovitch, Freedman, Henry, & Van Brunschot, 1995; Bruzzese & Fisher, 2003; Lally et al., 2014; O'Lonergan & Forster-Harwood, 2011; Tymchuk, 1992). To assess comprehension, some researchers have used postconsent assessments, such as questionnaires, to evaluate the extent to which parents and their children have understood the consent information (Wirshing, Wirshing, Marder, Liberman, & Mintz, 1998). Finally, in certain types of research settings, such as research with minors who may have state-appointed guardians or with mature minor or emancipated adolescents, investigators should consider including consent advocates or surrogates to ensure that the rights of participants are protected and to assist in the consent and assent process (Fisher, 2017; Fried & Fisher, 2008; Vitiello, 2008).

Goodness of Fit and Co-Learning Approaches to Informed Consent

The consent conference should aim to minimize family stress; encourage open discussion among the family members; solicit input; provide opportunities for children and adolescents to seek parental input; and communicate that the wishes, expectations, and concerns expressed by the child/adolescent are valued and taken seriously by researchers (Grady et al., 2014). Goodness-of-fit approaches to consent focus on modifying the consent conference to encourage active engagement and promote informed and voluntary decisions about participation. Consent may be more effectively viewed as an ongoing, interactive process wherein investigators and participants may especially benefit from periodic review of the research procedures and research rights, especially in longer-term psychotherapy trials in which changes to the research protocols or new evidence of effective treatments for the condition studied may require re-consent (Vitiello, 2008). Rather than a one-size-fits-all approach, goodness-of-fit procedures attempt to adapt the informed consent process to the family's experience in research and, in particular, to the child's or adolescent's cognitive and emotional maturity level and ways in which the nature of the disorder impacts on cognitive and emotional functioning (Masty & Fisher, 2008). Based on interviews with adolescents and their guardians who had participated in pediatric oncology trials, Masty and Fisher developed several goodness-of-fit approaches to improve consent processes and preemptively address areas of potential child and parental confusion, misunderstanding, and concern by fitting assent and guardian permission procedures to (1) the child's/adolescent's current assent capacities and the likely impact of study information on the child's/adolescent's mental health; (2) the family members' history of shared health decision making; and (3) the child's/adolescent's strivings for autonomy within the context of his or her parents' duty to make decisions in his or her best interest. Table 26.1 includes examples of questions and methods to address each of these approaches.

ETHICAL ISSUES IN RANDOMIZED PSYCHOTHERAPY TRIALS

Randomized psychotherapy trials seek to compare the effects of an experimental intervention to those of other established treatments or a standard of care. While these methods carry significant methodological advantages, they also require careful ethical planning. In general, ethical justification for clinical trials requires the presence of clinical equipoise, where there is genuine empirical uncertainty in the field with respect to the relative effectiveness of the interventions or conditions

TABLE 26.1. Goodness-of-Fit for Informed Consent: Recommendations and Applications

Recommendation	Key questions	Approaches
Adapt the consent process to child and family experiences and circumstances	Are there aspects of the child's/adolescent's condition (e.g., irritability, anxiety, or oppositionality) that may lead to a decreased willingness to participate and/or parent–child conflict over the participation decision? What factors may impact parental consent decision making or unintentionally lead to confusion, misunderstanding, and concern over research methods?	Acknowledging the potential for disagreement between children and their parent about research risks and benefits, motivations to participate, and the nature of the problems to be addressed by the intervention (Fisher, 2003b; Fisher et al., 2002; Hawley & Weisz, 2003); seeking to understand key decision-making factors, including the family's research experience and expectations, their understanding of and attitudes toward the child's/adolescent's condition, and his or her experience in seeking and obtaining treatment.
Understand and respect family approaches to decision making	Are the child's/adolescent's health care decisions typically made solely by the parents or in collaboration with the child/adolescent? Are there cultural norms in terms of decision making that might be helpful to consider when developing a consent conference approach? How should participation disagreement between parents and the child/adolescent be handled?	Consent procedures can be informed by an understanding of the relationship between the parents and child/adolescent, as well as the family's history with and approach to decision making. Seek to understand the degree to which children and adolescents are expected to participate in research decisions.
Balance respect for child autonomy and parental rights	How can an investigator balance the research-related wishes of adolescents with the rights of parents to make decisions in their child's best interests? Does the child/adolescent have the desire, capacity, or the authority to make autonomous decisions about his or her health or well-being?	Consultation with parents can help determine what types of information should be conveyed to child/adolescent participants and the optimal communication method. A co-learning approach with parents, family members, or other stakeholders can reveal topics or approaches that may elicit a distress response that the investigator did not anticipate.

Note. Data from Masty and Fisher (2008).

being compared (Freedman, 1987). In addition to clarifying the rationale and nature of random assignment during the consent process, investigators should carefully explain the individual risks and potential benefits of each treatment condition, including placebo or no-treatment arms of a trial and whether the patients or their families will know to which arm of the trial the child/adolescent will be assigned (Fisher, 2017).

Investigators conducting psychotherapy research clinical trials must also develop plans for and communicate to participants and their families the means of monitoring, identifying, and addressing situations of treatment nonresponse, distress, or significant deterioration in a participant's condition. In addition to the possibility that psychological intervention itself may produce harm in addition to or instead of the intended benefit, researchers are also confronted with other types of possible harms raised by research design decisions. For example, some research designs may attempt to discourage or prohibit families from seeking adjunct treatments, such as medication management, for fear that these other treatments will negatively impact the validity of their investigation.

Therapeutic Misconception and Misestimation

Other types of harm may occur through a misunderstanding of the purpose and/or nature of the research procedures. Even when informed about the experimental nature of the research and random assignment of study conditions, participants may still continue to (1) believe that the intervention they are assigned is personalized to their condition and individual treatment needs (known as the "therapeutic misconception"); (2) underestimate risk and/or overestimate potential benefit of participating in research (known as "therapeutic misestimation"); (3) participate based on the hope that doing so will improve their condition or symptoms (known as "therapeutic optimism"); and/or (4) fail to believe the investigator's efforts to explain the research–treatment distinction (known as "research mistrust") (Appelbaum et al., 1982; Fisher et al., 2008; Horng & Grady, 2003). Therapeutic misconception has been studied extensively in biomedical clinical trials, but there is currently little information about the prevalence of therapeutic misconception in child and adolescent behavioral and mental health intervention research (Lavori, Sugarman, Hays, & Feussner, 1999; Masty & Fisher, 2008). Limited research suggests that families often enroll in treatment research to receive high-quality care, and that adolescents and parents may be confused about randomization and under the mistaken belief that assignment to research condition is personalized based on the adolescent's treatment needs (Vitiello et al., 2005, 2007; Wagner, Martinez, & Joiner, 2006).

The research, including studies in medical or other treatment settings, or those sponsored by researchers who are also providing clinical care, may also contribute to erroneous beliefs that the experimental research protocol is a prescribed treatment. For example, parents referred to research studies by their health care providers may incorrectly assume that the intervention research is intended to be a prescribed treatment for their child's condition (Masty & Fisher, 2008; Stines & Feeny, 2008). To minimize therapeutic misconception, clinical trials research disclosures should clearly explain (1) the purpose of the research and that investigators are genuinely uncertain as to which condition may be more effective; (2) that the overall goal of research is to produce generalizable knowledge that can advance the field and result in new or improved treatments for others, rather than provide personalized care; and (3) that the exact nature of the risks or the effectiveness of the experimental intervention may not be known.

Confidentiality and Disclosure Policies

Psychotherapy research with children and adolescents presents unique confidentiality challenges, due to both the research methods used and the mental health conditions addressed. Mental health research may touch on a number of sensitive topics that are not part of the specific condition under study, including substance use and abuse, sexual activity, self-harm, and illegal behaviors (Hiriscau, Stingelin-Giles, Stadler, Schmeck, & Reitar-Theill, 2014) that may place the child/adolescent or his or her family at social, economic, or legal risk. Confidentiality concerns are also heightened by the use of technologies to deliver experimental treatments and verify the fidelity and competence of the treatment research protocols.

Researchers conducting psychotherapy studies are advised to consult with IRBs, and local and state laws to develop confidentiality and disclosure policies, especially with regard to mandated reporting. For example, studies involving home visits should determine in advance whether the research staff members collecting data in the homes are mandated reporters, the criteria for identifying child neglect or abuse, and steps they should take if they witness maltreatment meeting the neglect/abuse criteria (Fisher & Goodman, 2009). These responsibilities must be clearly communicated to participants during informed consent. In addition to mandatory state reporting requirements, as in exclusively practice settings, psychotherapy researchers must make decisions about the nature of information, if any, from sessions with children and adolescents that will be disclosed to parents. such as when the child/adolescent may be engaged in high-risk behaviors. Informed consent procedures should include open discussions that provide opportunities for child/adolescent participants and guardians to discuss confidentiality concerns, clarify areas of confusion, and ask questions about confidentiality and disclosure procedures (Fisher, 2017). These should occur at the outset of the research and as needed throughout the research experience.

Adolescents and parents do not always agree about confidentiality procedures, and empirical data to guide researchers (and psychotherapists) as to when and what behaviors should be disclosed to parents are scarce, although a few studies have identified some key variables that predict the willingness of psychotherapists to disclose information to parents, such as the developmental characteristics of the child/adolescent (including age) and the frequency and magnitude of harm associated with the behavior (Isaacs & Stone, 2001; Rae, Sullivan, Razo, George, & Ramirez, 2002). While clinical investigators working with youth may view confidentiality as critical to the success of psychotherapy (Byczkowski, Kollar, & Britto, 2010), promises of absolute confidentiality by a therapist ignore professional and legal responsibilities. Additionally, research suggests that adolescents expect and view it as a responsibility of individuals in positions of authority, including doctors and researchers, to report serious concerns (including physical or sexual abuse and harm to self and others) or otherwise act in the best interest of the adolescent, such as providing referrals (Fisher et al., 1996; Ford, Millstein, & Halpern-Felsher, 1997). Similarly, surveys involving parents indicate that many would consent to research involving high-risk adolescent behaviors if investigators provided service referrals to participants in need (Fisher, 2003b; O'Sullivan & Fisher, 1997).

Confidentiality and Audio and Video Recording of Treatment Sessions

Psychotherapy research may include video and/or audio recordings of treatment sessions to assess therapist adherence to a treatment manual and, in some cases, the competence of treatment delivery. While this analysis is methodologically important to ensure that the treatments are implemented correctly, these methods may represent a confidentiality risk to participants. Researchers must ensure that stored auditory and visual records are adequately protected, that access to these records is restricted to the authorized members of the research team, that recordings are destroyed when no longer necessary for data analysis or data replication processes, and that names or other identifying information are not recorded. In addition, participants must provide explicit consent to the recording, which should include the purpose of the recordings and the methods of ensuring confidentiality and data security (American Psychological Association, 2010; Fisher & Vacanti-Shova, 2012).

One common method for evaluating the adherence to and competence of psychotherapy research sessions is to have independent raters view and evaluate the tapes using a specific measure or rubric. This can raise confidentiality concerns, however, when raters are from the same community as participants or recognize participants from other settings (Kendall & Suveg, 2008). Researchers using recording equipment should take steps to try to limit identification of the client, such as pointing the camera toward the researcher conducting the session (rather than the client), instructing therapists not to use names during sessions, and coding recordings with assigned participant numbers.

Research Conducted in Service Delivery Settings

Psychotherapy research conducted in "real-world settings" such as hospitals, community-based mental health clinics, and health care practices provides key contextual information about the applicability and effectiveness of investigational treatments. This exciting line of research not only has the potential to shed light on obstacles to implementing laboratory research in practice settings (DeFife et al., 2015), but it also raises important ethical considerations. For example, perceived and actual power differentials between health care provider and patient may influence the decision to accept a referral to a research study (Garland, McCabe, & Yeh, 2008). Patients may feel pressure from providers to participate in a study and fear they may disappoint providers if they decline to accept the research referral. Patients may also believe that enrolling in the research study is required to maintain their current care and services (Fisher et al., 2002; Fisher & Goodman, 2009). These vulnerabilities may be compounded among those with limited experience with health care and research, and those with legal, economic, and other vulnerabilities (Fisher et al., 2002).

When researchers are also health care providers, practice-based research may exacerbate the risk of therapeutic misconception, especially when the purpose of assessment and intervention procedures are unclear. To minimize confusion and enhance the informed and voluntary nature of consent, clinicians who refer patients to research studies should (1) clarify their roles with respect to research and clinical care, (2) clearly explain the purpose of assessment and treatment procedures used in research, and (3) clarify that refusal to participate in the research (or withdrawal of participation) will not affect clinical services that they currently receive or are entitled to receive.

FUTURE DIRECTIONS

The responsible conduct of psychotherapy research requires population-specific, evidence-based methods and decision-making processes. Additional research is needed to inform emerging research methodologies and to ensure that methods and procedures are valid and appropriate across diverse populations. Key psychotherapy research ethics objectives include the following:

- Understanding the role of cultural, familial, and other contextual factors in the willingness to consent to research.
- Developing empirically informed confidentiality procedures that protect the well-being of children and adolescents, and promote trust in the psychotherapy research process.
- Navigating complex guardian and self-consent questions among diverse populations, including "hidden minorities," such as lesbian, gay, bisexual, transgender, and queer (LGBTQ) adolescents.
- Creating responsible and noncoercive practice-based mental health research procedures for practitioners and researchers.
- Assessing and improving consent capacity across complex and often intersecting developmental and mental health conditions.

CONCLUDING COMMENTS

Psychotherapy research is critical to the identification and dissemination of evidence-based psychological treatments. The responsible conduct of psychotherapy research with children and adolescents requires a commitment to doing "good science well," wherein investigators conduct research that is both scientifically sound and ethically responsible. With the development of new technologies and treatment paradigms, critical ethical questions in psychotherapy research will continue to emerge, presenting novel ethical challenges for investigators, IRBs, and policymakers. As illustrated throughout this chapter, the resolution of psychotherapy research ethics dilemmas may require seeking guidance beyond traditional scientific ethics resources. Relational approaches that are evidence-based and specific to the participant population and research context can inform respectful and effective research ethics procedures.

ACKNOWLEDGMENTS

Portions of this chapter were funded by a grant from the National Institute on Minority Health and Health Disparities (No. R01 MD009561), Celia B. Fisher and Brian Mustanski, Principal Investigators.

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CHAPTER 27

Implementing Evidence-Based Psychotherapies for Children and Adolescents within Complex Mental Health Systems

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The new architecture for health care in this country is, as of this writing, still unknown. However, there is no doubt that it will shape the foundation of behavioral health services and the systems in which those services reside. The Patient Protection and Affordable Care Act of 2010 (PACA) and the Mental Health Parity and Addiction Equity Act of 2008, now being considered for repeal or significant overhaul, put into place principles of equity for mental and behavioral disorders and accountability for services, neither of which existed in the past. In fact, the changes consequent to these two acts were profound and more sweeping than at any time in the last 5 decades. They affected financing for behavioral health services, workforce demands, types of treatments, and other services that could be offered. Regardless of what the new health care context will look like, it is very likely that the need for solid knowledge about safe, effective, and affordable treatments for child and adolescent mental health conditions will still exist. And beyond this, the need for knowledge about how to install effective mental health treatments within the health care system will become stronger than ever. The kinds of questions likely to drive future research may include: Is the workforce prepared to deliver effective treatments? Are payment systems aligned to support delivery? Are supervisory and management structures in place to promote innovation? Can outcomes be tracked and monitored so that there is continuous opportunity to improve the quality of services? These questions are at the core of a genre of research called dissemination and implementation science.

In this chapter, we describe the growth of interest in this new genre of science and the conceptual and theoretical models that underpin it. We then focus on one of the complex systems in which evidence-based psychotherapies (EBPs) for children and adolescents feature prominently: state health and human services. We provide specific examples, from our experiences in New York, on tested strategies to improve implementation of EBPs for children, adolescents, and their families. Finally, we outline a research agenda to advance the science of dissemination and implementation.

THE GROWTH OF AND INTEREST IN DISSEMINATION AND IMPLEMENTATION RESEARCH

Dissemination and implementation research is a natural outgrowth of the expansion of knowledge about EBPs, as described in other chapters in this book. The increase in manualized and replicable therapies has gained the interest of policymakers and other decision makers about their use and their potential installation within different systems. Nearly 3 decades of clinical research should be focused on the development of EBPs are now catalogued by the federal government (e.g., National Registry of Evidence-Based Programs and Practices), professional associations (e.g., American Psychological Association, Division 53), and for-profits (e.g., Managing and Adapting Practice). While anyone may have access to this menu of EBPs, health care decision makers are specifically looking for practical tools and research-based strategies for implementing these therapies.

DISSEMINATION AND IMPLEMENTATION RESEARCH FUNDING

The first dissemination and implementation (D&I) funding announcement from the National Institute of Mental Health (NIMH) was issued in 2001, and it began a trajectory of funding opportunities that are now integrated within the National Institutes of Health (NIH) as a whole. A recent analysis of D&I research funded by the NIH shows that from 2005 to 2012, a total of 76 D&I research projects were funded by the NIH (through multi-institute program announcements) for a total investment of about $80 million (Tinkle, Kimball, Haozous, Shuster, & Meize-Grochowski, 2013). The majority of funded projects were R01s (*n* = 46). NIMH-funded-research comprised nearly 30% of the total D&I funding.

An analysis of funded studies focusing specifically on policy D&I, a subarea of particular relevance for complex health systems, found that between 2007 and 2014, there were 146 projects funded by NIH; only 8.2% were considered policy projects (i.e., having relevance to policy outcomes or carried out within a policy arena; Purtle, Peters, & Brownson, 2016). So although D&I research has grown steadily since 2005, there are few studies that have focused on the application of this scientific area to the policy decision making that occurs within complex mental health systems.

D&I THEORETICAL MODELS

"Implementation," as defined by the NIH is "the use of strategies to adopt and integrate evidence-based health interventions and change practice patterns within specific settings" (Glasgow et al., 2012, p. 1275). The leading journal in the field, *Implementation Science*, defines implementation similarly, as "methods to promote the systematic uptake of proven clinical treatments, practices, organisational, and management interventions into routine practice, and hence to improve health" (Sales, 2016). In contrast, "dissemination" is defined as the targeted distribution of information and intervention materials to a specific public health or clinical practice audience. The intent is to spread knowledge and the associated evidence-based interventions (U.S. Department of Health and Human Services, 2009). Most of our focus in this chapter is on implementation because it is the focus of the majority of research that is relevant to complex health systems, including but not limited to states.

The Practical, Robust Implementation and Sustainability Model

The practical exigencies of implementing evidence-based practices and quality improvement innovations in complicated public health systems requires implementation models that are equally practical and multilayered. The practical, robust implementation and sustainability (PRISM) model is based on the premise that "as long as efficacy and effectiveness trials are considered complete without considering implementation *in non-research settings,* the public health potential of the original investments will not be realized" (Feldstein & Glasgow, 2008, p. 228). The PRISM model is useful in emphasizing the translation of research into practice, drawing on public health constructs from quality improvement, chronic care, and the diffusion of innovations. It emphasizes how interventions—in our case, how New York State EBP quality improvement rollouts *interact with the characteristics of recipients* (e.g., agencies, providers and consumers) to influence implementation outcomes.

The Exploration, Adoption/Preparation, Implementation, and Sustainment Model

Like the PRISM model, the more recently developed exploration, adoption/preparation, implementation, and sustainment (EPIS) model is sharply focused on the factors affecting the process of implementation (Aarons, Hurlburt, & Horwitz, 2011). The model outlines the inner and outer contexts in which implementation takes place at each stage of the implementation process (i.e., exploration, adoption/preparation, implementation, and sustainment; see Figure 27.1). This model *explicitly recognizes* that *different variables* may play crucial roles *at different points* in the implementation process. For instance, the model describes the *factors* in the outer context (i.e., sociopolitical, funding, client advocacy, and interorganizational networks) and inner context (i.e., organizational characteristics and individual characteristics) that affect *each phase* of the implementation process. For example, outer context factors (e.g., funding) and inner context factors (e.g., organizational characteristics) may have different effects during the exploration phase and the adoption phase in EBP implementation.

The Reach, Efficacy, Adoption, Implementation, and Maintenance (RE-AIM) Model

A third D&I model, the reach, efficacy, adoption, implementation, and maintenance (RE-AIM) model, by Glasgow, Vogt, and Boles (1999), provides a systematic framework to evaluate interventions' potential for translation and public health impact.

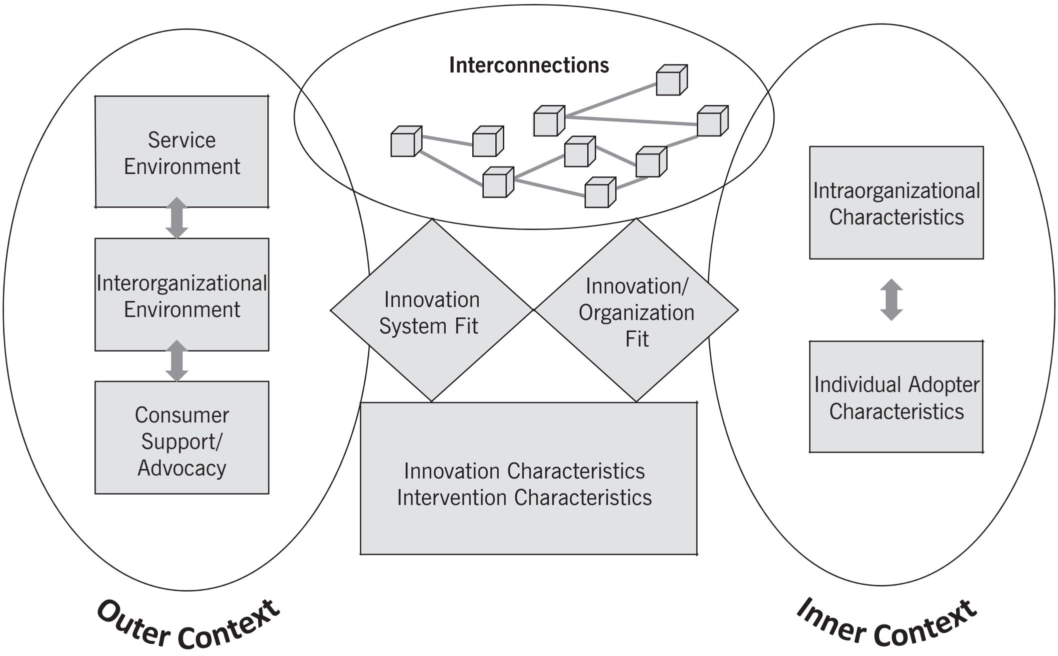

FIGURE 27.1. The EPIS model. From Aarons, Hurlburt, and Horwitz (2011). Copyright © 2011 Springer Science + Business Media. Reprinted by permission.

The RE-AIM framework is designed to enhance the quality, speed, and public health impact of efforts to translate research into practice in five steps: (1) *reach* the intended target population; (2) *efficacy* or effectiveness; (3) *adoption* by target staff, settings, or institutions; (4) *implementation* consistency, costs, and adaptations made during delivery; and (5) *maintenance* of intervention effects in individuals and settings over time (Glasgow et al., 1999). The RE-AIM model assesses individual and institutional levels of impact (Van Acker, de Bourdeaudhuji, de Cocker, Klesges, & Cardon, 2011).

As research in D&I science continues to grow, theoretical models to capture the dynamic processes have been refined over time. All of the models are multilayered to incorporate perspectives of different stakeholders, including providers, patients, families, and systems. PRISM, EPIS, and RE-AIM models share similarities in terms of attention to the processes of providing care. There are, however, differences in emphasis. PRISM examines interactions between interventions and recipients, with a focus on both organizational and patient perspectives and characteristics. EPIS focuses on how inner and outer contexts impact implementation and the developmental process of moving from exploration to sustainment. RE-AIM focuses on the public health impact of interventions when they are scaled up, including a focus on their public health reach, effectiveness and feasibility, and maintenance.

STATE SYSTEMS' USE OF EBPS

State mental health authorities (SMHAs) administer, manage, and regulate mental health services for adults, children/youth, and families. Increasingly, SMHAs are being subsumed under Departments of Health and/or combined with substance abuse departments, as payments for behavioral services align with federal rules and accountability expectations. Children and adolescents with mental health needs have historically received mental health services within an array of different systems other than the traditional mental health system: pediatrics, substance abuse, child abuse and neglect agencies, and juvenile justice. Thus, coordinating services across these different sectors has been a long-standing challenge to meeting the service needs of children and adolescents.

For states to invest in EBPs, they need information on the return on their investment. In some states, data are collected and analyzed through a policy institute (e.g., Washington State/The Washington State Institute for Public Policy), but these data are specific to that state's population. States may also benefit from the implementation of information technology (IT) systems to better track EBP implementation processes (e.g., who is doing the uptake) or outcomes (e.g., for whom is which EBP most successful). However, from 2001 to 2012, the percentage of states using outcome monitoring systems or modifying IT systems to support EBPs did not change despite advances in technology (Bruns et al., 2016).

The declining numbers of clients served, penetration rates, and adoption of EBPs by states between 2001 and 2012 (Bruns et al., 2016) suggest that despite intentions to improve the quality of services by incorporating EBPs into state systems, there are formidable challenges that need to be anticipated. We think of these as "implementation salvage strategies"—strategies that can anticipate problems and rescue the intervention, or protect the integrity of the research or evaluation (Hoagwood, Chaffin, Chamberlain, Bickman, & Mittman, 2011). In what follows we describe how in New York State (NYS) we have been developing, adapting, testing, and refining various D&I tools, strategies, and approaches to inform more effective and efficient rollouts of EBPs for children, adolescents, and their families.

STATE IMPLEMENTATION RESEARCH: SOME EXAMPLES

In NYS, a group of researchers, policymakers, providers, and family support specialists have worked in partnership since 2002 to redesign and to implement a range of evidence-based practices within the children's mental health system. The NYS system has provided a unique laboratory for a range of naturalistic experiments. Below, we describe how we have developed and tested five strategies to improve the uptake of EBPs. We also describe lessons learned and implications for scaling in other systems with the goal of creating evidence-based implementation policies.

The five strategies include the following:

1. *Technical assistance,* focused on improving clinics' business and clinical acumen, with an expansion beyond mental health to the substance use system.
2. The use of *health information technology* (HIT) to improve EBP uptake.
3. The use of a *new workforce, parent partners,* to improve EBP delivery.
4. The development of *quality indicators* to improve the delivery of care for adolescent and maternal depression.
5. The use of a *corporate retail innovation* (e.g., *mystery shopper*) to improve access to EBPs.

Technical Assistance, Focused on Improving Business Acumen, with an Expansion to the Substance Use System

In 2011, the New York State Office of Mental Health (NYS OMH) created the Community Technical Assistance Center (CTAC), with the goal of improving both business and clinical practices in NYS clinics. In collaboration with NYS OMH, we characterized the uptake of the business and clinical innovations offered by the CTAC, and investigated those factors across multiple levels that were facilitators and barriers to adoption of these trainings. These types of data are critical to NYS OMH—and to all state mental health authorities facing budget cuts and looking for strategies for more efficient and effective use of state budget dollars. The economic impact of implementing EBPs in one state indicated that adoption can be economically sound, resulting in a 56% rate of return on investment (Aos, Mayfield, Miller, & Yen, 2006).

To assess uptake, we profiled clinics' utilization of trainings and assigned adopter profiles to clinics, from low- to superadopters; the continuum represents an increase in quantity and intensity of trainings adopted. We found that business and clinical trainings were equally important to clinics' needs and viability; the business and clinical trainings had an identical rate of uptake (75%).

States tend to provide technical assistance broadly; they rarely tailor their assistance to specific characteristics of the programs, agencies, or hospitals under their purview. However, for states to be more efficient in providing support, it is important to ascertain which clinics are more likely to adopt EBPs before engaging in costly rollouts. We found that while clinic characteristics were predictive of *any* participation in trainings, they were less useful in predicting clinics' *intensity* of participation. Clinics affiliated with larger, more efficient agencies, and clinics that outsourced more clinical services, had lower odds of participating in any business practice trainings. Participation in business trainings was associated with interaction effects between agency affiliation (hospital or community) and clinical staff capacity; clinics with more full-time-equivalent clinical staff and a higher proportion of clients under age 18 had higher odds of participating in any clinical training. Participating clinics with larger proportions of youth clients had greater odds of being high adopters of clinical trainings (Olin, Chor, et al., 2015).

Lessons for States. Structural, fiscal, and organizational differences among clinics affect their participation in technical assistance offerings. The implication for policy decision making is that tailoring rollouts to characteristics of clinics is likely to improve uptake.

The Use of HIT to Improve EBP Uptake

Implementation research in complex systems is increasingly incorporating digital technologies to collect, analyze, and link data. The adoption of electronic health records by mental health programs has increased substantially, benefiting from the $400 million spent developing Regional Health Information Organizations, a main goal of the Patient Protection and Affordable Care Act of 2010. This allows providers to share information electronically across systems, platforms, and practice settings; however, the efforts around information sharing apply only to adult systems, and efforts have only begun to focus on child behavioral health systems. The use of HIT, such as measurement feedback systems for clinical management, is an important advance that might improve wider uptake of new clinical practices. In NYS, two measurement feedback systems have been tested to see whether they improve EBP rollouts: the Contextualized Feedback System (CFS) and the Managing and Adapting Practice (MAP) system (Chorpita & Daleiden, 2009).

The Contextualized Feedback System (CFS) Study

We examined uptake of the Contextualized Feedback System (CFS; Bickman, Kelley, Breda, de Andrade, & Riemer, 2011), a tool allowing clinicians to assess change as a client progresses, in two NYS clinics, and in this pilot study identified implementation challenges similar to those faced by clinics taking up EBPs. Differences across sites provided a basis for examining factors that influenced clinician uptake of CFS. Following the EPIS implementation framework (Aarons et al., 2011), we coded qualitative data collected from 18 clinician interviews about their experience with CFS implementation. Clinicians across both clinics identified two to three times as many barriers as facilitators to CFS implementation. Clinicians at the higher-implementing clinic reported a higher proportion of *barriers* to facilitators (3:1 vs. 2:1); however, these clinicians also reported a significantly higher level of organizational and leadership supports for CFS implementation (Gleacher et al., 2016).

The Managing and Adapting Practice (MAP) Study

Like the CFS, Managing and Adapting Practice (MAP) is a measurement feedback system that offers a broad range of additional resources, including the most current scientific literature and user-friendly measurement tools and clinical protocols (Chorpita & Daleiden, 2009). Using an online database, the MAP system provides detailed recommendations about discrete components of EBPs relevant to specific youth characteristics and presenting symptoms. The MAP system framework tracks outcomes and practices on a graphical "dashboard." NYS OMH trained approximately 150 clinicians and their supervisors, via webinars and in-person trainings, between 2013 and 2014 (Olin, Nadeem, et al., 2016). Dropouts from systemwide evidence-based practice trainings, such as MAP, are typically high, yet there are few studies on what predicts dropouts.

State administrative data and prospectively collected clinician participation data were analyzed to identify predictors of dropouts. Two characteristics emerged: Younger clinicians and those practicing in upstate-rural areas (as compared to downstate-urban areas) were less likely to drop out from training (Olin, Nadeem, et al., 2016).

These findings were used to restructure the state's plans for future rollouts of MAP trainings. Adaptations included modifications to the training program structure and content, and increased monitoring of participants' attitudes and engagement in training. Furthermore, *targeted* adaptations, such as the addition of a pre-training webinar introducing the use of technology for the MAP program (i.e., how to use Microsoft Excel), and increased one-on-one support throughout training were implemented. Preliminary analysis indicate that participant retention rates in this second rollout were significantly higher (dropout rates in the first rollout and the second = 51.2 vs. 11.4%) suggesting that targeted implementation strategies may be effective in decreasing clinician dropout rates in EBP trainings (Olin, Nadeem, et al., 2016; Vardanian et al., 2016).

Lessons for States. Electronic platforms for measuring and tracking specific clinical practices and outcomes are a critical component of the changing health care system. The implementation challenges are similar to those encountered in clinical EBP installation, and the solutions are likely to be similar: targeted consultation and personalized supports to assist providers in the use of the new technologies, along with incentives to use them. In addition, a more targeted approach to workforce training is needed, and it may prove to be more cost-effective in the long run. The implications for policy decision making is that these kinds of tools may be used not only for direct clinical monitoring but also by supervisors for supervision, by agencies for monitoring of clinical outcomes, and by midmanagement or upper management leadership to assess whether their agencies are meeting state or federally mandated benchmarks.

The Use of a New Workforce, Parent Advocates/Family Support Specialists, to Improve EBP Delivery

The effective implementation of quality mental health services matters only if youth and their parents use them. Thus, activation of parents to select, access, and use services is an important component of any effective system; active, engaged, questioning, and empowered parents are more likely to seek out and continue with effective services (Fristad, Gavazzi, & Mackinaw-Koons, 2003; Fristad, Goldberg-Arnold, & Gavazzi, 2002). In addition, parent partners have the potential to fill a huge gap in the behavioral health workforce, and improve child outcomes, as described in the two studies below.

The Parent Empowerment Program

In NYS, we have been studying parent activation and family support services. The latter are services delivered by parent partners, also known as "family support specialists." Parent partners are usually parents or guardians of children with mental disorders, who provide support and information to other parents. They also facilitate access to appropriate services, help parents navigate through complex systems, provide credibility, and model advocacy and collaborative skills. A parent partner training program, the Parent Empowerment Program, was developed with NIMH funding and has been scaled-up statewide and used to train and certify 650 parent partners since 2005 (for NYC's training and certification process, see *www.ftnys.org/family-peer-advocate*). The Parent Empowerment Program includes modules on engagement skills, information/education, emotional support, advocacy, and facilitating parent partner integration in the workforce, with emphases on roles, boundaries, and core competencies.

In another study, we are testing the impact of family support combined with an organizational intervention to better understand the *contexts* within which parent partners operate, and to help organizations *integrate* services provided by them. The study included development of program-level and individual parent partner-level *quality indicators* of best practices for family support specialists (Olin, Kutash, et al., 2014). These quality indicators were found to be significantly correlated with organizational climate and culture (Kutash et al., 2014; Olin, Williams, et al., 2014). The second phase of the study will examine the impact of the organizational intervention on agency-level processes and outcomes *and* provider-level processes and outcomes (e.g., EPIS; Aarons et al., 2011).

The Multifamily Group Study

As an extension of the family support services research, we have examined the use of parent partners in the delivery of an intervention known as multifamily group therapy (MFG) for children with disruptive behavior disorders. MFG is a service delivery strategy to enhance child service use and outcomes for urban, low-income children of color (McKay et al., 2011). The intervention, developed in collaboration with families of youth with disruptive behavior disorders, takes a common elements approach (Chorpita & Daleiden, 2009; Garland, Hawley, Brookman-Frazee, & Hurlburt, 2008) by integrating core components from the empirical literature regarding effective practices for disruptive behavior disorders (i.e., providing contingencies to support behavior change in youth, developing positive relationships within the family, and providing evidence-based engagement techniques to improve retention) (McKay, Nudelman, McCadam, & Gonzales, 1996; McKay, Stoewe, McCadam, & Gonzales, 1998). Core skills, processes, and methods are framed in a strengths-based perspective and delivered in a flexible manner through a partnership model with a parent partner and a clinician. In addition, MFG relies on multiple generations within a family, working collaboratively with other families in a group setting, as a way of decreasing the stigma associated with receipt of mental health services. Thus, MFG both increases engagement in services and provides an efficient service-delivery mechanism.

Findings from this study demonstrated that engagement strategies added to the implementation of the MFG increased retention of youth and families (80 vs. 10% completion of treatment), and decreased child disruptive behavioral symptoms and parenting stress (Chacko et al., 2015; Gopalan et al., 2015; McKay et al., 2011). The results show that a paired team model using parent partners, a service delivery model that is billable under Medicaid, improves family/child outcomes. This model improves the volume of services and results in robust show rates. In addition, individual and group models are available, thus making it adaptable for different settings. A follow-up study is currently under way as a hybrid effectiveness–implementation study. It is designed to test whether addition of a continuous and embedded quality improvement team within agencies will improve the *uptake* and *sustained use* of MFG over time, and improve child and family outcomes.

Lessons for States. Workforce expansion is needed to meet the service needs of children and families. The behavioral health workforce expansion includes teaching core evidence-based skills to paraprofessionals, parent partners, and community workers, among others. The findings from these studies suggest that the addition of parent partners to a team delivering clinical care can improve engagement in services and both child and family clinical outcomes. The implications for policymakers are that trained, credentialed, and skilled parent partners can be added to the workforce to reduce no-show rates (i.e., improve engagement) and to deliver billable (group-based) services. The cost implications of this expansion need to be assessed.

The Development of Quality Indicators to Improve the Delivery of Care for Adolescent and Maternal Depression

The development of quality indicators aligns with the general health care movement toward accountable care, as exemplified by the PACA (2010). Large administrative datasets—such as those available to state and academic researchers—can be valuable resources to examine the utility of proposed quality indicators in children's mental health. Quality indicators for child and adolescent mental health are still exceedingly rare (Zima et al., 2013). However development of them is happening and will likely increase in the future. A set of quality indicators for parent partners exists (Olin, Nadeem, et al., 2016), and they have been developed for adolescent depression (Lewandowski et al., 2013) and for prescribing psychotropic medication (National Committee for Quality Assurance [NCQA], 2016). Quality indicators for managing maternal depression in pediatric primary care are under development.

The Care Pathway for Adolescent Depression

As part of the Agency for Healthcare Research and Quality (AHRQ) Pediatric Quality Measures Program (PQMP), and in an effort to improve screening, diagnosis, and treatment of adolescent depression, a research team studied available guidelines and care pathways in the literature, and examined data from three different health care systems. A care pathway was developed and is being used to guide treatment of this serious mental health problem in health care settings (Lewandowski et al., 2013).

Lessons for States. Developing quality indicators for adolescent depression represents another opportunity to provide a lever for state health and mental health systems to improve the provision of care to adolescents with depression. State and health care system use of quality measures for child and adolescent mental health will continue to grow, and further development of sound and practical indicators are needed. Currently available quality measures are at *www.ncqa.org*.

The Use of a Corporate Retail Innovation to Improve Access to EBPs

Driven by the state's need for data on adolescents' access to clinical services, we designed a study to examine access to mental health care for adolescents with depression in all NYS OMH-licensed outpatient clinics. We used a simulated patient approach (Olin, O'Connor, et al., 2016). Adolescent depression was selected as a tracer condition because depression is common among adolescents, with up to 12% meeting full diagnostic criteria for depression (Eaton, Muntaner, Bovasso, & Smith, 2001; Merikangas et al., 2010; Substance Abuse and Mental Health Services Administration [SAMHSA], 2014). Although the sequelae of depression may be life threatening and effective treatments exist, data suggest that 60–80% of symptomatic adolescents do not receive appropriate care (Kataoka, Zhang, & Wells, 2002). Barriers to care are numerous (Mojtabai et al., 2011; Owens et al., 2002; Sareen et al., 2007).

Borrowing from the business world, we utilized a "mystery shopper" (or simulated patient) approach to assess appointment availability and wait times for psychiatry and therapy appointments, as well as availability of cognitive-behavioral therapy (CBT), an evidence-based psychotherapy for adolescents with depression. We also examined the variation in appointment availability and wait time for appointments by clinic characteristics (e.g., affiliation, payer mix, client mix), caller insurance type (Medicaid or private), season contacted (spring or summer), as well as clinic region (OMH-defined regions, metropolitan vs. nonmetropolitan county). We found that appointment availability did not differ by key clinic characteristics, region, or caller insurance type. Clinics that participated in state-sponsored trainings from the CTAC targeting specific ways to improve access (through improved business practices, such as centralized scheduling and walk-in hours) were more available. Disparities in wait times for psychiatry and psychotherapy were evident. Although callers were 4.1 times more likely to be able to schedule a psychiatry appointment in the spring, wait times for a psychiatry intake appointment were significantly longer in the spring than in the summer (49.9 vs. 36.7 days). Wait times for therapy appointments were significantly shorter in community-based clinics than in hospitals (19.1 days vs. 35.3 days). Regional differences were found for both psychiatry and psychotherapy wait times.

Lessons for States. Quality improvement tools used in the corporate world can be applied in state systems. This simulated patient approach was useful in monitoring the impact of health care changes. This "mystery shopper" strategy can likely be used more broadly to assess actual clinical practices in routine care. Documentation of the extent to which clinical care is actually in accordance with practice standards will be increasingly important as standards are more closely monitored. The simulated patient approach may be one tool that other systems can use to demonstrate changes in actual practice and to assess service availability. Furthermore, from a parent's perspective, this quality improvement tool can be very useful in providing feedback to agencies and states on how to improve intake protocols to decrease caregiver burden and frustration when making appointments and increase access to services for their children.

Summary of Implementation Studies

The Center for Implementation–Dissemination of Evidence-Based Practices among States (IDEAS Center) research, described in the case studies just discussed, is guided by adaptations of the PRISM and EPIS models. In our use and adaptation of these models, we describe how five innovative tools and strategies to support EBP and quality improvement rollouts at the state level are influenced by multiple levels: (1) the state system context (e.g., EBP quality improvements, financing, implementation, and sustainability infrastructure), and characteristics of the (2) agencies, (3) providers, and (4) consumers (see Figure 27.2). States seeking to improve the

Tailor rollouts of EBPs	States should tailor rollouts of EBP's to match the characteristics of clinics—clinics' *structural, fiscal, and organizational characteristics* affect their participation in EBP rollouts and other technical assistance training programs.
Build and/or expand electronic platforms	States should build and/or expand electronic platforms for measuring and tracking specific clinical practices, patient outcomes, and overall clinic/agency outcomes; installation/expansion of these systems should be paired with *targeted consultation and workforce training and personalized supports and incentives* for providers
Expand BH workforce using parent partners	States can expand the behavioral health care (BH) workforce using *trained, credentialed, and skilled* parent partners (or other community health care workers) to reduce no-show rates (i.e., improve engagement) and to deliver billable (group-based) services.
Use quality indicators as lever to improve care	Quality indicators (e.g. adolescent depression) can and should be used as a lever for state health and mental health systems to improve the provision of care to children and families.
Use quality improvement tools to assess care, decrease burden	Quality improvement tools (e.g. simulated patient or "mystery shopper" approach) can be used by states to assess actual clinical practices in routine care, which will be more closely monitored in the future; these tools can also be useful in providing feedback to improve intake protocols to decrease caregiver burden.

FIGURE 27.2. Lessons learned for state scaling of EBPs.

effectiveness and efficiency of their EBPs and other quality improvement rollouts must attend to the factors within each of these levels. Our implementation research is focused on those key constructs identified as potentially influencing implementation outcomes, with specific attention to *consumer-* (i.e., families, parents, and children) and *agency-* (i.e., clinic and providers) level contexts. Our adapted PRISM model guiding our work suggests that *family-level implementation strategies* that seek to increase parental engagement and empowerment, *and agency-level strategies* that seek to change agency social context (including provider behavior), are both necessary for quality improvement. Family-level strategies are likely to reduce barriers to care and improve retention and treatment completion among children and families; agency-level strategies are likely to improve agency proficiency in delivering and integrating EBPs and supportive technologies.

MAKING DISSEMINATION AND IMPLEMENTATION RESEARCH RELEVANT TO THE CHANGING BEHAVIORAL HEALTH CARE LANDSCAPE

The dynamism—some might say "chaos"—of the health care system and of states requires a different set of partnerships, research questions, methods, and mindsets. Yet aligning research, practice, and policy to inform installation of EBPs—and to affect population-level access for children to quality mental health services—is the ethical crown jewel. In NYS, through our close partnership with policy leadership, we have deliberately selected and tested five system strategies—the use of technical assistance, health information technology, parent partners to augment the behavioral health workforce, the development of quality indicators, and corporate quality tools.

We focused on these five strategies both to deploy empirically based practices to as many practitioners as possible, *and* to simultaneously build a knowledge base on how best to implement effective practices so that they will stick. We have been marginally successful. The work has been excruciatingly slow, and setbacks, delays, and refinements in our plans have been needed every step of the way. Yet, in each instance, the findings have been translated into policy action by state policy leadership to reach a broader swathe of the population. Sometimes the action has been incremental and small; at other times, it has spread to the entire state quickly. For example, in the MAP project, 1,600 clinicians have been trained to provide EBPs within the state's 350 child-serving clinics; the MAP project has been funded for an additional 5 years to sustain training of these clinicians. Our parent partner training program (The Parent Empowerment Program) was adopted by NYS, and 650 parent partners have been trained since 2005. Our model of integrating parent partners within the MFG intervention for disruptive disorders has been delivered to 3,000 children, and the newest research–practice partnership will spread this intervention to another 3,000 while testing implementation strategies to sustain the gains. Through this portfolio of implementation research, we have generated an empirical base to guide other state efforts to fit evidence-based interventions within "real-world" service systems. It is our hope that these research findings will foreshorten the well-acknowledged delay of 17 years between research and practice, and expand the meager percentage (14%) of research findings that are used to change practice (Balas, 1998).

Unique challenges, however, constantly threaten EBP implementation research. And they require a mindset and an approach that are also unique. Because change in state systems is not only inevitable but also driven by the machinery of power, there is usually little room for scientific input. In contrast to health care systems, which are usually driven by a commitment to evidence, state systems vary in their respect for evidence. Conducting science within a political environment necessitates clear boundaries about where compromises can, or cannot, be made. It requires translation and back-translation between those crafting policy and those pursuing data-driven answers. Tensions may arise when policymakers need to make rapid policy decisions, but research findings are not ready for statewide implementation. Misunderstandings can arise if there is not recognition that some questions cannot be answered at all, most are not answered quickly, and continuous evaluation is needed to assess the real impact of implementation efforts.

In addition, because failure is an inevitable part of any innovation, including the testing of innovations (Johnson, 2010), it is important to catalogue and use a set of implementation salvage strategies when plans and processes go awry. For example, in a study of the implementation of CBT for child trauma in New York City, after the World Trade Center attack, the comparison condition was mandated by the Federal Emergency Management Agency (FEMA) to receive a set of interventions similar to that of the experimental group. To be able to contrast the treatment effects, we included two statistical and design adaptations to the evaluation: propensity matching to compare characteristics of the two groups, and a regression discontinuity design, to contrast impact for those scoring above and below a clinical cutoff. The ability to adapt "on the fly" to these changes enabled the study to yield findings that were useful for subsequent expansion of the interventions (Hoagwood et al., 2007).

FUTURE DIRECTIONS

The fledging field of implementation science in state systems is shaped irrevocably by the changes that are occurring as the health care system assumes greater responsibility for the mental health of children and their families. These changes require states and providers to pay closer attention to data and evidence. This has been called the third and fourth paradigm shifts (Hey, Tansley, & Tolle, 2009; Kitchin, 2014), a result of new technology that allows the collection of more data at a more granular level, which is being utilized in more sophisticated and advanced ways in analysis and eventually in systems where it was generated. These shifts are resulting in greater emphasis on population-based and personalized medicine; however, this necessitates the development of research methods, measures, designs, and strategies that are flexible and adaptable, and that focus on outcomes, accountability, and evidence.

We believe that the growing use of data to inform decision making, and the drive to expand health care quality improvement, will refashion the services research agenda to focus less on trials of narrow clinical interventions—and more on designing, enacting, and sustaining large system changes. States are a fertile laboratory for such work, and can benefit from it when the work is fashioned collaboratively. The success of the collaboration lies in the close working relationship between both parties, and the respectful, frequent, and open dialogue on what might make services more effective, their delivery more efficient, and the findings from research more relevant. This dynamic partnership can support the development of evidence-based policies (to complement and extend evidence-based practices and evidence-based treatments).

The emerging focus on accountability fueled by PACA (2010), coupled with increasingly integrated systems of behavioral health and primary care, need further examination and evaluation in the context of EBP implementation. We are currently collaborating with NYS's health, substance abuse, and mental health systems to test interventions to improve this integration. We are a long way from having evidence-informed policies that routinely guide delivery of mental health services. But the work has begun, and systems, whether they are states or health care plans or behavioral health networks, are a fertile if challenging laboratory for policy-relevant research. Framing questions to test the impact of policy decisions on health services delivery is an important new direction for creating policy–academic partnerships.

CONCLUDING COMMENTS

The research base on psychotherapies for children and adolescents is strong and getting stronger. However, to enable this knowledge to be used to improve the mental health of children and families, an *equally strong evidence base on implementation of effective therapies in different systems* needs to be developed. There are impressive studies under way to help build this knowledge base, including studies in a range of settings and systems, such as schools, primary care offices, foster care, juvenile justice, and specialty clinics. As knowledge about implementation effectiveness grows, evidence-based policies can be developed to guide decisions about allocation of resources and maintenance of quality care. Ultimately, directing studies towards the policy levers that drive health care changes will maximize the impact of research and positively affect the lives of children and families.

ACKNOWLEDGMENTS

The authors' research reported in this chapter was supported by grants from the National Institute of Mental Health (No. P30MH090322–05), and the New York State Office of Mental Health (EBTDC, No. C008419), and the Community Technical Assistance Center (No. C007542). Portions of this chapter were excerpted from Hoagwood et al. (2014). Copyright © 2014 Division 53, American Psychological Association. Reprinted by permission.

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CHAPTER 28

Using the Science of Developmental Psychopathology to Inform Child and Adolescent Psychotherapy

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The science of developmental psychopathology has advanced markedly in recent decades and, consequently, has a great deal to offer to those who design, implement, and evaluate interventions for children and adolescents. In this chapter, we examine the contributions that a developmental psychopathology framework can make to improve the relation between theory and intervention with children and adolescents. An ongoing goal of developmental psychopathology has been not only to connect fields of study and aid in the discovery of important new truths about the processes and mechanisms underlying adaptation and maladaptation across the life course but also to provide the best means of preventing and ameliorating maladaptive and pathological outcomes (Cicchetti & Toth, 2009). Moreover, the field of developmental psychopathology has continuously sought to reduce the dualisms between empirical research and the treatment of childhood, adolescent, and adult high-risk conditions and disorders, between the behavioral and biological sciences, and between basic and applied research (Cicchetti & Toth, 2009).

Although advances have been made in breaking down the barriers that exist between basic and applied research and between practitioners and researchers, considerable work remains to be done before the potential of developmental psychopathology to foster improved interventions can be fully realized. It is our conviction that the principles of developmental psychopathology provide a much-needed conceptual scaffolding of the multidisciplinary integration, as well as foster an increased synergy between research and intervention. A developmental psychopathology perspective will help to build more robust therapies for children and adolescents that are effective in clinical practice (Weisz, 2014).

Developmental psychopathology has played a significant role in contributing to the development of clinical initiatives directed toward the prevention and treatment of mental disorders. By elucidating developmental mechanisms that are linked with the initiation or avoidance of maladaptation and psychopathology, theoretically informed interventions have been developed and evaluated (Cicchetti, Rogosch, & Toth, 2006; Dozier, Peloso, Lewis, Laurenceau, & Levine, 2008; Izard, Fine, Mostow, Trentacosta, & Campbell, 2002; Toth, Rogosch, Manly, & Cicchetti, 2006). However, greater incorporation of developmental theory into intervention designs remains a critical undertaking.

PRINCIPLES OF DEVELOPMENTAL PSYCHOPATHOLOGY

Normative and Atypical Development

The essence and uniqueness of a developmental psychopathology perspective lies in its focus on both normative and atypical, adaptive and maladaptive, developmental processes. A basic theme in the writings of the early systematizers in the field is that because all psychopathology can be conceived as a distortion, disturbance, or degeneration of normal functioning, it follows that if one wishes to comprehend psychopathology more fully, then one must understand the normal functioning with which psychopathology is compared (Cicchetti, 1984). Not only is knowledge of normal biological, psychological, and social processes exceedingly useful for assessing, diagnosing, understanding, preventing, and treating psychopathology, but it also provides the backdrop against which the deviations from and distortions of normal development may be better investigated and understood.

Developmental psychopathology is not primarily the study of disorders. This is not to say that the field does not seek to enhance our understanding of psychopathology; however, the central focus of developmental psychopathology is the elucidation of developmental processes and how they function as indicated and elaborated by the examination of extremes in developmental outcome. Such extremes contribute substantial diversity to the possible outcomes in development, thereby enhancing our understanding of developmental processes.

Additionally, developmental psychopathologists are interested in variations in the continuum between the mean and the extremes. These variations may represent individuals who currently are not divergent enough to be considered disordered, but who may progress to further extremes as development continues. Such individuals may be vulnerable to developing future disordered outcomes. Diversity in process and outcome are hallmarks of the developmental psychopathology perspective. The principles of equifinality and multifinality derived from general systems theory are relevant in this regard (von Bertalanffy, 1968). "Equifinality" refers to the observation that a diversity of paths may lead to the same outcome. In contrast, "multifinality" suggests that any one component may function differently depending on the organization of the system in which it operates (Cicchetti & Rogosch, 1996). For example, research in molecular genetics suggests that maltreated children's risk for psychopathology is not inevitable. Gene–environment interaction (G × E) occurs when the effect of exposure to an environmental pathogen (e.g., child maltreatment; Karg, Burmeister, Shedden, & Sen, 2011) on a behavioral, health, or biological phenotype is conditional on a person's genotype or, conversely, when the genotype's effect is moderated by the environment.

Individual Differences

Another major goal of developmental psychopathology is to comprehend individual patterns of adaptation and to understand the "whole organism" (Sroufe & Rutter, 1984; Zigler & Glick, 1986). As a consequence, calls for interdisciplinary research and a multiple-levels-of-analysis approach have been gaining momentum (Cicchetti & Dawson, 2002; Cicchetti & Posner, 2005). The resultant more sophisticated and comprehensive portrayals of adaptation and maladaptation that ensue will serve not only to advance scientific understanding but also to inform efforts to prevent and treat psychopathology.

Informing Developmental Theory

In addition to its applicability to guiding and contributing to the evaluation of interventions for children and adolescents, a developmental psychopathology perspective may facilitate the testing of claims of extant normal developmental theories (Hinshaw, 2002; Kellam & Rebok, 1992; Koretz, 1991). For example, if the developmental course is altered as a result of the implementation of interventions and the risk for negative outcomes is reduced, then intervention research will be able to contribute to specifying the processes that are involved in the emergence of maladaptive developmental outcomes and psychopathology (Howe, Cicchetti, & Toth, 2006; Ialongo et al., 2006). As veridical experiments in modifying the developmental course, prevention and intervention trials can provide essential insight into affirming, challenging, and augmenting existing developmental theories and into discovering the etiology and pathogenesis of disordered outcomes.

To provide a specific example, if an intervention targeted at reducing aggression in grade school is subsequently related to a reduction in delinquency, then evidence that early aggressive behavior is a contributor to a developmental pathway culminating in delinquency has been obtained. In addition, prevention trials or microtrials (Thibodeau, August, Cicchetti, & Symons, 2016) can provide knowledge on the malleability of various components of the developmental model being studied when different types of interventions are provided. Thus, important information can be garnered on how best to intervene in the process of development so as to stem a psychopathological process.

Informing Intervention

Because development is viewed as a naturally unfolding, dynamic process that emerges from the child and his or her characteristics, in combination with the caregiving environment, issues related to whether or not to intervene also require careful evaluation. Decision making related to the development and provision of intervention services that is not theory-informed and data-driven is all too frequently the norm. Especially disconcerting is the lack of incorporation of data on developmental processes into this decision-making process. Developmental differences among children and adolescents, and the implications of these varied capabilities for intervention, need to be considered (Shirk, 1988; Weisz, 1997).

Recent research on differential susceptibility (Ellis, Boyce, Belsky, Bakermans-Kranenburg, & van IJzendoorn, 2011), wherein children differ with respect to positive or negative outcomes depending on environmental contexts, holds considerable promise for the development and implementation of interventions. This conceptual framework suggests that randomization of children with varied levels of susceptibility into various arms of an RCT could provide unprecedented insights into "what works for whom and why" (Fonagy et al., 2015; Roth & Fonagy, 2005).

Genetic Variation and Intervention Outcome

Genetic variation also may affect the ways in which individuals vary in their responsiveness to positive and negative experiences. These individual differences may operate differently at different developmental periods. Moreover, the effects of prior development may influence the effects of genes and experience during a particular developmental period. In addition, environmental experiences may affect the timing of genetic effects and gene expression. For example, outcomes might vary as a function of factors such as when in the developmental period a depressive episode first occurred and the severity and chronicity of the depression. Consistent with prior research (Heim & Binder, 2012), genetic moderation of outcome also might be expected to vary due to the presence or absence of trauma. For example, the serotonin-transporter polymorphism (*5-HTTLPR*) G × E interactions not only predict depression symptoms, but also impact other stress-related disorders and phenotypes. This suggests that a combination of *5-HTTLPR* genotype and stressful life events or early trauma moderates the susceptibility to a number of stress-related outcomes (Caspi, Hariri, Holmes, Uher, & Moffitt, 2010). Furthermore, experience exerts effects on the epigenome, and these also would be likely to operate differently across the course of development. Research on gene–environment interaction and epigenetics needs to incorporate, as well as emphasize, a developmental perspective. Genes may affect how environmental experience affects the developmental process, and this may operate differently at various developmental periods. Moreover, the effects of genes and experience at a particular period may be influenced by the effects of prior development. Environments may affect the timing of genetic effects and gene expression. Moreover, epigenetic mechanisms may be realistic targets for intervention due to their reversibility (Szyf & Bick, 2013).

There appear to be many ways whereby there can be genetic effects on intervention efficacy. For example, as demonstrated here, some individuals may be more susceptible to the positive effects of intervention. Alternatively, different interventions may be more efficacious with different individuals as a function of their genetic makeup. This suggests that specific interventions may be able to be matched to an individual's genotype group. Intervention also may affect DNA methylation, resulting in changes in gene expression that may differ across developmental periods. Perhaps DNA methylation changes in response to intervention could eventuate in the design of both prevention and intervention strategies that alter the expression of genes to optimize and promote healthy physical and mental health outcomes.

In a related sense, the fact that individuals with the same diagnosis often vary with respect to their responsivity to the same therapeutic intervention further highlights the roles that genetic variation and different environmental stressors play in contributing to intervention efficacy. In accord with a developmental psychopathology perspective, we also maintain that a consideration of developmental factors will enhance the ascertainment of interventions that are differentially effective for individuals with differing genotypes and experiences of adversity (G × E × Development). Although the burgeoning research on the genetic moderation of intervention outcome might lead the overly zealous to conclude that we are poised to provide interventions based on different genetic profiles, we caution against this premature conclusion. Given the complexity of mental illness and the methodological challenges that accompany G × E investigations of intervention efficacy, extensive replications and carefully designed studies that clearly define the characteristics and risk environments of participants are needed. Even in the absence of genetic moderation, we know far too little about mediators of intervention outcome. We share the belief that the conduct of high-quality research that incorporates progress in genetic and epigenetic technology has the potential to inform a more person-specific approach to the provision of intervention, but that it is neither likely, nor even advisable, that this goal will be achieved in the short-term (Uher, 2011). It is important that research suggesting that individuals with a particular genotype are less likely to respond positively to certain interventions impel us to continue to develop and evaluate interventions that are more likely to help those who have not yet benefited, ultimately contributing to reductions in the overall burden of mental illness for individuals, families, and society.

Developmental Pathways

Psychopathology unfolds over time in a developing organism; therefore, it is critical to adopt a developmental perspective in order to understand the processes underlying individual pathways to adaptive and maladaptive outcomes (Cicchetti & Rogosch, 1996; Sroufe, 2007). A developmental analysis presupposes change and novelty, highlights the critical role of timing in the organization of behavior, underscores multiple determinants, and cautions against expecting invariant relations between causes and outcomes (Cicchetti & Dawson, 2002; Cicchetti & Pogge-Hesse, 1982; Cicchetti & Rogosch, 1996; Sroufe, Egeland, & Kreutzer, 1990). Moreover, a developmental analysis is as applicable to the study of the gene or cell as it is to the investigation of the individual, family, or society (Cicchetti & Toth, 2009).

A developmental analysis is essential for tracing the roots, etiology, and nature of maladaptation, so that interventions may be timed and guided, as well as developmentally appropriate. For example, risks associated with pubertal changes during adolescence may differ in early- versus late-maturing boys, with later-maturing boys at risk for impaired self-esteem (Petersen & Crockett, 1985) and early-maturing boys more likely to engage in risky behaviors (Williams & Dunlop, 1999). In addition, a developmental analysis proves useful for uncovering the compensatory mechanisms—biological, psychological, and social-contextual—that may be used to promote resilient functioning despite the experience of significant adversity (Masten & Cicchetti, 2016).

A developmental analysis strives to examine the prior sequences of adaptation or maladaptation in development that have contributed to a given outcome in a particular developmental period. Because developmental psychopathology assumes a lifespan view of developmental processes and aims to delineate how prior development influences later development, a major issue in the discipline is how to determine continuity in the quality of adaptation across developmental time. The same behaviors in different developmental periods may represent quite different levels of adaptation. For example, behaviors indicating competence within a developmental period may indicate incompetence within subsequent developmental periods. Normative behaviors, such as dependency, manifested early in development may indicate maladaptation when exhibited at a later time. The manifestation of competence in different developmental periods is rarely indicated by isomorphism in behavioral presentation.

AN ORGANIZATIONAL PERSPECTIVE ON DEVELOPMENT

Across the developmental course, the evolving capacities of individuals and their active choices allow for new aspects of experience, both internal (i.e., biological) and external, to be coordinated in increasingly complex ways. The organizational perspective sees development not as a series of tasks that need to be accomplished and that subsequently decrease in importance; rather, development is conceived as comprising a number of age- and stage-relevant tasks from infancy through adulthood. Although the salience of these tasks may wane in relation to newly emerging issues, the tasks remain important to adaptation over time (Sroufe, 2013). A hierarchical picture of adaptation emerges in which the successful resolution of an issue salient at an early stage increases the probability of subsequent successful adjustment. As each new stage-salient issue comes to the fore, opportunities for growth and consolidation, as well as challenges and new vulnerabilities, arise.

At each developmental transition, individuals are confronted with specific developmental tasks central to that era (Sroufe, 1979; Waters & Sroufe, 1983). From infancy through adulthood, new developmental tasks arise during sensitive periods that are of primary importance during their particular stage of ascendance (e.g., secure attachment, differentiation of affect, emotion regulation, autonomous self-system, effective peer-relations). Through differentiation and hierarchical integration, the quality of the resolution of each stage-salient issue is coordinated with the prior organization of biological and behavioral systems and reorganization occurs, moving individuals forward in development. The quality of the resolution of each state-salient issue primes the way subsequent developmental issues are likely to be negotiated. It is through their active role in the ontogenetic that individuals begin to proceed down different developmental pathways. An individual's functioning on the salient issues of his or her developmental period has implications for the type (or types) of intervention that would be most or least efficacious. For example, the presence of insecure attachment with caregivers suggests the importance of providing a relationally based intervention such as child–parent psychotherapy (Lieberman & Van Horn, 2005), whereas negative self-representations in preschoolers point to the implementation of an intervention directed toward the modification of cognitive correlates associated with depression, such as cognitive-behavioral therapy (Hollon & Beck, 2013).

For example, the provision and evaluation of an RCT for maltreated infants was based on research identifying insecure and disorganized attachments with caregivers as a significant area of maladaptation (Barnett, Ganiban, & Cicchetti, 1999; Carlson, Cicchetti, Barnett, & Braumwald, 1989). Cicchetti et al. (2006) conducted an attachment theory informed (Bowlby, 1969/1982) RCT of an intervention for maltreating mothers and their infants. Infants from maltreating families and their mothers were randomly assigned to one of three intervention conditions: (1) child–parent psychotherapy (CPP), (2) a psychoeducational parenting intervention (PPI), and (3) community standard (CS) controls. A fourth group of infants from nonmaltreating families and their mothers served as an additional low-income normative comparison (NC) group. At baseline, infants in the maltreatment groups had significantly higher rates of disorganized attachment than infants in the NC group. In a postintervention follow-up at age 26 months, children in the CPP and PPI groups demonstrated substantial increases in secure attachment, whereas increases in secure attachment were not found for children in the CS and NC groups. Moreover, disorganized attachment continued to predominate in the CS group.

Somewhat surprisingly, both CPP, a relational intervention, and PPI, a nonrelational intervention, were found to be equally efficacious in fostering secure attachment and in reducing disorganized attachment in infants from maltreating families. However, in a 1-year longitudinal follow-up examining the sustained efficacy of these intervention models, only CPP was found to be efficacious in continuing to promote security of attachment over time (Pickreign Stronach, Toth, Rogosch, & Cicchetti, 2013). These findings suggest that in cases of extremely maladaptive parenting, more intensive models of intervention that go beyond parent skills training (e.g., CPP) may be necessary. The translation of knowledge from the field of developmental psychopathology into the conduct of this clinical trial underscores the importance of broadening such efforts.

Because each stage-salient issue is a lifelong task that is integrated and coordinated with each subsequent issue, no one is ever completely inoculated against or totally doomed to maladaptive and/or psychopathological outcomes. Individuals are continuously affected by new socioemotional and biological experiences. Thus, changes in the biological and socioemotional conditions in their homes and in their course of adaptation—positive or negative—remain possible throughout the lifespan. Despite this possibility, however, prior adaptation does place constraints on subsequent adaptation. In particular, the longer an individual persists along a maladaptive pathway, the more difficult it is to reclaim a normal developmental trajectory.

We maintain that in the absence of a developmental perspective, many validated and potentially rich intervention strategies may not be as efficacious as they might be were they more sensitive to principles of developmental psychopathology. For example, the provision of cognitive-behavioral therapy, a highly efficacious intervention for a number of disorders, needs to consider the cognitive capacities of a child, independent of chronological age. If language skills and the ability to understand cause-and-effect relations are not sufficiently developed, then this efficacious intervention will be doomed to fail.

In accord with a developmental perspective, behavior is seen as resulting from a combination of genes, environment, the history of prior adaptation, and current experience. A developmental model of disturbance results in different approaches to assessment and treatment than that embodied by a classic medical model. Rather than seeking main effect causes of disorder and assuming that a particular treatment will be equally effective for similar symptom presentations, developmentalists raise queries such as "How do individual children get off track? When going off track, what deviating track is a particular child likely to take? What influences tend to maintain them on the track they are on, and what would be required to bring them back to a more serviceable developmental pathway?" (Cicchetti & Rogosch, 1996; Sroufe, 1997).

Clearly, the answers to the aforementioned questions versus a quest for a single endogenous disease pathogen, as in the classic medical model, dictate very different approaches to assessment and intervention. According to the classic medical model, children traveling along diverse pathways would erroneously be treated the same, which might exacerbate rather than ameliorate the symptoms of the child with the less severe prognosis. Helping parents to understand these differences in trajectories is also likely to be integral to intervention effectiveness.

In contemplating the implications of a hierarchical "developmental model" for intervention, questions arise regarding the manner in which intervention should proceed. It may be the case that the achievement of competent functioning on stage-salient developmental issues that had been unsuccessfully resolved would follow the same emergence as that observed during normal development. If so, then important conclusions could be drawn regarding the identification of precursors to recovered functioning in children and adolescents who have a psychiatric disorder, and such information could be incorporated into the psychotherapeutic arena. Specifically, the issue of whether later stage-salient issues can be reworked positively without addressing earlier issues becomes a critical question. For example, is it possible to help an individual gain a positive sense of self without addressing the origins of a self-view that may have derived from an insecure attachment to his or her caregiver? Conversely, might it be possible that attention to a current salient issue could reverberate to earlier issues, resulting in an overall reorganization of early issues as well, with a related decision not to intervene on earlier issues? Because the concept of hierarchical integrations posits that early issues become coordinated with later issues, one might argue that a similar reverse process would occur, wherein earlier issues could benefit from positive resolution of currently salient developmental issues.

DEVELOPMENTAL CONSIDERATIONS AND INTERVENTION

At least partially as an outgrowth of a developmental psychopathology perspective, those interested in understanding atypical development and in applying this knowledge to the prevention and remediation of psychopathology have become increasingly sensitive to the developmental dimensions of treatment. Psychotherapists, for example, have become more cognizant of the fact that no particular treatment is likely to be effective throughout the life course. Moreover, even children of similar ages cannot be viewed as a unitary group. Noam (1992), in discussing developmentally informed interventions for adolescents, emphasizes that adolescents' worldviews are defined by the meaning systems that they use to understand themselves, their peers, and their parents. Accordingly, Noam advocates that different methods of therapy must be provided that account for differences in symptoms, cognition, and patterns of recovery from illness. In order to provide effective psychotherapeutic interventions, an in-depth understanding of each individual's developmental organization is necessary. This is especially critical in childhood, a period during which developmental transformations and reorganizations are much more rapid than those seen in adulthood.

Attention to factors such as when during the developmental course and why a disorder occurred, how long it continues, and what precursors to the disordered functioning could be identified all require a developmental approach to ensure that prevention and intervention strategies are appropriately timed and guided. In fact, the developmental timing of an intervention may be even more important than its content. Minimally, the effect of an intervention will be enhanced or inhibited in relation to its sensitivity and responsivity to factors associated with the developmental period during which the intervention is provided. Similarly, interventions may need to take into consideration the developmental period during which a pathology-inducing insult occurred, even if the actual referral for treatment occurs years later. For example, in cases of sexual abuse that may have occurred when a child was preverbal, the utilization of verbally mediated intervention strategies may not be as effective as more experiential approaches, such as play therapy, because the memory of the abuse may not have been ever encoded verbally (Howe, Cicchetti, & Toth, 2006). To provide another example, in instances of childhood depression, the developmental period during which a stressor occurred that may have contributed to the initiation of an affective disorder must be considered. If a child suffered the loss of a parent during toddlerhood, a period when individuation and autonomy are central, then the loss of the parent may have ramifications that are more significant than they would have been if the loss had occurred in later childhood. Issues such as these must be informed by the knowledge of when in development a negative trajectory that culminated in disorder started.

In addition, for factors related to where in the developmental course the initiation of a pathological process may have occurred, an understanding of children's developmental competencies also is necessary. Shirk (1988) discusses the role of development in children's ability to benefit from psychotherapeutic interpretations. Specifically, developmental domains such as causal reasoning, emotion understanding, self-understanding, and language ability all must be understood and attended to when providing interventions to children and adolescents.

Generally, there is a consensus that a primary goal of psychotherapy is to help a child construct a new understanding of the internal or external issues that may be contributing to behavioral problems that led to a referral for psychotherapy. Such understanding is thought to occur through the therapist's use of interpretations. However, the fact that such techniques are only as effective as the child's ability to understand the interpretive process is not as widely discussed. Failing to consider children's developmental competencies can lead to the misinterpretation of behaviors both within and outside of the therapeutic context, as well as to the utilization of psychotherapeutic techniques that are inappropriate for the child's developmental level. Moreover, because various risk or psychopathological conditions may be associated with developmental perturbations and/or lags, age alone cannot be used to judge a child's ability to benefit from a given intervention. For example, maltreated children have been found to evidence decreased internal-state language for physiological states and negative affect (Beeghly & Cicchetti, 1994). Although it is unclear whether these lags represent actual language deficits or, rather, an adaptive response to monitoring language that might upset a maltreating caregiver, the implications of these differences must be considered in the provision of child psychotherapy. Therefore, trying to utilize normative guidelines to determine whether a maltreated child could benefit from a verbally mediated intervention might result in erroneous conclusions. Research also has shown that maltreated children evidence dysfunctions and perturbations in their self-systems, typically presenting as having less positive self-views. It may be that self-system deficits limit the kinds of interventions that can be provided to maltreated children. In fact, we would argue that very time-limited interventions that do not consider relationship issues as integral to psychotherapeutic change are likely to be ineffective in working with youngsters who suffer from self-system pathology (Toth, Gravener-Davis, Guild, & Cicchetti, 2013). Issues such as these must be considered when determining which interventions are likely to be beneficial.

For example, the tendency for maltreated toddlers to use fewer internal state words (i.e., self-language) may stem from parental disapproval of the expression of affect or of a certain class of affects (e.g., negative affect; Beeghly & Cicchetti, 1994). These children may become overcontrolled in efforts to meet parental demands. Because a maltreating parent may have difficulty tolerating affective displays, alternative caregivers may be necessary. However, the fact that the overcontrolled stance of maltreated children is likely to serve as an adaptive coping strategy for the maltreated child must not be disregarded (Cicchetti & Rogosch, 1996). For example, if a child is taught to verbalize anger, the parent must be able to deal with increased expression adaptively rather than punitively. Altering the toddler's mode of interacting without ensuring the environment's ability to tolerate this change would be a disservice. Therefore, intensive work with the parent must precede a child-focused intervention. In lieu of this, the use of alternative caregivers or permanent foster placement may need to be considered.

Although child psychotherapy outcome research typically has not considered developmental level of the child, conceptual links between cognitive development and therapeutic outcome have been made. Cognitive developmental growth also has been conceptualized as a goal of intervention (Noam, 1992) or as a way of promoting therapeutic growth across domains of development. Regardless of one's conceptual focus, sufficient knowledge of development and its role in the therapeutic process is likely to be a critical contributor to outcome in child therapy.

THE DEVELOPMENTAL COURSE OF ILLNESS

Issues related to the developmental course of illnesses also possess implications for intervention. Because, as previously discussed, various pathways may lead to similar outcomes and, conversely, a similar pathway may lead to diversity in outcome, it is important that clinicians utilize appropriately varied treatment strategies.

For example, children's developmental histories, stage in life cycle, their current functioning and developmental organization across psychological and biological domains, and the characteristics that define a given disorder all must be factored into the process of treatment planning.

Likewise, interventions should be directed at a range of developmental domains (e.g., cognition, language, emotion, representation) rather than assuming that a given form of psychopathology can be addressed by focusing exclusively on a single domain of development. This perspective holds true even for conditions that might be considered the outgrowth of a predominately biological insult or characteristic, as maladaptation in one domain is likely to affect functioning in other domains. Thus, interventions must address the broader matrix of causal influences and sequelae if successful and sustained progress is to occur.

FUTURE DIRECTIONS

Because one of the principles embodied by developmental psychopathology advocates a reduction of the schisms between normality and abnormality, biology and psychology, and research and practice, an integration among these areas can improve our understanding of risk conditions and mental disorders and, consequently, of treatments and interventions. However, before the full extent of this potential can be realized, individuals must increase their receptivity to a developmental psychopathology approach.

In the upcoming decades, increased attention needs to be directed toward developmental issues in the design, provision, and evaluation of interventions for children and adolescents. Despite repeated calls for such research (Cicchetti & Toth, 2015), comprehensive studies of issues such as the identification of developmental windows during which the provision of intervention is most likely to affect optimal development have been slow to emerge. Relatedly, when an individual has experienced a significant stressor or a traumatic event, it remains unclear at what point the provision of intervention is most likely to be effective in alleviating future negative sequelae. Although the reasons for this gap between what we know and its incorporation into intervention are unclear, as discussed by Weisz and Hawley (2002), a number of issues may be operative. Developmental and treatment research have different goals, with the former being more descriptive and the latter more prescriptive. Because developmental research typically results in group data that interventionists may not consider applicable to an individual client, therapists may be less likely to incorporate research knowledge into treatment planning. Finally, the rigorous exclusion of comorbid disorders in many clinical trials may reduce the generalizability of findings to the clinical arena. Although certainly challenging, studies that attend to issues of developmental timing of intervention and its relation to outcome are of paramount importance.

As we have emphasized throughout this chapter, developmental correlates must be factored into the design and implementation of prevention and intervention services. Similarly, in evaluating the effectiveness of services, a developmental perspective is necessary. Just as the concomitants of a risk or pathological process may vary as a function of the developmental period during which a given event occurred, so, too, may the effectiveness of therapy depend on the sensitivity of the approach to developmental considerations. Because research is increasingly demonstrating varied consequences of disorders at different periods of ontogenesis, the design and targeting of intervention toward the sequelae associated with specific developmental issues is a promising direction to pursue in the provision of intervention.

The realization of the exciting potential that developmental psychopathology holds for informing and evaluating intervention efforts also requires enhanced fidelity between the complexity of theoretical models that are proffered and the measurement and data-analytic strategies that are utilized in our investigations (Richters, 1997). Relatedly, clinical and research efforts must not focus exclusively on group-level information but, rather, must examine processes that underlie functioning in different individuals. For example, Weisz and Hawley (2002) highlight the importance of attending to cognitive dimensions in treatment with adolescents given that cognitive capacities may moderate treatment outcomes, and these capacities can vary markedly among adolescents. The presence of equifinialty and multifinality in development suggests that we must increasingly strive to understand multiplicity of processes and outcomes that exist at the level of the individual as opposed to adopting the prevailing variable-oriented approaches (Bergman & Magnusson, 1997). It is clear that intervention strategies can best be informed by data derived from investigations that were designed to capture the differential pathways to adaptation and maladaptation (Cicchetti & Rogosch, 1996). For example, it may become increasingly possible to identify individuals who are provided with a certain type of intervention based not simply on their diagnosis, but on their individual developmental organization. Issues such as the individual's degree of introspectiveness versus a tendency to externalize responsibility for outcome could play an important role in the kind of intervention that a therapist chooses to provide, and, consequently, on the effectiveness of intervention.

The role of developmental transitions in the emergence or remediation of a psychopathological process also underscores the importance of devising service continuua for children and adolescents. Because developmental transitions provide challenges, as well as opportunities for growth, the utilization of periods of change and reorganization as therapeutic ports of entry is likely to result in more effective and enduring psychotherapeutic benefits. Of course, such a perspective requires a departure from a more status quo approach to the delivery of mental health services, whereby payment is rendered in response to a circumscribed and specific mental disorder. Unless administrators in the service delivery system recognize the criticality of not only addressing psychopathology but also preventing the emergence of disorders and of promoting wellness (Cowen, 1994), the costs for the provision of services to mentally ill children will continue to exceed what might be achieved if intervention were initiated earlier in the developmental process. To adequately achieve the necessary comprehensive service delivery system, the historical compartmentalization among mental health, special education, and social welfare systems also much be reexamined. Because the nature of childhood psychopathology cuts across discrete areas typically associated with various service systems, a coordinated system of intervention must be developed.

At present, most evaluations of interventions continue to involve theories, experimental designs, and measurement batteries that have been dominated by processes at the psychosocial and behavioral levels of analysis. Historically, trials of preventive interventions conducted with children and adolescents have paid minimal attention to neurobiological and physiological systems in their evaluations of treatment efficacy (Cicchetti & Gunnar, 2008). Consistent with the developmental psychopathology perspective, an increasing number of empirical studies are incorporating multiple levels of analysis to understand complex developmental processes (Cicchetti & Gunnar, 2008; Cicchetti & Natsuaki, 2014). The multiple-levels-of-analysis approach improves upon the definition of mental health problems as "brain disorders" and suggests that they can be better conceptualized in a more dynamic fashion that reflects the probabilistic, bidirectional, and transactional interplay among genetic, neurobiological, social, psychological, and environmental influences across the life course (Cicchetti & Toth, 2009; Toth et al., 2013). Intervention design needs to be informed by these theories. Researchers also need to routinely incorporate measures at multiple levels of analysis in intervention trials to more fully capture and evaluate intervention effects and mechanistic processes consistent with theory.

Interest in the effects of interventions on brain structure and function is growing. This interest is fueled by the recognition that the brain is plastic and can change in response to internal (e.g., physiological responses to stress, molecular cascades) and external (e.g., learning opportunities, environmental exposures) experiences (Whitten, 2013). Brain plasticity is complex and can occur on multiple levels, including molecular changes, cellular alterations, shaping of neuronal structures and interconnections, and reorganization of functions (Whitten, 2013). Researchers now understand that not only does behavior change when the brain changes, but that behavior can also induce further brain plasticity through feedback mechanisms (Whitten, 2013). Efficacious interventions may be conceptualized as a method of inducing experience-dependent plasticity to divert maladaptation and promote resilient functioning (Cicchetti & Toth, 2009). Incorporating neuroimaging methodologies into trials of preventive interventions provides various avenues with which to visualize brain structure and function, and further understand the complex interplay among brain, genes, environment, and behavior. Neuroimaging studies in adolescents with borderline personality disorder have demonstrated changes in brain structure (Brunner et al., 2010; Goodman et al., 2011). The conduct of multilevel intervention outcome trials could further elucidate the transactions among physiological and psychological factors in relation to response to intervention.

It is now time to conduct intervention evaluations that routinely incorporate both behavioral and biological measures into their design (Cicchetti & Gunnar, 2008). Such multilevel intervention evaluations would enable scientists not only to assess theoretically predicted behavioral changes but also to ascertain whether abnormal biological structures, functions, and organizations are modifiable or are refractory to intervention. There is growing support in the literature that efficacious intervention modifies not only maladaptive behavior but also the cellular and physiological correlates of behavior (see, e.g., Cicchetti, Rogosch, Toth, & Sturge-Apple, 2011; Dozier et al., 2008). Successful preventive interventions with humans may alter behavior and physiology by producing alterations in gene expression that create a new structural organization in the brain (Kandel, 1999).

Presently, we do not know whether the neurobiological difficulties displayed by some persons with mental disorders or individuals who have experienced significant life adversity are irreversible or whether there are particular sensitive periods when it is more likely that neural plasticity will occur. Moreover, it is not known whether some neural systems may be more plastic than other neural systems, or whether particular neural systems may be more refractory to change or have a more time-limited window when neural plasticity can occur. The conduct of multilevel interventions at various points in the developmental lifespan has the potential to provide answers to these provocative questions. Furthermore, the incorporation of a neurobiological framework into interventions seeking to reduce maladaptation, promote resilient functioning, or repair positive adaptations gone awry may contribute to the ability to design individualized interventions that are based on knowledge gleaned from multiple levels of biological and psychological levels of analysis.

CONCLUDING COMMENTS

In this chapter, we have proposed a developmental psychopathology framework as an integrative approach that can be directed toward developing and evaluating interventions and psychotherapies for children and adolescents. We have acquired considerable knowledge regarding normal and atypical development that is relevant to the provision and evaluation of psychotherapy to children and adolescents. It is critical that dialogues continue and burgeon between those conducting research and those providing psychotherapy. The introduction of a developmental psychopathology perspective into traditional child psychotherapy can serve to revitalize and invigorate this venerable form of treatment with children and adolescents.

ACKNOWLEDGMENTS

Work on this chapter was supported by grants from the National Institute of Mental Health (No. MH 54643) to Dante Cicchetti and Sheree L. Toth and from the Klaus J. Jacobs Foundation, and the Spunk Fund, Inc., to Dante Cicchetti.

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CHAPTER 29

Personalizing Evidence-Based Psychotherapy for Children and Adolescents in Clinical Care

Mei Yi Ng and John R. Weisz

OVERVIEW OF THE EVIDENCE BASE FOR CHILD AND ADOLESCENT PSYCHOTHERAPIES

Our research over the years has involved a combination of treatment development and testing, together with meta-analyses of the child and adolescent (herein, "youth") psychotherapy evidence base. These lines of work, taken together, have spanned an array of internalizing and externalizing youth problems and disorders. Our own meta-analyses and randomized controlled trials (RCTs) have suggested that there may be room for improvement in youth therapies, even those identified as evidence-based.

On the meta-analytic front, several broad-based syntheses encompassing multiple psychotherapies for various youth problems have shown effect sizes (ESs) in the medium-to-large range, according to standard benchmarks (0.5 and 0.8, respectively; Cohen, 1988), but mean effects have shrunk over time. This shrinkage may be due to increasingly rigorous meta-analytic methods, changes in RCT design (e.g., more clinically active control conditions), or other factors not yet identified. In our most recent meta-analysis (Weisz et al., in press), we synthesized findings of 447 RCTs (involving 30,431 youths) spanning 5 decades (1963–2013), and encompassing treatments for anxiety, depression, attention-deficit/hyperactivity problems, and conduct-related problems. Across all studies, the mean posttreatment ES was 0.46, slightly below medium. An ES of 0.46 means the probability that a youth in the treatment condition would fare better than a youth in the control condition was 63%; this is better than chance expectancy of 50% but not dramatically so. In other meta-analyses, we have focused specifically on evidence-based psychotherapies (EBPs), seeking to learn how they perform when tested in more clinically representative contexts and compared to usual clinical care—the comparison needed to determine whether an EBP improves on the status quo. In these meta-analyses, mean ESs were 0.30 (Weisz, Jensen-Doss, & Hawley, 2006) and 0.29 (Weisz, Kuppens, et al., 2013), respectively, reflecting a probability of only 58% that a youth in the treatment condition would fare better than a youth receiving usual clinical care.

Our RCTs testing cognitive-behavioral therapies (CBTs) under "effectiveness trial" conditions—with clinically referred youths treated by clinical practitioners in clinical care settings—have also focused attention on how tested psychotherapy approaches fare in clinical practice when compared to usual care. One of our RCTs tested CBT for youth depression in multiple community clinics, with clinicians and youths randomized to CBT or to usual care (Weisz et al., 2009). In this trial, youths receiving CBT and those receiving usual care showed substantial but similar rates of symptom change and depression recovery (>70%), although CBT did produce the gains in significantly shorter time, at lower cost, and with fewer supplemental services used (including medication). Our other community clinic RCT compared CBT for youth anxiety to usual care (Southam-Gerow et al., 2010); although more than half the youths recovered from their index anxiety disorder, no significant CBT versus usual care differences were found in symptom change, diagnostic outcomes, treatment duration, cost, or additional service use.

The findings of these meta-analyses and RCTs have suggested that some of the structured, manual-guided treatments emerging from traditional psychotherapy research may show reduced effects when they are implemented in more clinically representative contexts and compared to usual practice in those contexts. We think this "voltage drop" may be explained partly by examining the way youth psychotherapy research has been structured over the years. Many of the manual-guided treatments, including those identified as EBPs, appear to have been developed and tested rather separately from the clinical practice realities the treatments are ultimately intended to address. In an examination of 461 youth psychotherapy outcome RCTs from the 1960s through the 2000s (Weisz, Ng, & Bearman, 2014), we found that only 9.7% of studies examined treatments delivered in clinical service settings. In fact, only 2.1% of all the treatment and control groups involved clinically referred youths, treated by clinical practitioners, in practice settings; the most recent decade saw only a small increase to 4.5%. This pattern may reflect understandable efforts to achieve good experimental control, but such control may have exacted a price. It is possible that conducting intervention research under conditions unlike those of clinical practice may limit opportunities to build treatments—even EBPs—that have coped with, and can therefore thrive in, the rather complex world of everyday mental health care. That world can present multiple challenges to treatment success.

Potential mismatches between EBPs and real-world clinical care are numerous (see Weisz, Krumholz, Santucci, Thomassin, & Ng, 2015; Weisz, Ugueto, Cheron, & Herren, 2013), but four examples may suffice. First, clinicians in practice settings typically carry diagnostically diverse caseloads, but most EBPs focus on one problem, or a homogeneous cluster (e.g., depressive disorders). Second, clinically referred youths typically present with comorbidity; the single-problem nature of many EBPs may limit their potential to address co-occurring conditions. Third, treatment needs may shift during therapy, sometimes markedly; a clinician using an EBP focused only on youth depression may be up a therapeutic creek with no paddle if serious conduct problems, or severe anxiety, should surface midstream during treatment. Fourth, the features just noted mean that everyday clinical care often has an unpredictable course, with shifting concerns, surprise revelations, and crises that present new treatment needs; this contrasts with the rather linear design of EBPs that prescribe a standardized sequence of session content in a fixed order. To be clear, EBPs do often provide for some flexibility (e.g., varying rewards, adjusting explanations of concepts to fit youth cognitive abilities), but EBP manuals lack detailed instructions on dealing with comorbidities, treatment obstacles, new information that warrants a different plan, and crises threatening to derail the treatment.

A broader challenge stems from the RCT approach that is most often used to evaluate EBPs; RCTs test whether a particular treatment produces more benefit than a control condition or alternative treatment, on average (see Persons, 1991). By contrast, a clinician in practice needs to choose treatment approaches one at a time, for individual clients who differ from one another on an array of personal characteristics and preferences. RCTs and meta-analyses are inherently limited in their capacity to inform such individual treatment selection, and may therefore need to be combined with complementary strategies. A primary aim of our work has been to equip EBPs more fully for the challenges of everyday clinical care while retaining the many strengths of a scientific approach.

CONCEPTUAL MODEL GUIDING OUR WORK

Much of our research has been guided by a *deployment-focused model* of treatment development and testing (Weisz, 2004; Weisz et al., 2015). This model includes a series of steps aimed at building and testing interventions with the clientele and clinicians, and within the real-world contexts, for which those interventions are ultimately intended, and testing whether the interventions improve on current practice in those contexts. Our goal has been to create a model through which the treatment characteristics needed for success in everyday clinical use can be identified and built into the intervention as a natural part of the scientific process. Our focus in this chapter is on a particularly important application of this model: building strategies for personalizing treatment.

The challenge of making EBPs work well in clinical practice largely involves making the treatments fit individual variations in youth and family characteristics, co-occurring problems, and events and information that emerge during therapy. Thus, the challenges may be addressed by developing strategies for personalizing EBPs. We have conceptualized *personalized mental health interventions* as evidence-based methods for matching and tailoring treatments to individuals to optimize their outcomes (Ng & Weisz, 2016; Weisz et al., 2015). These methods include strategies for selecting treatments, deciding whether and how to combine them, determining what problems to target first and with what techniques, and using information about individual client characteristics and ongoing treatment response to inform clinical decision making. A parallel can be found in the *precision medicine* model (see National Academy of Sciences [NAS], 2011). In one example, the identification of individual differences in genetic drivers of tumor growth has precipitated the development of drugs targeting those drivers, and diagnostic tests to identify individuals carrying the targeted drivers (Hamburg & Collins, 2010).

Demonstrated to improve the response and survival rates of driver-carriers considerably, this approach has become the standard of care for certain cancers. The success of precision medicine in oncology has catalyzed efforts to personalize other forms of health care (NAS, 2011), including mental health (National Institute of Mental Health [NIMH], 2015).

The notion of personalizing psychotherapy is certainly not new (see Persons, 2001), and many practitioners would argue that this is precisely what they do, case by case. However, efforts to apply this concept within an evidence-based framework—applying personalizing strategies to EBPs and testing the personalized interventions in controlled research—may form a particularly rich agenda in the days ahead. Here we present one view of that agenda, offering examples from our work and that of other investigators.

PERSONALIZED INTERVENTIONS: CHARACTERISTICS AND EVIDENCE

We focus on three broad themes in the personalizing process: selecting optimal interventions, monitoring intervention response (including progress toward personalized goals) to guide clinical decision making, and building customized and customizable interventions. Within each theme we describe approaches and note examples of empirical support. We emphasize examples involving youths, but we also note adult examples that might be applied to youth intervention.

Selection of Optimal Treatments

When multiple effective treatments exist for a particular disorder, clinicians and families need to decide which treatment or combination of treatments would most benefit a particular youth. Several lines of research have focused on identifying an individual's optimal treatment.

Meta-Analyses Comparing Treatments for Specific Client Characteristics

Meta-analyses of RCTs comparing alternative interventions among clients who differ on specific characteristics can help guide treatment selection. Consider two examples. A meta-analysis (Cuijpers et al., 2012) directly comparing psychotherapy, medication, and psychotherapy–medication combination treatment for depressed adults revealed that optimal treatments were medication for dysthymia, combination treatment for older adults and outpatients, and either psychotherapy or medication for primary care patients; insufficient evidence existed to support treatment recommendations based on 16 other characteristics (e.g., comorbid obsessive–compulsive disorder [OCD]). Client characteristics influencing differential outcome could also include client preferences. Another meta-analysis (Lindhiem, Bennett, Trentacosta, & McLear, 2014) found that clients with mental or physical health conditions who were randomized to a treatment condition that they preferred, one that allowed them to choose their treatment, or that engaged them in shared decision making with the provider, modestly outperformed clients randomized to a non-preferred/no-choice condition in treatment satisfaction, completion rates, and clinical outcomes.

Individualized Metrics

Meta-analyses usually identify client characteristics that separately predict treatment outcome. In contrast, individualized metrics, which quantify the benefit each client is expected to receive from alternative interventions, can facilitate simultaneous consideration of multiple characteristics in selecting interventions for individuals. For example, the probability of treatment benefit (PTB; Lindhiem, Kolko, & Cheng, 2012) is the estimated probability that a person would benefit from a treatment given one or more characteristics. The probabilities of experiencing normal-range outcomes and improvement in the Child/Adolescent Anxiety Multimodal Study was charted for various levels of pretreatment symptom severity crossed with treatment condition (Beidas et al., 2014). These probabilities differed across treatments (cognitive-behavioral therapy [CBT], selective serotonin reuptake inhibitor [SSRI], CBT + SSRI) for severely anxious youths but not for mildly anxious youths. Another example is the Personalized Advantage Index (PAI), used to identify the optimal treatment in two RCTs (CBT vs. SSRI, CBT vs. interpersonal psychotherapy [IPT]) for adult depression (DeRubeis et al., 2014; Huibers et al., 2015). Pretreatment client characteristics (e.g., attributional style, employment status) predicting differential response were identified, then used to estimate each client's outcomes in both conditions and the advantage conferred by the optimal treatment over the nonoptimal treatment. The authors reported a medium effect in both RCTs—impressive when comparing treatments considered equally efficacious.

Data-Mining Decision Trees

Treatment selection that accounts for multiple characteristics may also be informed by decision trees developed from data mining, an exploratory approach for detecting and interpreting patterns in data. One such method, classification and regression trees (CART), is an algorithm that assesses all putative predictors and their possible cutpoints to find one that best splits the sample into two optimally homogeneous subgroups, then repeats the splitting to form more subgroups until some specified criterion (e.g., minimum subgroup size) is met (King & Resick, 2014). CART and other data mining methods can be applied to a sample of RCT participants or of RCTs to identify efficacious treatments among participants with specific characteristics. For example, the distillation and matching model (DMM; Chorpita, Daleiden, & Weisz, 2005) mines an RCT database constructed through systematically reviewing the youth psychotherapy literature, then coding characteristics of clients and settings, treatment elements (e.g., exposure), and evidence of efficacy. For a particular youth (e.g., 9-year-old girl with social phobia), algorithms can list efficacious therapies tested with similar samples; relative frequencies of therapy type, setting, and format; and elements of the efficacious therapies with their relative frequencies. A comprehensive service model that includes a DMM-based clinical tool produced medium-to-large pre- to posttreatment effects in an open implementation trial (Southam-Gerow et al., 2013). The DMM identifies pretreatment characteristics that predict outcome, but data mining can also be used to leverage within-treatment information (e.g., extent of initial change in a process or outcome) to predict posttreatment outcome (see Shih, Patterson, & Kasari, 2016). This brings us to another broad personalizing strategy: using treatment response information to make clinical decisions.

Treatment Monitoring and Clinical Decision Making

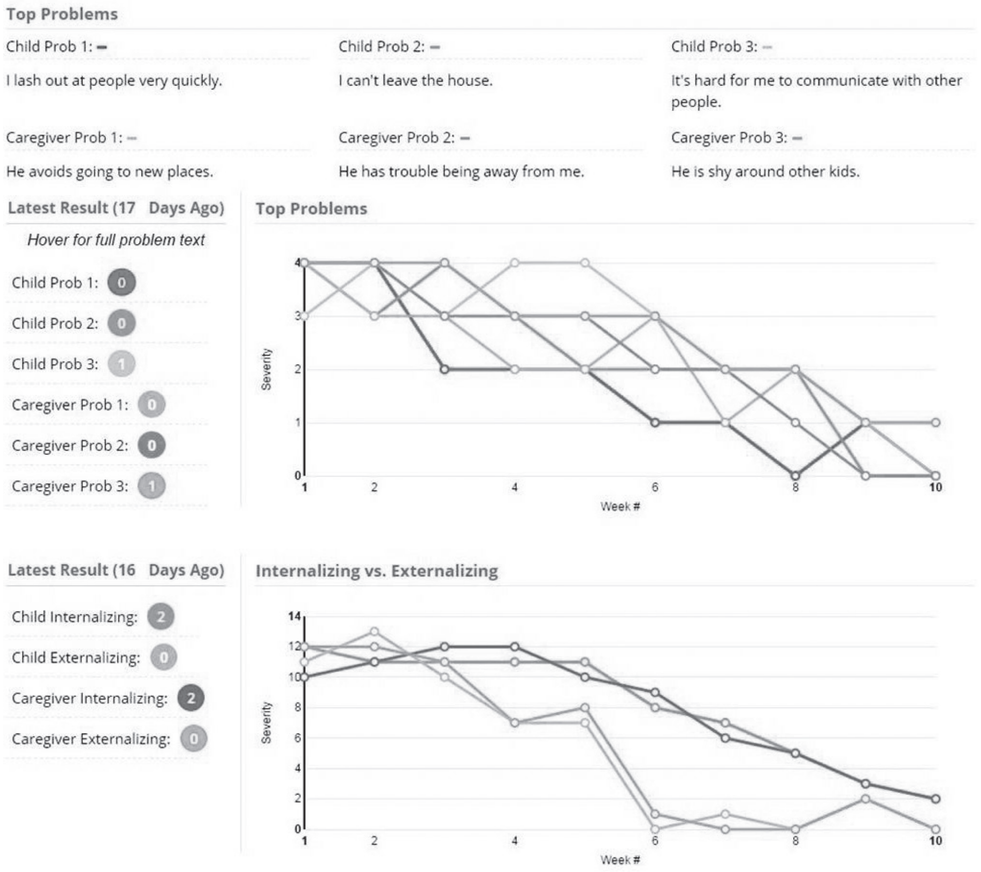
After selecting a treatment, further personalization may occur through monitoring client progress and using the resulting data to adjust interventions and their sequencing.

Measurement Feedback Systems

Measurement feedback systems (MFSs) are tools used to obtain feedback about client progress and to guide treatment decisions. The contents typically include outcome and process measures taken at multiple times during the course of treatment, with data stored and displayed for use by therapists and others (e.g., supervisors) in making ongoing clinical decisions (Bickman, 2008). One widely used MFS is the Outcome Questionnaire (OQ) system, which includes youth self-report and youth caregiver-report versions (for a review, see Whipple & Lambert, 2011). Computer-generated reports display a total functioning score, several subscale scores (e.g., Intrapersonal Distress, Interpersonal Relations), and clinically relevant information (e.g., whether expected progress has been made; see *www.oqmeasures.com*). Additional clinical support tools facilitate decision making when treatment failure is likely, by pointing to treatment obstacles and possible solutions (Whipple & Lambert, 2011). This system has identified youths at risk of treatment failure in usual care (e.g., Warren, Nelson, Burlingame, & Mondragon, 2012) and has been associated with improved adult outcomes in RCTs (Shimokawa, Lambert, & Smart, 2010). Use of another MFS was associated with improved youth outcomes in an RCT (Bickman, Kelley, Breda, de Andrade, & Riemer, 2011), suggesting the potential efficacy of MFSs for youths. As treatments become more customizable, information on client response will be needed to guide clinician decision making, and MFS technology can provide that information. We have used MFS technology in all our recent trials; one version that tracks both individualized and standardized measures is illustrated in the client dashboard shown in Figure 29.1.

Personalized Treatment Goals

In addition to standardized measures, individual clients' treatment goals may be assessed and tracked by MFSs, and this may be especially relevant to personalizing therapy. For example, in the Top Problems Assessment, youths and caregivers each identify the problems they consider most important to address in treatment, then rate the severity of each "top problem" weekly until termination (Weisz et al., 2011). This brief, efficient measurement approach has shown psychometric strength and significant utility as a highly personalized measure of treatment outcome, included in two recent trials (Weisz et al., 2012, 2016). Further support for this approach comes from meta-analytic findings that ESs computed from individualized goals were significantly larger than ESs computed from standardized problem measures for the same treatment–control comparison (Lindhiem, Bennett, Orimoto, & Kolko, 2016). Whether assessing personalized goals improves overall outcomes or facilitates the individual tailoring of therapy remains a question for further empirical study. Nevertheless, personalized goal assessment is an essential tool for



Top Problems

Child Prob 1: –

I lash out at people very quickly.

Child Prob 2: –

I can't leave the house.

Child Prob 3: –

It's hard for me to communicate with other people.

Caregiver Prob 1: –

He avoids going to new places.

Caregiver Prob 2: –

He has trouble being away from me.

Caregiver Prob 3: –

He is shy around other kids.

Latest Result (17 Days Ago)

Hover for full problem text

Child Prob 1: 0

Child Prob 2: 0

Child Prob 3: 1

Caregiver Prob 1: 0

Caregiver Prob 2: 0

Caregiver Prob 3: 1

Latest Result (16 Days Ago)

Child Internalizing: 2

Child Externalizing: 0

Caregiver Internalizing: 2

Caregiver Externalizing: 0

FIGURE 29.1. Measurement feedback system client dashboard used to inform clinician decision making for a youth who presented with anxiety and conduct problems at pretreatment. The dashboard displays weekly caregiver- and youth-report ratings of informant-identified "top problems" and of a standardized measure of internalizing and externalizing problems throughout the 10-week treatment. Copyright © Jacqueline Hersh and John R. Weisz. Reprinted by permission. A color version of this figure is available at *www.guilford.com/weisz-forms.*

determining whether issues deemed important to clients are successfully addressed by treatment.

Sequential, Multiple Assignment, Randomized Trials

Sequential, multiple assignment, randomized trials (SMARTs) can inform the construction of decision rules by dividing the treatment regimen into two or more stages: Participants are first randomized to a particular treatment, and treatment response is assessed; then participants are assigned to one of several next-stage treatments, based in part on their response to the first treatment (Lei, Nahum-Shani, Lynch, Oslin, & Murphy, 2012). For example, one SMART initially randomized children with attention-deficit/hyperactivity disorder (ADHD) to behavioral intervention or stimulant medication, then assessed response after 8 weeks and monthly thereafter; responders in both conditions continued their existing treatment, and nonresponders were rerandomized to conditions that intensified their initial treatment or added the other treatment (Pelham et al., 2016). The most efficacious treatment strategy started with behavioral intervention and added medication for nonresponders; the least efficacious started with medication and added behavioral intervention subsequently. This outcome is especially noteworthy because it qualifies the widely cited finding that behavioral intervention combined with stimulant medication simultaneously is superior to either treatment alone and to usual care (MTA Cooperative Group, 1999). SMARTs can evaluate not only first-stage and next-stage interventions, but also optimal time-points for decision-making. A SMART that randomized depressed adolescents to 4- vs. 8-week time-points for assessing response and switching treatment strategy (from IPT to intensified IPT or to IPT + SSRI) found the 4-week time-point more feasible, acceptable, and effective (Gunlicks-Stoessel, Mufson, Westervelt, Almirall, & Murphy, 2016). For more examples of SMARTs, see *https://methodology.psu.edu/ra/adap-inter/projects.*

Customized and Customizable Treatments

A third, broad personalizing strategy involves modifying treatment protocols and creating new ones to increase opportunities for customizing. We illustrate by noting four approaches.

Therapies Adapted for Specific Subgroups

The most frequently tested personalizing approach may be the adaptation of existing EBPs for subgroups that are expected to respond poorly to the standard version. For example, researchers have adapted EBPs to make them more consistent with the experiences and perspectives of specific cultural groups. Findings to date have been sparse and rather mixed on whether cultural adaptations confer incremental benefit (Huey, Tilley, Jones, & Smith, 2014; see also Huey & Polo, Chapter 21, this volume). One culturally adapted EBP that did show incremental benefit is Guiding Active Children (*Guiando a Niños Activos,* GANA), designed to treat disruptive behavior using parent–child-interaction therapy (PCIT) techniques with modifications to increase Mexican American families' engagement (McCabe & Yeh, 2009; McCabe, Yeh, Lau, & Argote, 2012). GANA's success may derive from being not merely customized for Mexican American families in general—typical of adapted therapies for specific groups—but also customizable for individual families' perspectives. For example, a time-out chair is called a "punishment chair" or "thinking chair" depending on parents' beliefs about discipline; treatment is labeled an educational program to reduce stigma, and family members most likely to influence treatment continuation are actively engaged (McCabe, Yeh, Garland, Lau, & Chavez, 2005).

Therapies Targeting Youths' Environments

In contrast to weekly clinic sessions aimed at changing youth or caregiver behavior, some therapies are designed to produce behavioral change in youth by altering or leveraging their everyday environments, including school, family, peer, community, and legal contexts. Multisystemic therapy (MST), a widely disseminated EBP for youth delinquency and substance use, exemplifies this approach (see Henggeler & Schaeffer, Chapter 12, this volume). Briefly, treatment is personalized via individualized goals: case formulation that identifies key persons in the youth's life, drivers of a particular youth's delinquent behaviors in all environments, and strengths that could be leveraged to remove drivers; selective provision of EBPs and practical assistance targeting a particular youth's delinquency; monitoring drivers and outcomes to inform clinical decisions; enlisting key persons as informants and cotherapists; as well as conducting assessments and interventions within the environments and schedules of the youth and identified key persons.

Modular Therapies

Personalizing for individual clients can be supported by organizing therapy content into self-contained modules that can be selected, combined, and sequenced in individually tailored ways. Modular therapies are therefore highly customizable, and may be especially useful for youths with heterogeneous constellations of problems. As an example, the Modular Approach to Therapy for Children with Anxiety, Depression, Trauma, or Conduct Problems (MATCH) targets youths who have one or more of the problems named in the protocol (Chorpita & Weisz, 2009; Weisz & Chorpita, 2011). MATCH comprises modules from youth EBPs—CBT for anxiety, posttraumatic stress, and depression, and behavioral parent training for conduct problems (as illustrated in Figure 29.2). The client's primary problem is used to select one of four flowcharts (e.g., anxiety, depression), each of which identifies core modules from the EBP for that problem. The therapist may repeat core modules or add modules from other EBPs depending on the youth's response to treatment, presence of comorbid problems, and emergence of treatment-interfering behaviors. In an RCT testing an earlier version of MATCH (without trauma modules), an MFS provided weekly youth and caregiver ratings of symptoms and top problems identified by youth and caregiver at pretreatment, and session-by-session tracking of modules delivered (e.g., rewards), practices employed (e.g., modeling), and events that transpired (e.g., crises; Chorpita, Bernstein, Daleiden, & The Research Network on Youth Mental Health, 2008; Weisz et al., 2012). MATCH + MFS outperformed usual care at posttreatment and at 2-year follow-up, whereas standard EBPs + MFS did not (Chorpita et al., 2013; Weisz et al., 2012). In fact, the MATCH versus usual care comparison yielded ESs on the primary outcome measures that were roughly twice as large as the mean effects found in meta-analyses comparing youth EBPs to usual care (Weisz et al., 2006; Weisz, Kuppens, et al., 2013).

Other modular approaches have been developed, some for specific forms of psychopathology known to show high levels of co-occurring problems. One example, Behavioral Interventions for Anxiety in Children with Autism (BIACA), comprises CBT modules for youth anxiety incorporating adaptations for youths with autism (e.g., greater parent involvement) and modules to target problems common among these youths (e.g., social and daily living skills deficits). BIACA has ameliorated anxiety and co-occurring problems, outperforming waitlist or usual care in several RCTs (see Wood et al., 2015).

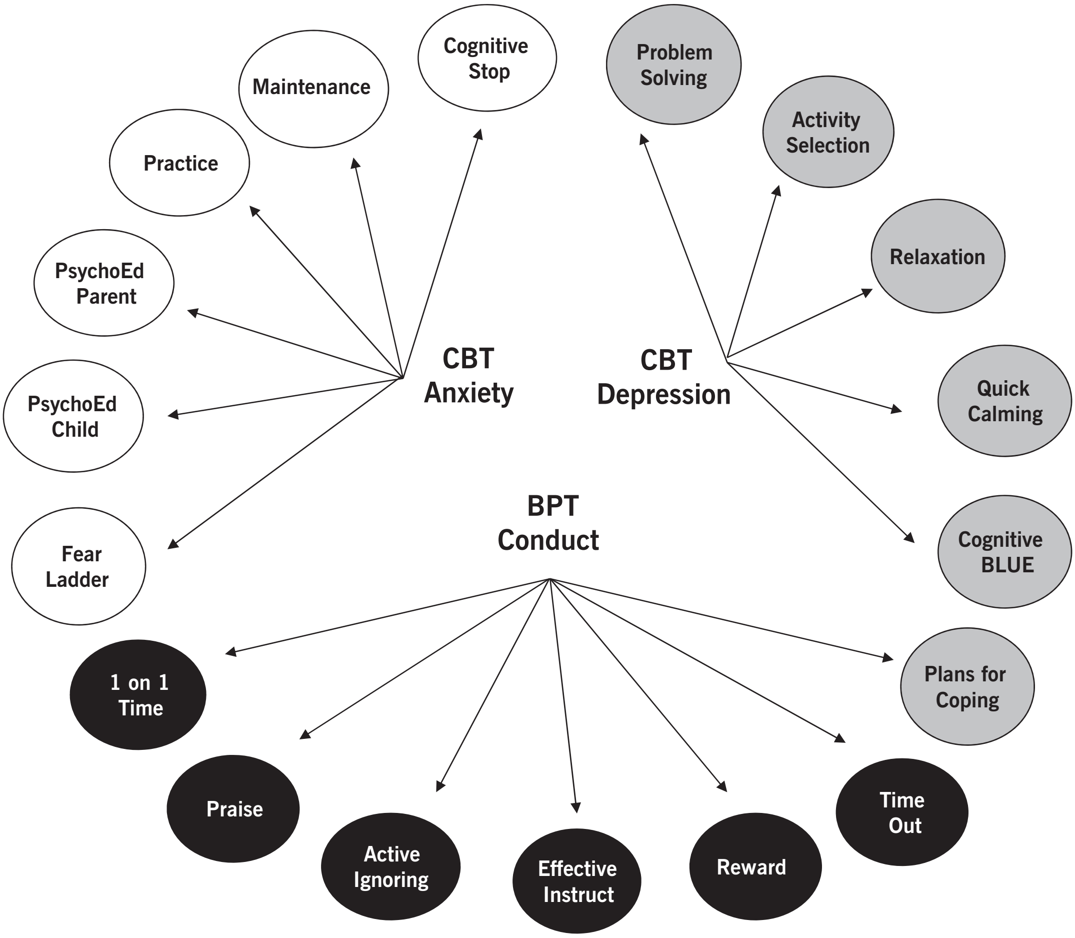


FIGURE 29.2. Selected modules illustrating the structure of Modular Approach to Therapy for Children with Anxiety, Depression, Trauma, or Conduct Problems (Chorpita & Weisz, 2009). CBT, cognitive-behavioral therapy; BPT, behavioral parent training; BLUE, an acronym representing four different patterns of depressogenic thinking: B, blaming myself; L, looking for bad news; U, unhappy guessing; and E, expecting bad things to happen. From Weisz, Krumholz, Santucci, Thomassin, and Ng (2015). Copyright © 2015 Annual Reviews (*www.annualreviews.org*). Reprinted by permission.

Principle-Guided Therapy

Another way to build customizability into therapy while retaining EBP techniques is the *principle-guided* approach (Weisz et al., 2016). To address challenges we faced in implementing MATCH (e.g., long training time, numerous modules to coordinate), we developed an efficient transdiagnostic protocol called FIRST, employing five principles of therapeutic change: Feeling Calm, Increasing Motivation (e.g., through the use of praise and incentives), Repairing Thoughts, Solving Problems, and Trying the Opposite (e.g., exposure for anxiety). These five principles were chosen because (1) they are often included in EBPs for common youth internalizing and externalizing problems, (2) they have been shown to be efficacious as standalone interventions, (3) can be applied to multiple youth problems that often co-occur, and (4) they can be learned efficiently (2 days vs. 6 days of training for MATCH). Flowcharts and weekly MFS reports on each youth's treatment response are used to personalize treatment throughout each episode of care. As an initial step in evaluating this approach, we conducted an open trial of FIRST in community clinics, with practitioners treating referred youths diagnosed with anxiety, depressive, and/or conduct-related disorders. FIRST demonstrated promising feasibility for use in everyday practice, acceptability to clients and therapists, and clinical outcomes that were quite similar to those shown by MATCH.

FUTURE DIRECTIONS

As evidence on the various tailoring strategies accumulates, it is possible to envision an emerging *science of personalized psychotherapy,* expressed in clinical practice that uses evidence-based tailoring. We propose eight directions for research that could accelerate progress toward this objective (Figure 29.3).

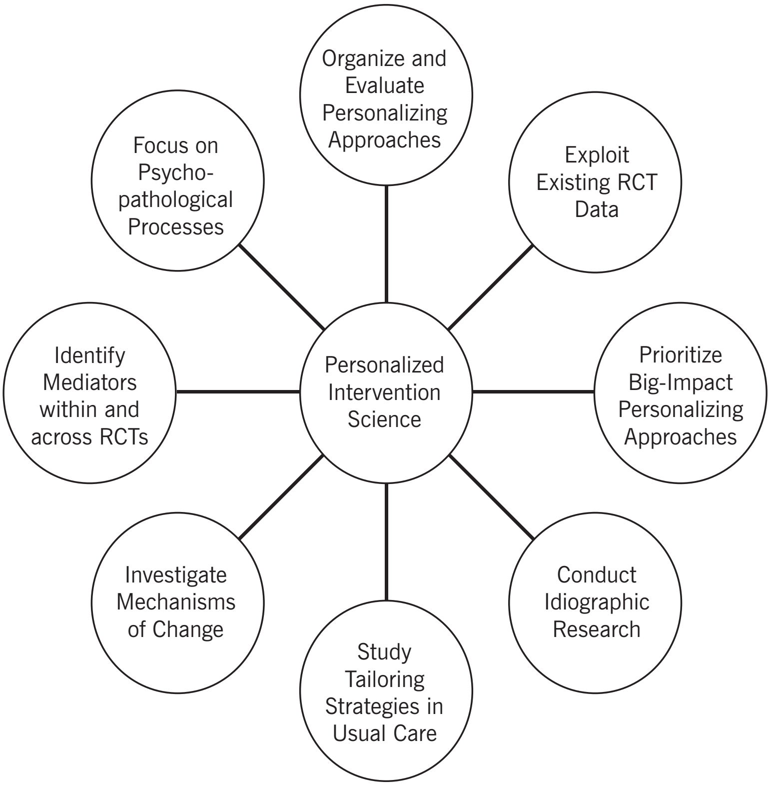


FIGURE 29.3. Eight future directions for building personalized intervention science. Copyright © Mei Yi Ng and John R. Weisz. Reprinted by permission.

Organize and Evaluate Personalizing Approaches

Of the personalized interventions reviewed, only GANA, MATCH, and therapy plus MFSs have demonstrated incremental benefit over nonpersonalized versions of those treatments, and only the last has demonstrated benefit in multiple RCTs conducted by different groups of investigators. To our knowledge, the remaining personalized interventions and personalizing strategies have yet to be tested in prospective controlled research. Given that some individually tailored EBPs have fared worse than standard EBPs in RCTs (e.g., Schulte, Künzel, Pepping, & Schulte-Bahrenberg, 1992), an evaluation system with consistent criteria will be needed to monitor the strength of evidence supporting each personalizing strategy. The system will need to attend to the conditions (e.g., presenting problems, treatment protocol/technique) under which each strategy is effective, thereby identifying areas for further research. It may make sense to adapt the system used for EBPs (see Chambless & Hollon, 1998) given its familiarity to researchers and clinicians, and its reliance on experimental designs to evaluate treatments. All three categories of personalizing approaches, or interventions developed from those approaches, are experimentally manipulable; they can be tested in RCTs against traditional comparison conditions. Evaluation of incremental efficacy will require testing against the same intervention without personalization, or with personalization to yoked participants' characteristics (see Schulte et al., 1992). Possible modifications include adding a multiple-problem or transdiagnostic category and incorporating youth, family, and clinician engagement and satisfaction outcomes into evaluation criteria, given that several personalized interventions were developed expressly to boost these outcomes.

Exploit Existing RCT Data

Existing RCT datasets are valuable resources for informing intervention selection and development. Meta-analyses, individualized metrics, and data-mining decision trees all involve analyzing existing data and can generate evidence for personalizing interventions relatively quickly. More meta-analyses of RCTs directly comparing alternative treatments for youths with specific characteristics are needed, especially since the handful of meta-analyses that have been designed to guide personalizing have focused mainly on adults (for examples, see Cuijpers et al., 2012; Norcross, 2011). Individualized metrics, if computed for multiple RCTs of youth psychotherapy, could contribute to a useful clinical tool for matching youths to their optimal treatments. The DMM already draws on hundreds of youth psychotherapy RCTs to inform the selection of psychotherapy protocols or elements based on client characteristics; but more data-mining decision trees can be constructed with RCT data to inform decision rules.

Prioritize Big-Impact Personalizing Approaches

Impact on clinical practice may be magnified by prioritizing those personalizing approaches that appear to have the broadest reach. MFSs, for example, may have good potential because they can be used across a broad range of problems and disorders, treatment approaches, and settings. Modular interventions such as MATCH also have useful breadth given their applicability across multiple problems and disorders. Even more narrowly focused personalizable interventions may have major impact if they address high-profile societal problems, and particularly if they do so in more cost-effective ways than standard interventions for those problems. Examples can be seen in the rapid spread of MST (see Hengeller & Schaeffer, Chapter 12, this volume) and Treatment Foster Care Oregon (see Buchanan, Chamberlain, & Smith, Chapter 11, this volume). An important reality constraint is that the resources available for adapting and testing new treatment variations are finite. That being the case, adaptations to EBPs for specific groups may be most justified in cases where existing EBPs have been shown to generate poor treatment engagement or response, where important symptoms or risk/resilience factors are unaddressed by existing EBPs (Lau, 2006), and where usual clinical care is known to be ineffective.

Conduct Idiographic Research

Because of its inherent focus on individuals instead of groups, idiographic research is well-suited to informing and testing personalized interventions. In addition to idiographic measures of treatment process and outcome (e.g., personalized goals), single-case experiments (e.g., ABAB, multiple baseline, equivalent time samples) are a well-developed idiographic research method (see, e.g., Kazdin, 2011), and have been deemed appropriate for fulfilling current EBP criteria (Chambless & Hollon, 1998). They also offer the advantage of efficiency, requiring far less time and fewer resources than group-oriented research designs, and partly for this reason have been championed by leading clinical scientists (e.g., Barlow & Nock, 2009; Kazdin, 2011). Idiographic strategies may also include person-specific analysis of how each individual's symptoms predict other symptoms over time, which can inform personalized intervention. As an example, Fisher (2015) assessed symptoms across 60 successive days in 10 adults diagnosed with generalized anxiety disorder, and found individual differences in the factors underlying their symptoms and how the factors related to one another over time (e.g., avoidance prospectively predicted increased anxiety in some individuals but less distress in others). The author proposed selecting treatment modules according to each person's particular symptom factors, and sequencing modules to target the driving factors early in treatment.

Study Tailoring Strategies in Usual Care

Given that usual care sometimes produces comparable outcomes to EBPs (Weisz et al., 2006, Weisz, Kuppens, et al., 2013), and clinicians favor tailoring interventions to individuals (e.g., Stewart, Stirman, & Chambless, 2012), close examination of usual care may reveal tailoring strategies that can be tested empirically. This approach may be especially well-suited to the usual care conditions within RCTs. RCT researchers typically administer rigorous assessments and often record therapy sessions for later coding; the data thus generated may offer rich opportunities for detailed examination of usual care treatment approaches and strategies for personalizing, and how these strategies relate to intervention outcomes (see, e.g., Dattilio, Edwards, & Fishman, 2010). Strategies associated with the most successful outcomes might therefore be identified and tested in controlled research using prospective designs.

Investigate Mechanisms of Change

Experts in psychotherapy research have argued that identifying the change mechanisms through which treatments work can inform the development of leaner, more potent therapies (e.g., Kazdin & Nock, 2003; Kraemer, Wilson, Fairburn, & Agras, 2002). We believe that investigating the change mechanisms of EBPs can also inform their personalization in several ways. First, inactive aspects of the EBP might be altered to suit a client's preferences and increase engagement without risk of diminished efficacy. Second, active ingredients and change mechanisms might vary across individuals, and learning which ingredients act on which change mechanisms, and how these connections operate within different subgroups, could facilitate personalizing. Third, understanding how individual EBPs and pharmacotherapies work may inform the combination and sequencing of interventions. Given the field's limited understanding of the change mechanisms underlying youth psychotherapies (Kazdin & Nock, 2003) and personalizing approaches, we encourage investigations into how youth EBPs work generally and individually, and the development of methods for such research. It is certainly true that establishing change mechanisms can be complex and costly because of the need to demonstrate causality and temporal precedence of the candidate mechanism (Kazdin, 2007). Fortunately, though, frequent assessments of candidate mechanisms and outcomes are now more feasible than ever before with the development of MFSs and the ubiquity of mobile technologies (Trull & Ebner-Priemer, 2013), and the statistical methods needed to analyze these data are now the focus of considerable research (e.g., Compton, Rosenfield, Hofmann, & Smits, 2014).

Identify Mediators within and across RCTs

Researchers recommend identifying mediators in RCTs as a precursor to identifying change mechanisms (Kraemer et al., 2002). However, potential mediators appear to be tested as mediators much less frequently than they are measured in RCTs of youth EBPs (Weersing & Weisz, 2002; Weisz, Ng, Rutt, Lau, & Masland, 2013). If the extensive evidence base of existing RCTs were used, mediation analyses could reveal quite a lot about the most and least promising candidate change mechanisms. Moderated mediation analyses test whether mediation effects differ across subgroups and are therefore especially informative about between-participant differences in how a treatment works; and distribution of the product, bootstrapping, and causal mediation methods all confer advantages over the popular Baron and Kenny (1986) causal-steps method (see MacKinnon, Kisbu-Sakarya, & Gotschall, 2013). This state of affairs sets the stage for systematic reviews and meta-analyses to quantify mediation effects (e.g., Gu, Strauss, Bond, & Cavanagh, 2015), identifying the most robust mediators, nonmediators, and inadequately tested potential mediators in the literature.

Focus on Psychopathological Processes

Just as the same type of cancer may be driven by genetic variants that differ across individuals, the same mental health diagnosis may be driven by psychopathological processes that differ across individuals. For example, major depressive disorder may comprise different endophenotypes, each with its own distinct drivers and associated neurocircuitry, and its own optimum treatment (Forgeard et al., 2011). The heterogeneity of diagnoses and potential drivers provides the rationale for the Research Domain Criteria (RDoC) project, launched by the NIMH (2015) to stimulate research on processes in several domains (e.g., positive valence, arousal, regulatory systems) thought to drive a range of psychopathology. The field's shifting emphasis from diagnoses to their underlying processes can also be attributed to the advent of therapies targeting psychopathological processes that transcend diagnostic categories—transdiagnostic treatments—which are beginning to be tested with youths after initial success with adults (see Chu, 2012). The evidence base for personalizing interventions can be greatly expanded through routine measurement of hypothesized psychopathological processes at multiple levels of analysis (e.g., neurocircuitry, genetics) in RCTs comparing alternative efficacious treatments, so that relations among treatment type, response, and processes can be investigated (Forgeard et al., 2011). Such studies are rare (Simon & Perlis, 2010), but are now beginning to surface (McGrath et al., 2013).

CONCLUDING COMMENTS

Across 5 decades of youth psychotherapy research, clinical scientists have built a rich body of evidence on what works. Identification of EBPs has been a valuable advance in the use of science to guide clinical practice. An important next step will be the effort to boost effects of these therapies, particularly in the clinical care contexts for which most were originally intended. This may be done, in part, through strategies for personalizing treatment. These strategies include developing methods for selecting optimal treatments for individual clients, building tools to effectively monitor individuals' treatment response and guide clinician decision making, and designing therapies that are customized or customizable to fit individual clients. To realize the promise of these strategies, we suggest specific ways to accelerate research on personalizing therapies, including development of a system to organize and evaluate personalizing approaches exploiting existing RCT data; prioritizing the most impactful personalizing approaches; conducting idiographic research; studying tailoring strategies in usual clinical care; and investigating mediators, mechanisms of change, and psychopathological processes. Our hope is that these efforts will help make it possible, increasingly, for clinically referred youths to receive EBPs that fit their individual characteristics, delivered in a dynamic way that adjusts to their treatment response and their evolving needs.

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CHAPTER 30

Harnessing the Neuroscience Revolution to Enhance Child and Adolescent Psychotherapy

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Interest in the field of clinical neuroscience has exploded in the past decade (Weingarten & Strauman, 2015). However, direct contributions of neuroscience to clinical assessment and treatment are rare. It is natural and appropriate for clinicians and policymakers to ask where and when translational gains from neuroscience will emerge in clinical practice. In this chapter we identify a number of paths through which neuroscience might inform superior assessment and treatment of children and adolescents in the future. We focus on three potential contributions that neuroscience can make to clinical assessment and treatment. First, neuroscience might be used to identify individuals who are more or less likely to respond to specific psychosocial treatments. Given that a substantial minority of people fail to improve in treatment, even with our most empirically supported approaches, identifying people who are likely to fail and why might point us toward innovative new approaches for improving clinical outcomes. Second, neuroscience might facilitate the process of matching individuals to treatments from which they are most likely to benefit, in part by identifying clinically meaningful subgroups within specific diagnoses. Finally, neuroscience can potentially identify mechanisms of effective clinical change, allowing for the development of more efficient evidence-based treatments. We use the term "neuroscience" throughout the chapter to refer to the application of neuroscience to study cognitive and affective processes, and their development in humans.

After a brief review of common neuroscience methods, we discuss existing research within these three broad themes. Clinical applications of neuroscience remain limited, particularly with children and adolescents. Thus, we focus primarily on what is *possible* in terms of these applications (for additional review, see Fournier & Price, 2014; Weingarten & Strauman, 2015). At the same time, it is important to acknowledge the current practical constraints of integrating neuroscience methods into clinical practice. Accordingly, we end with a discussion of obstacles, limitations, and future directions that might facilitate the application of neuroscience to clinical intervention for children and adolescents. As translational research in children is still limited, we discuss relevant research on children and adolescents where possible and highlight examples from research with adults when pediatric research is not available. Many of the reviewed neuroimaging studies focus on neural networks involved in salience and reward processing. The primary brain regions in each of these networks are depicted in Figures 30.1 and 30.2, respectively. (These figures are available only online at *www.guilford.com/weisz-forms*, in full color.) We focus on incorporating neuroscience methods into the evaluation of evidence-based treatments. We do not cover treatments that are not empirically supported.

THE TOOLS OF NEUROSCIENCE

A variety of noninvasive neuroimaging methods for examining the structure and function of the human brain are commonly used to study clinical questions. Of these, magnetic resonance imaging (MRI) and functional MRI (fMRI) are the most commonly used tools. Both methods exploit differences in the magnetic properties of brain tissues to construct images (Huettel, Song, & McCarthy, 2014). MRI is used to acquire high-resolution images of brain structure that provide information on the volume, surface area, and thickness of brain structures and is frequently used to measure structural differences between clinical and nonclinical populations, as well as deviations from typical developmental trajectories. fMRI is used to measure blood-oxygenation-level-dependent (BOLD) signal, which can be used to model neural activity. Most fMRI studies measure brain activity in the context of an experimental task. MRI techniques also may be used to measure the structural and functional connections between different brain regions. The integrity of structural connections between brain regions (i.e., white matter) can be estimated using diffusion tensor imaging (DTI), an MR image that is sensitive to directionality of diffusion in brain tissues. Functional connections between different brain regions can be measured by examining the degree to which regions activate together (using fMRI) either at rest (i.e., resting state functional connectivity) or in the context of an experimental task.

Although MRI methods have become predominant, other tools can be used to examine brain function. Electroencephalography (EEG) is a method of recording electrical activity in the brain through electrodes placed on the scalp. These electrodes can measure electrical properties of the brain at rest, as well as event-related potentials (ERPs) at particular locations in response to experimental stimuli. Relative to fMRI, EEG is less accurate in estimating the location of activity within the brain, but provides greater specificity of the timing of neural responses (Horwitz, Friston, & Taylor, 2000). A related technique, magnetoencephalography (MEG), measures magnetic perturbations caused by intracellular currents to acquire temporally and spatially specific information about brain activity (Krish, 2014). MEG has rarely been used to study psychosocial treatments. Finally, positron emission tomography (PET) scanners image the distribution of radioactive materials following an injection. By using contrast agents that act as analogues to glucose or other chemicals important to brain function, a variety of neural processes can be examined (Horwitz et al., 2000). PET methods are infrequently used with children.

USING NEUROSCIENCE TO PREDICT TREATMENT RESPONSE

Evidence-based psychotherapies have been shown to be broadly effective in treating children and adolescents (Weisz, Weiss, Han, Granger, & Morton, 1995). However, many children do not respond, even in highly controlled clinical trials, and treatment effects are generally smaller in real-world clinical settings than in efficacy trials (Weisz, Ugueto, Cheron, & Herren, 2013). To date, behavioral markers and diagnostic data routinely collected in clinical practice have provided few clues about which children are most likely to respond to treatment. Neuroscience can reveal differences in neural structure and function among children whose behavioral presentation is similar or identical, and these brain-related differences in otherwise equivalent cases might predict response to treatment better than behavioral measures. Identifying individual differences in neural structure and function that predict response to treatment may be especially relevant in children, where self-report methods are challenging and disagreement among reporters is the norm (De Los Reyes, Aldao, & Augenstein, Chapter 31, this volume; De Los Reyes & Kazdin, 2005). The measurement of individual differences in neural structure and function may in turn lead to the discovery of new behavioral instruments for use in clinical settings.

Recent research on the treatment of social anxiety disorder (SocAD) in adults provides an example of how neuroimaging tools can be used to predict treatment response. Although medication and cognitive-behavioral therapy (CBT) have both been shown to be efficacious in treating SocAD, a meaningful proportion of individuals do not respond to treatment in clinical trials, although more intensive combined therapies are associated with better response rates (e.g., Blanco et al., 2010). Recent evidence suggests that neural measures may have greater predictive utility than standard clinical measures in predicting treatment response among individuals with SocAD. For example, several studies have found that individuals with SocAD who exhibit greater pretreatment response to negative facial emotion in the dorsal and ventral occipitotemporal cortex (higher-order visual processing regions of the brain) respond better to CBT (Doehrmann et al., 2013; Klumpp, Fitzgerald, & Phan, 2013). Together with clinical severity data, differences in task-related brain activity in these regions accounted for 41% of variability in treatment response in one study (Doehrmann et al., 2013). In a related study, when information about structural and functional connectivity provided by DTI and resting state fMRI was included in models of treatment prediction along with clinical severity data, response to CBT treatment was predicted with 81% accuracy

(Whitfield-Gabrieli et al., 2016). In both of these studies, pretreatment clinical severity data and other behavioral indicators accounted for only 12% of treatment outcome variance.

Neuroscience approaches have recently been applied to predict treatment response in children and adolescents with anxiety, mood, and trauma-related disorders. For example, McClure et al. (2006) found that greater pretreatment amygdala activity (see Figure 30.1 at *www.guilford.com/weisz-forms*) while viewing fearful (vs. happy) faces was associated with higher clinician reports of symptom improvement in children receiving CBT or medication for anxiety disorders. A similar pattern was observed in a study of trauma-focused CBT for PTSD, where greater amygdala response to threatening versus neutral facial expressions was associated with faster PTSD symptom reduction in adolescent girls (Cisler et al., 2015). In adolescent depression, greater activity in the nucleus accumbens and caudate while anticipating a possible monetary reward in a guessing task predicted reduced post-treatment anxiety symptoms and a steeper rate of improvement in adolescents undergoing CBT (Forbes et al., 2010; see Figure 30.2 at *www.guilford.com/weisz-forms*). In children, as in adults, preliminary but promising evidence suggests that neural measures convey information about prospective treatment response that is not captured by existing clinical measures. Future research is needed to expand on this knowledge base and identify the mechanisms underlying these associations.

Neuroimaging technology is currently insufficiently advanced for practical direct measurement of these biomarkers in a typical clinical setting. However, neural models of treatment response may lead to similarly predictive models using behavioral or psychophysiological tools that are easier to measure in clinical settings (we discuss this possibility at greater length in the final section of the chapter). In clinical practice, these measures might allow for more effective triage of cases to more intensive and effective treatments (e.g., combined CBT and medication), leading to more rapid improvement for clients and less time spent on therapies that are unlikely to be effective.

USING NEUROSCIENCE TO FACILITATE INDIVIDUALIZED CARE

In the face of long-standing evidence that many evidence-based treatments are broadly similar in effectiveness (e.g., CBT and interpersonal psychotherapy for adolescent depression), clinicians are often faced with the issue of deciding which treatment will be most effective for a particular client. However, there are few clear guidelines to help clinicians make such decisions or to suggest the utility of one treatment over another. Neuroscience may facilitate the discovery of innovative tools for clinicians to select the most effective treatments for their clients by revealing biomarkers of response to specific treatments and differentiating clinically relevant subtypes of specific forms of psychopathology. Research on major depressive disorder (MDD) has already begun to explore these topics.

Although several psychotherapies and pharmacotherapies for adolescents with MDD have received substantial empirical support, at least 15% of adolescents with MDD do not respond even to our best treatments (March et al., 2007; Weisz, McCarty, & Valeri, 2006). While alternative treatments for adolescents who do not respond to an initial MDD treatment can be effective (Brent et al., 2008), it remains true that many youth spend substantial amounts of time undergoing treatments that, ultimately, will not be effective, increasing the amount of time they spend experiencing depression and the associated risks for negative sequelae, including self-harm. The availability of clear indicators suggesting a particular therapy for a particular adolescent with depression could fundamentally change the course of treatment in these cases. Currently, few reliable indicators exist (Hollon et al., 2005; Sherrill & Kovacs, 2004).

Neuroimaging studies have begun to reveal a number of biomarkers that predict treatment response in adults. While many of these biomarkers predict treatment response across treatment methods (Konarski et al., 2009; Siegle et al., 2012), there is already some evidence for biomarkers that predict variable response to *specific* treatments. In one study comparing CBT to medication for adults with MDD using PET, reduced resting state glucose metabolism in the insula—an area of the brain that has been associated with emotional and interoceptive awareness—was associated with greater remission during CBT but poor response to medication treatment, whereas adults with increased insula metabolism responded better to medication than to CBT (McGrath et al., 2013). In a follow-up study, the symptoms of nonresponders reassigned to combined therapy were more likely to remit if their added treatment component matched the appropriate biomarker (Dunlop, Kelley, McGrath, Craighead, & Mayberg, 2015). One possible explanation for these findings is that the lower glucose metabolism in the insula corresponds to a reduced level of emotional and interoceptive awareness that may be addressed with CBT better than with medication, although additional research is needed to identify the specific cognitive and affective processes that might be influenced by variation in resting state glucose metabolism in the insula. Investigation of these types of treatment-selective biomarkers could lead to novel recommendations about which individuals with MDD might preferentially respond to CBT versus medication.

Further possibilities for individualized treatment come from neuroscience studies of subtypes of specific forms of psychopathology. Traditionally, diagnostic categories have been established according to symptom clusters outlined in the *Diagnostic and Statistical Manual for Mental Disorders* (DSM). These categories may obscure distinct endophenotypes that contribute to similar symptomatic presentations despite distinct neurobiological and etiological characteristics (Charney et al., 2002). By identifying biologically distinct characteristics of specific endophenotypes, neuroscience may provide evidence for heterogeneity within particular diagnostic clusters and, potentially, inform assessment and treatment options. For example, anhedonia—an experience characterized by difficulty feeling pleasure—is a common feature of MDD (Goldstein & Klein, 2014; Pechtel, Dutra, Goetz, & Pizzagalli, 2013) and has been shown to predict treatment nonresponse in adults and adolescents (McMakin et al., 2012; Vrieze et al., 2013). Pizzagalli and colleagues have shown that anhedonia is associated with atypical structure and function in neural networks involved in reward processing that are distinct from other symptoms of depression and anxiety. Specifically, anhedonia—but not other symptoms of depression—is associated with reduced volume of the nucleus accumbens (see Figure 30.2 at *www.guilford.com/weisz-forms*) and blunted nucleus accumbens response to reward (Wacker, Dillon, & Pizzagalli, 2009). If neuroscience can provide tools to identify endophenotypes of MDD and other disorders on a case-by-case basis, then clinicians may ultimately be able to select treatments that specifically target the key neural and behavioral characteristics of those endophenotypes. For example, behavioral activation is an empirically supported treatment for MDD that specifically targets anhedonia and has been shown to produce functional changes in brain structures associated with reward processing, including greater activity in the caudate while anticipating a reward, and in the paracingulate gyrus and orbital frontal cortex when receiving one (Dichter et al., 2009; see Figure 30.2). Although clinical instruments for assessing anhedonia via self- and collateral reports exist, neuroscience advances may contribute new and less subjective measures of anhedonia that are informed by studies of underlying neurobiology and not simply reports of clients or their parents, a point to which we return at the end of this chapter.

Neuroscience may also aid treatment research by identifying subtypes of psychopathology related to differences in environmental experience. For example, children who have experienced maltreatment are at elevated risk for developing MDD and many other forms of psychopathology (Kilpatrick et al., 2003; McLaughlin et al., 2012), and respond more poorly to treatments for MDD than do youth without maltreatment exposure (Nanni, Uher, & Danese, 2012), particularly CBT (Barbe, Bridge, Birmaher, Kolko, & Brent, 2004; Lewis et al., 2010). Differences in neural structure and function might explain this elevated risk for psychopathology and poor treatment response. For example, maltreated youth exhibit greater amygdala response to negative cues—a pattern associated with anxiety and other forms of internalizing psychopathology (e.g., Thomas et al., 2001) and greater recruitment of the prefrontal cortex during attempts to regulate emotion using cognitive reappraisal (McLaughlin, Peverill, Gold, Alves, & Sheridan, 2015). This pattern suggests that cognitive reappraisal requires greater cognitive resources for maltreated than for nonmaltreated youth, and that greater practice in cognitive restructuring might be necessary for it to be effective for them. Other work suggests that maltreatment is associated with blunted response to reward in the ventral striatum (Hanson, Hariri, & Williamson, 2015), an area largely overlapping the nucleus accumbens. This is the same pattern described earlier in association with anhedonia (Pechtel et al., 2013). This pattern suggests that behavioral activation might be a particularly useful treatment option for maltreated children with MDD, although we are unaware of studies testing this possibility. Taken together, it has been argued that MDD, and potentially other forms of psychopathology, in maltreated youth constitute a distinct clinical subtype requiring alternative treatments (Teicher & Samson, 2013). By identifying neurobiological differences that might explain why treatments are less effective in maltreated youth, neuroscience may allow clinical scientists to hypothesize and test individualized courses of treatment for children and adolescents with a history of maltreatment.

If replicated, these and similar studies could inform a new generation of clinical assessments designed not only to assess symptomatology but also to provide clues as to the treatment most likely to be effective for a particular client. Neuroscience approaches might ultimately contribute to the development of behavioral measures that discriminate between neural states corresponding to different treatment sensitivities and might be more feasible for use in clinical settings. Eventually, advances in technology (e.g., mobile scanners) may even allow neuroimaging tools to be incorporated into routine assessment. In either case, more rapid prescription of individualized courses of care would facilitate faster clinical gains, resulting in better quality care, and less time and money spent on treatments that are unlikely to be effective.

USING NEUROSCIENCE TO IDENTIFY MECHANISMS OF TREATMENT CHANGE

Clinical psychology has reached a stage of treatment research where the question has shifted from what works to *how* and *for whom* our evidence-based treatments work. Although hundreds of evidence-based treatments for children and adolescents exist, few treatment studies propose or evaluate a specific and justifiable mechanism through which the effect of a treatment on clinical gains is mediated (Kazdin, 2007; Weersing & Weisz, 2002). There is an urgent need for this type of research on treatment mechanisms, as understanding the mechanisms through which our treatments work will allow us to optimize treatments to be most effective, make treatment more efficient by retaining only essential elements, better predict individual differences in treatment response, and identify new therapeutic methods and opportunities (Kazdin, 2007). By articulating neurobiological mechanisms underlying the etiology and maintenance of psychopathology and treatment efficacy, and providing new ways to observe these mechanisms in the brain, neuroscience provides a unique source of information about how and why our treatments work and how we can improve them.

We provide an illustrative example of how neuroscience can help clarify the mechanism of treatment for CBT for posttraumatic stress disorder (PTSD). Exposure to trauma creates powerful associations between fear and the people, sights, sounds, and smells that were present during the traumatic event. These fear memories are readily recalled when survivors of trauma are exposed to stimuli associated with the traumatic experience. In the normal course of recovery following a traumatic event, most people gradually begin to associate these feared stimuli with safety as they repeatedly encounter them without threat; this process is known as extinction learning. However, the original fear memory coexists with these safety memories and can be reinstated in specific circumstances (Bouton, 2002, 2004). Many theoretical accounts of PTSD propose that the disorder reflects a failure of extinction learning and the retrieval of that learning, resulting in poor inhibition of fear (Jovanovic & Ressler, 2010; Milad & Quirk, 2012). In essence, safety (or extinction) memories are difficult to create or retrieve for individuals who develop PTSD following a trauma, resulting in persistent fear responses to cues associated with the traumatic event; these persistent fear responses are reflected in the intrusion symptoms of PTSD (Norrholm et al., 2011). A proposed mechanism for the effectiveness of exposure treatments for PTSD, which have strong empirical support (Cohen, Deblinger, Mannarino, & Steer, 2004; Foa, McLean, Capaldi, & Rosenfield, 2013), is that they alleviate PTSD symptoms by supporting fear extinction (Rothbaum & Davis, 2003). However, it is difficult to verify that the mechanism of change in exposure therapy in PTSD actually involves improvements in the ability to retain and retrieve extinction memories using behavioral methods alone.

Neuroscience provides a direct method for measuring fear extinction learning and retrieval. Evidence from both animal and human studies documents the central role of the amygdala (see Figure 30.1 at *www.guilford.com/weisz-forms*) in both the acquisition of fear (Delgado, Olsson, & Phelps, 2006; Johansen, Cain, Ostroff, & LeDoux, 2011) and in extinction learning (Phelps, Delgado, Nearing, & LeDoux, 2004). During successful retrieval of extinction learning, the ventromedial prefrontal cortex (vmPFC) is activated and inhibits the amygdala and, accordingly, the original fear memory (Milad & Quirk, 2012; Phelps et al., 2004). Research in neuroscience has already established differences in brain structure and function in individuals with PTSD consistent with hypothesized learning and neural mechanisms, with individuals with PTSD showing greater amygdala activity and reduced vmPFC activity during retrieval of extinction learning (Milad et al., 2008, 2009). Simpler biomarkers can also be used to measure these processes outside the scanner, most notably, skin conductance response (a measure of sympathetic nervous system activation that reflects greater arousal and fear) and fear-potentiated startle (Jovanovic & Ressler, 2010; Norrholm et al., 2011; Phelps et al., 2004).

We are unaware of research examining whether improvements in the retention of extinction learning are a mechanism explaining successful treatment of PTSD with exposure therapy, despite long-standing theoretical speculation that this is the mechanism underlying exposure therapy. Examination of the effects of PTSD treatment on the learning processes and underlying neural systems involved in fear extinction would allow us to test whether exposure is working the way we expect, to monitor progress, and to test conceptual models of the etiology and maintenance of PTSD. If treatment effects and corresponding improvements in symptomatology correspond to theoretical projections, it becomes possible to improve treatments based on these models, including novel pharmacological adjuncts to evidence-based treatments (Davis, Ressler, Rothbaum, & Richardson, 2006; Ganasen, Ipser, & Stein, 2010) as well as innovations in behavioral treatment (Monfils, Cowansage, Klann, & LeDoux, 2009; Schiller et al., 2010). Although these mechanisms have yet to be examined in PTSD, recent research suggests that children and adolescents who do not respond to CBT for anxiety disorders exhibit blunted reduction in skin conductance responses during fear extinction relative to treatment responders and nonanxious children (Waters & Pine, 2016). This finding provides some support for the clinical relevance of fear learning processes, and the neural circuitry that supports them, to treatment outcomes in children and adolescents.

Most intriguingly, close integration of treatment with neurobiological models of psychopathology allows us to explore innovative theories that could explain shortcomings in our treatment methods. For example, recent neuroscience research suggests that, rather than representing a simple deficit in recall of fear extinction memories, PTSD may ultimately result from a failure to discriminate between contexts associated with safety and those associated with threat, possibly related to structural and functional differences in the hippocampus (Garfinkel et al., 2014; O'Doherty, Chitty, Saddiqui, Bennett, & Lagopoulos, 2015; Rougemont-Bücking et al., 2011). Further investigation supporting a context-processing account of PTSD could lead to novel improvements in treatment approaches. For example, it is possible that contextual modulation during exposure therapy (e.g., by changing where exposure is conducted, either *in vivo* or through virtual reality) would improve treatment outcomes. This approach has received some support in research on simple phobia (Vansteenwegen et al., 2007). In PTSD, this hypothesis is premature but potentially promising if a context processing account of PTSD continues to receive support. However, because contextual processing is quite challenging to study with behavioral methods, direct comparison of these competing theories is currently possible only with neuroscience methods.

Neuroscience research on mechanisms underlying the etiology and maintenance of child and adolescent psychopathology is particularly valuable, because developmental changes in relevant neural systems may identify periods of greater or lesser sensitivity to individual treatments. For example, the model of PTSD reviewed earlier focused on disruptions in the retrieval of extinction memories related to trauma-relevant cues in adults with PTSD. Recent translational work spanning rodent and human research suggests meaningful developmental variation in extinction learning, with impaired extinction learning occurring during adolescence in both rodents and humans (Pattwell et al., 2012). Although replication of this finding is critical, it suggests that modification of core elements of exposure-based treatments for PTSD might improve treatment efficacy in adolescents. In particular, delivering treatment elements involving exposure for an extended period of time might be needed to facilitate fear extinction in adolescents. Future research is needed to examine this possibility directly.

LIMITATIONS, OBSTACLES, AND FUTURE DIRECTIONS

Although clinical neuroscience has made tremendous strides in recent years and has potential to improve treatment practices, there is still much to learn. The burden of proof lies with researchers to produce neuroscience research with clear translational applications, and a number of obstacles and limitations will need to be overcome before the clinical potential of neuroscience to improve psychosocial treatments for children and adolescents can be fully realized.

Perhaps the most obvious conclusion at this stage is the need for more neuroscience research specifically examining disorders of childhood and their treatment. Although extensive neuroscience research focuses on associations of brain structure and function with mental health and increasingly with treatment, much of this research has been conducted in adults. However, developmental variations in behavior and psychopathology are frequently paralleled by broad developmental changes in the brain. These developmental changes have important implications for understanding the etiology and treatment of psychopathology in children and adolescents. For example, it has been argued that the elevated risk for onset of MDD, anxiety, risk behaviors, and substance use that occurs during adolescence is related to the greater salience of aversive and appetitive cues but reduced capacity to modulate responses to these cues during this developmental period, and that these behavioral changes are explained by the earlier functional development of structures that respond to emotional salience (e.g., the amygdala) and reward (e.g., the ventral striatum) relative to regions in the prefrontal cortex that modulate and inhibit activation in these subcortical structures (Casey & Jones, 2010; Galvan et al., 2006; Hare et al., 2008; Somerville, Jones, & Casey, 2010; Steinberg, 2008). Increasing awareness of the profound changes in neural structure and function that accompany development and the numerous implications that these changes have for understanding child and adolescent psychopathology have led to an explosion of research in developmental neuroscience. Yet these advances have yet to be applied in a systematic way to treatment research. For example, the seminal adolescent "imbalance" theory described earlier has potential implications for adapting evidence-based treatments of both internalizing and externalizing problems to be more attuned to the unique neurodevelopmental features of adolescence. For example, heightened sensitivity of the ventral striatum to reward during this developmental period may make adolescents particularly likely to respond to treatments that target reward-related processes, such as behavioral activation. We are unaware of research examining this or other hypotheses on the treatment implications of this theory. It is crucial that clinical neuroscience continue to ask developmental questions and that translational research is conducted with the specific goal of exploring the clinical implications and utility of new discoveries in developmental neuroscience.

A second key issue involves the degree to which it is practical and logistically feasible to incorporate neuroscience measures into clinical research with children and adolescents. There are many practical obstacles to the use of these tools with children in research and clinical contexts. MRI data acquisition is both expensive and time consuming. As scanning procedures can generate anxiety and require children to be separated from their parents, special training and practice are typically required when scanning children, especially children with psychopathology. Of particular concern with children is the importance of remaining still during the scan to generate data that are free of motion-related artifacts, which requires training and sometimes practice in a mock scanner (Raschle et al., 2009). Even after data have been acquired, additional expertise is required for preprocessing and analysis (see Huettel et al., 2014, for an overview). Other methods such as EEG also require substantial investments of time and money, as well as meaningful amounts of data processing.

Although we believe that neuroscience provides important tools for improving treatment methods, it would be unreasonable for clinicians to accept exponentially increased assessment costs and the need for technicians with advanced skills in computer programming and image analysis with either enthusiasm or much hope of improved care for their clients. To that end, realizing the clinical potential of neuroscience for child and adolescent treatments will require close collaboration between neuroscientists and treatment researchers, each of whom bring necessary but not sufficient skills to tackle these challenges. We are confident that advances in technology, especially more portable and cheaper data acquisition tools, as well as improved analysis software, will continue to reduce the cost and burden of conducting neuroscience research, although it is not clear whether this progress will produce a degree of automation and quality control sufficient to make routine neuroimaging feasible in clinical contexts.

Although advances in technology may indeed render the direct application of neuroscience methods to treatment more feasible, it is more realistic in the near future that neuroscience will enable better treatments by identifying more easily measureable correlates of clinically relevant biomarkers. Numerous behavioral tasks already exist that are reliably associated with neural function and have potential applications to treatment. For example, anhedonia is associated with a unique pattern of behavior on reward learning tasks as compared to other symptoms of depression, and this behavioral pattern is strongly associated with the atypical neural phenotype that characterizes anhedonia, which we have previously discussed. Specifically, individuals with anhedonia do not change their behavior (e.g., respond more quickly or accurately) to stimuli involving a greater probability of reward, and this behavioral pattern also predicts increases in anhedonia over time (Pizzagalli, Jahn, & O'Shea, 2005). Reward learning tasks require only a computer to administer and can be scored automatically. Incorporating these behavioral tasks into intake assessments for depression could help to identify a group of clients for whom a treatment specifically targeting anhedonia, such as behavioral activation, might be appropriate. Indeed, some research in adults has suggested that behavioral activation may be more effective than cognitive therapy for severe depression, which is often characterized by anhedonia (Dimidjian et al., 2006). Tasks assessing attention bias to threat (Bar-Haim, Lamy, Pergamin, Bakermans-Kranenburg, & van IJzendoorn, 2007), cognitive control (Schoemaker et al., 2012), and adaptation to emotional conflict (Etkin, Egner, Peraza, Kandel, & Hirsch, 2006)—among many other cognitive and affective functions—might hold similar promise in this regard.

Many steps remain before the full potential of neuroscience to effect clinical gains in pediatric treatment can be realized. More neuroscience research needs to be conducted in child and adolescent samples with specific translational goals in diagnosis or treatment evaluation, and treatment researchers should incorporate neural measures within intervention studies in order to capture data on neural mechanisms of effective clinical change. As we learn more about clinical biomarkers, researchers will need to investigate related behavioral and physiological measures that are practical in clinical settings. Finally, effective training and dissemination strategies for neuroscience-informed methods will need to be developed.

CONCLUDING COMMENTS

Neuroscience provides great promise in informing future treatments of children and adolescents. It has the potential to reveal individual differences in neural function that are related to variability in treatment response. Investigation of these differences and the discovery of easily administered measures of these biomarkers may allow us to make better-informed judgments about the most effective treatments for individual clients, particularly in domains where meaningful subgroups respond differentially to specific treatments. Investigation of the neural correlates of child and adolescent psychopathology and its treatment has the potential to reveal the mechanisms by which our clients get better. This may provide new insights into treatments that are known to be effective and generate new questions about how treatments can target disruptions in brain development that result in psychopathology.

There remains much to learn about these topics. Special effort will be needed to conduct neuroscience research with both a specific focus on the assessment and treatment of child and adolescent psychopathology and a clear goal of clinically relevant discovery. Nevertheless, we believe that neuroscience has the potential to enrich our understanding of psychopathology and its treatment. This, in turn, may allow us to develop more effective treatments for children and adolescents in the future.

ACKNOWLEDGMENTS

This research was supported by funding from the National Institute of Mental Health (Grant No. R01-MH103291).

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CHAPTER 31

Assessment Issues in Child and Adolescent Psychotherapy

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Assessment is the "evidence" in *evidence-based treatment*. Practitioners and researchers alike use assessments to identify psychological distress, plan treatment, monitor treatment response, and gauge treatment effectiveness. Consequently, our assumptions about a treatment's ability to address child and adolescent patients' needs can only be as strong as the quality of the assessment data that support its use (hereafter, we refer to children and adolescents collectively as "children," unless otherwise specified). By "quality," we mean not just whether psychometric data indicate that an instrument reliably and validly assesses patients' concerns, or sensitively gauges treatment response. Rather, in order to *personalize* mental health care and serve the unique needs of each of our patients, mental health assessments ought to be structured so that their comprehensiveness "matches" the complexity underlying patients' clinical presentations.

Patients lead complex lives. They may display co-occurring mental health concerns (e.g., anxiety and disruptive behavior; attention/hyperactivity and mood concerns). They may display concerns differently depending on the context (e.g., home vs. school vs. peer interactions). In theory, our assessments should be constructed sensitively to capture these patterns of comorbidity and contextual variations in patients' concerns. In practice, common methods for integrating assessment data often impede our ability to capture patients' rich clinical presentations within psychotherapy practice and research. As we discuss below, integrative methods such as structural equation modeling and use of "primary" and "secondary" outcome measures often assume that measurement error accounts for any inconsistencies among findings across multiple treatment outcome measures (De Los Reyes, Kundey, & Wang, 2011; De Los Reyes, Thomas, Goodman, & Kundey, 2013; Holmbeck, Li, Schurman, Friedman, & Coakley, 2002). If such an assumption does not accurately characterize inconsistent findings, then practitioners and researchers may overlook important clinical information.

The latest research on evidence-based assessment yields a set of five principles to follow when conducting assessments in psychotherapy (Figure 31.1). Each principle logically follows from the principle preceding it; thus, Principle 1 is the foundation upon which Principle 2 rests, and so forth. Indeed, forging conceptual links among these principles allows us to build a firm foundation on which to make three recommendations for conducting assessments in psychotherapy (Figure 31.1). We structure our chapter around these principles and recommendations, and we highlight important directions for future research.

EVIDENCE-BASED PRINCIPLES UNDERLYING PSYCHOTHERAPY ASSESSMENTS

Principle 1: No "gold-standard" measure exists to quantify child mental health. Over the past 3 decades, developmental psychopathology (Cicchetti, 1984) has been the dominant framework for understanding the etiology and maintenance of children's mental health concerns. A key tenet of this framework is that mental health

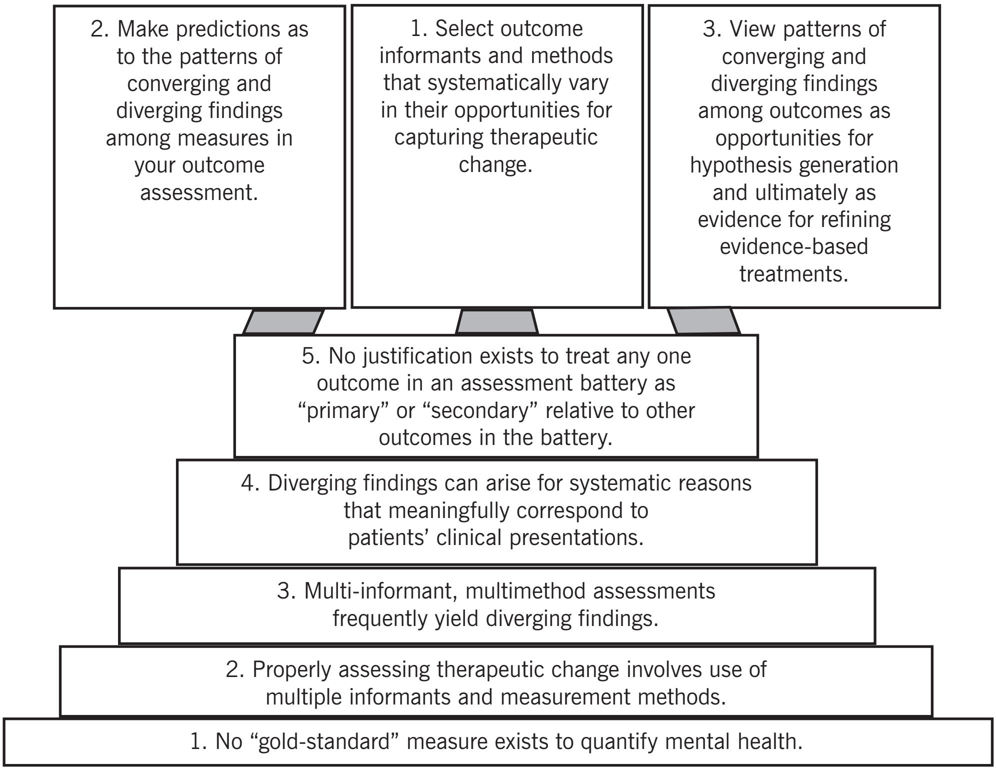

FIGURE 31.1. Principles and recommendations for assessments conducted in psychotherapy practice and research.

concerns arise out of a complex interplay of biological, psychological, and sociocultural factors that offer protection from (or pose risk for) the emergence of maladaptive reactions to one's environment. Consider what we would observe if a group of mental health professionals (MHPs) each took a random sample of patients from their clinics or laboratories and reviewed their intake evaluations. We would likely find substantial individual differences among patients in their family histories of mental health concerns, their strategies for coping with daily stressors or significant traumas, and the general safety of their neighborhoods. Furthermore, the "story" of any one patient's mental health concerns would be unlikely to be fully accounted for by family history, neighborhood safety, or interactions with significant others. Could the most capable assessor among us take one of these patients and confidently "pick" a score from *one* survey, clinical interview, biological assay, or performance-based task administered to that patient that captures all of the complex contributing factors mentioned previously? We think not; thus, Principle 1 is actually a key tenet of evidence-based assessment: No "gold-standard" measure exists to quantify mental health (De Los Reyes, 2011; Hunsley & Mash, 2007).

Importantly, we often discuss the "no gold-standard" principle in the context of a single assessment occasion (e.g., intake diagnostic assessment). Yet, if no single measure can quantify a patient's concerns at any one time point, then it logically follows that no single measure can comprehensively index *therapeutic change,* which requires assessment across two or more time points (e.g., one assessment at baseline and another immediately posttreatment). Given this, what does a proper assessment approach look like?

Principle 2: Properly assessing therapeutic change involves use of multiple informants and measurement methods. Both Principle 1 and well-established concepts in psychometrics and study design support Principle 2: One should take a multi-informant, multimethod approach to assessing therapeutic change. Two concepts seem particularly pertinent to highlight. First, the concept of *measurement error* holds that one attains a more precise estimate of a construct by understanding the average score derived from *multiple* judges' ratings of that construct (Edgeworth, 1888). Second, *converging operations* is a set of measurement operations by which one attains strong empirical support underlying a hypothesis insofar as multiple methodologically distinct tests of that hypothesis yield similar conclusions (Garner, Hake, & Eriksen, 1956). Both concepts carry the same message: When seeking "the truth," multiple measures *outperform* any one measure.

Consistent with the measurement error concept, MHPs have developed a host of measures to assess children's mental health. A review of these measures is outside of the scope of this chapter. However, existing resources detail extensive lists of clinical surveys, structured and semistructured diagnostic interviews, behavioral observations, and performance-based tasks that reliably and validly index various domains of patients' mental health, and are also sensitive to therapeutic change (e.g., Beidas et al., 2015; Hunsley & Mash, 2008). Furthermore, treatment studies routinely use multiple measures from different informants' perspectives (e.g., parent, teacher, patient) and measurement methodologies (e.g., interviews, surveys, behavioral observations) to evaluate treatment outcomes (e.g., De Los Reyes & Kazdin, 2008; Weisz, Doss, & Hawley, 2005).

To evaluate treatment outcomes and estimate treatment effects, MHPs often interpret findings from these multiple outcome measures using ideas consistent with converging operations. Specifically, MHPs often expect multi-informant, multimethod outcome batteries to consistently support one conclusion as to the effects of the treatment(s) examined (e.g., De Los Reyes & Kazdin, 2006); that is, historically, MHPs have not posed one hypothesis for some measures and another hypothesis for others; tests of multiple outcomes tend to fall under one “umbrella” hypothesis (e.g., treatment will yield significant improvements in patients’ functioning, relative to improvements in functioning for patients in the control group).

Principle 3: Multi-informant, multimethod assessments frequently yield diverging findings. To the extent that outcome batteries tend to yield homogenous effects across measures, interpreting findings using converging operations would be a fruitful approach. However, this approach often conflicts with findings from the clinical assessment literature. Specifically, over 50 years of research indicates that the informants who complete outcome measures in treatment studies (e.g., parents, teachers, patients, clinicians; Weisz et al., 2005) provide reports that evidence relatively low correspondence with one another (e.g., Achenbach, McConaughy, & Howell, 1987; De Los Reyes & Kazdin, 2005; De Los Reyes et al., 2015). In fact, the mean level of between-informant correspondence observed in 25 years of studies ($n = 119$) meta-analyzed a quarter-century ago (Achenbach et al., 1987) was essentially identical to the mean correspondence level observed in 25 years’ worth of studies ($n = 341$) examined in a recent meta-analysis of between-informant correspondence (De Los Reyes et al., 2015) (i.e., both Pearson r’s ≈ .28).

Furthermore, relatively low levels of correspondence manifest between informants’ reports in assessments conducted worldwide (Rescorla et al., 2013, 2014), as well as between informants’ reports and other measurement modalities (e.g., patients’ physiology and observed behavior; De Los Reyes & Aldao, 2015; De Los Reyes et al., 2012). Importantly, low levels of between-informant correspondence translate into diverging findings as to treatment effects (e.g., Casey & Berman, 1985; De Los Reyes & Kazdin, 2006, 2009; Weisz, Weiss, Alicke, & Klotz, 1987; Weisz, McCarty, & Valeri, 2006), with some reviews reporting treatment effects that range from small to large (e.g., d’s ranging from 0.1’s to 1.0+; Cohen, 1988).

Principle 4: Diverging findings can arise for systematic reasons that meaningfully correspond to patients’ clinical presentations. The diverging outcomes that frequently arise within studies of children’s treatments have historically been viewed as methodological nuisances. In fact, this view readily reveals itself in the many approaches available for integrating diverging outcomes. As mentioned previously, to address diverging findings, researchers often use combinational algorithms (e.g., AND/OR rules; Piacentini, Cohen, & Cohen, 1992), latent variable models (e.g., Holmbeck et al., 2002), or select “primary” and “secondary” outcome measures in advance of a treatment study (e.g., De Los Reyes, Kundey, et al., 2011). With few exceptions (e.g., Bartels, Boomsma, Hudziak, van Beijsterveldt, & van den Oord, 2007), these approaches assume that diverging findings are best explained by measurement error (De Los Reyes, Thomas, et al., 2013). In fact, these approaches often assume that one ought to compensate for diverging findings by either focusing on the pieces of evidence that do converge with each other (e.g., latent variable models; AND rule algorithm; see Piacentini et al., 1992) or just select a "primary" outcome measure (De Los Reyes, Kundey, et al., 2011).

Recent theoretical work seeks to expand on the converging operations concept and provide alternative models for interpreting converging and/or diverging findings. Specifically, the Operations Triad Model (OTM) promotes an evidence-based, hypothesis-driven approach to interpreting multi-informant, multimethod clinical assessments (De Los Reyes, Thomas, et al., 2013). We graphically represent the key components of the OTM in Figure 31.2. Within this model, one predicts the patterns of converging and/or diverging findings that arise from an assessment, based on characteristics of the assessment and the nature of the mental health domains assessed. For instance, consider a study in which researchers examine the effects of a treatment for reducing attention and hyperactivity concerns among a sample of adolescent outpatients. All outpatients met diagnostic criteria for attention-deficit/hyperactivity disorder (ADHD), which requires the presence of symptoms and impairment across two or more contexts (e.g., home and school; American Psychiatric Association, 2013). The researchers use parent and teacher reports to assess treatment outcomes, and posit that, given the ADHD diagnosis, parents and teachers each have *opportunities* for observing (1) behavioral displays of ADHD symptoms and therefore (2) symptom changes over the course of treatment. If researchers predicted that treatment would significantly reduce adolescents' ADHD symptoms, then findings based on parent- and teacher-reported outcomes should reflect *converging operations* (Figure 2a): the idea that both informants' reports should yield the same conclusions (i.e., significant symptom reductions).

In contrast to findings that reflect converging operations, sometimes one expects findings from multiple outcome measures to diverge from each other. For example, consider a practitioner working in an elementary school who implements a school-based behavior modification program to reduce the ADHD symptoms displayed by a third-grade student. Before implementing the program, the practitioner received data from the student's parent and teacher, both of whom indicated the presence of ADHD symptoms in both home and school settings. However, the practitioner did not have the staffing and resources to implement a home-based behavior modification program, thus restricting the practitioner to addressing the student's concerns to those displayed in the school setting. Before treatment, the practitioner might predict that immediately following treatment, the teacher-reported outcomes would reflect reductions in ADHD symptoms to a greater degree than the reductions observed for parent-reported outcomes. This is because (1) the focus of the intervention would be constrained to the school context and therefore (2) the teacher, relative to the parent, would have *greater opportunities* for observing displays of therapeutic change. Within the OTM, this pattern would reflect *diverging operations* (Figure 2b): The inconsistent findings across parent- and teacher-reported outcomes would meaningfully reflect differences between settings in the magnitudes of therapeutic change.

The OTM also addresses instances in which findings from multiple outcome measures diverge, but the diverging findings likely stem from measurement error or some other methodological artifact. To continue with our ADHD example, consider instances in which (1) parent and teacher completed different measures

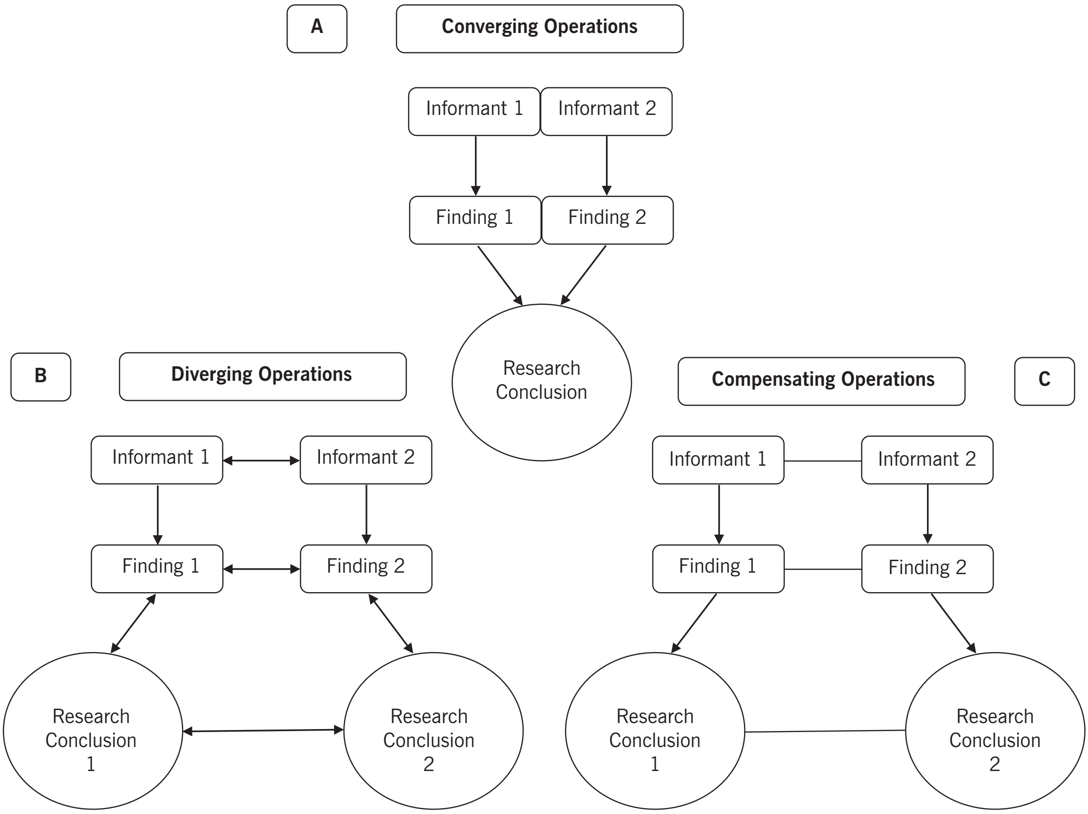

FIGURE 31.2. Graphical representation of the research concepts that comprise the Operations Triad Model. The top half (Figure 2A) represents Converging Operations: a set of measurement conditions for interpreting patterns of findings based on the consistency within which findings yield similar conclusions. The bottom half denotes two circumstances within which researchers identify discrepancies across empirical findings derived from multiple informants' reports and thus discrepancies in the research conclusions drawn from these reports. On the left (Figure 2B) is a graphical representation of Diverging Operations: a set of measurement conditions for interpreting patterns of inconsistent findings based on hypotheses about variations in the behavior(s) assessed. The solid lines linking informants' reports, empirical findings derived from these reports, and conclusions based on empirical findings denote the systematic relations among these three study components. Furthermore, the presence of dual arrowheads in the figure representing Diverging Operations conveys the idea that one ties meaning to the discrepancies among empirical findings and research conclusions and thus how one interprets informants' reports to vary as a function of variation in the behaviors being assessed. Last, on the right (Figure 2C) is a graphical representation of Compensating Operations: a set of measurement conditions for interpreting patterns of inconsistent findings based on methodological features of the study's measures or informants. The dashed lines denote the lack of systematic relations among informants' reports, empirical findings, and research conclusions. From De Los Reyes, Thomas, Goodman, and Kundey (2013). Copyright © 2013 Annual Review. Reprinted by permission.

of attention and hyperactivity; (2) parent and teacher completed versions of the same measure but the parent-reported form contained different items or response options than the form completed by the teacher; or (3) parent and teacher completed parallel forms of the same measure but internal consistency estimates were significantly larger for the parent- relative to the teacher-reported measures. If parent- and teacher-reported outcomes yielded diverging findings in terms of treatment response, each of these instances would have a built-in methodological factor that could parsimoniously explain the inconsistencies. Specifically, in the first two instances methodological artifacts of the assessment design (i.e., instrumentation effects, different item content, different response options) could explain why the inconsistencies occurred. Conversely, in the third instance instrumentation was held constant across parent and teacher reports, and it was the difference in measurement reliability that could explain the inconsistent findings. These are examples of *compensating operations* (Figure 2c): The inconsistent findings across parent- and teacher-reported outcomes would reflect mundane, methodological features of the assessment process, rather than any meaningful variations in estimates of therapeutic change. In fact, within instances that reflect compensating operations, MHPs would be justified in integrating multi-informant data using techniques that assume diverging findings result from measurement error (e.g., combinational algorithms, latent variable models; primary outcome measures). In summary, the OTM provides MHPs with a hypothesis-driven, evidence-based approach for interpreting patterns of outcomes from multimethod, multi-informant assessments. Reviews of studies supporting the main tenets of the OTM are available elsewhere (De Los Reyes et al., 2013, 2015).

Principle 5: No justification exists to treat any one outcome in an assessment battery as "primary" or "secondary" relative to other outcomes in the battery. The first four principles we have discussed result in drawing firm conclusions regarding outcome assessments. Practitioners and researchers should take a multi-informant, multimethod approach to these assessments. The multi-informant, multimethod approach commonly results in diverging findings. These diverging findings might meaningfully reflect important elements of patients' clinical presentations. These conclusions about outcome assessments logically lead to the final principle, Principle 5: Any one measure from a multi-informant, multimethod assessment battery cannot be given "primacy" over other measures in the battery.

The importance of Principle 5 cannot be understated. As mentioned previously, a common practice in psychotherapy studies involves designating "primary" and "secondary" outcome measures in advance of the study (De Los Reyes, Kundey, et al., 2011). This approach seemingly has merit as it may reduce type I error when testing treatment effects (i.e., fewer tests of treatment effects in one study). However, when diverging findings best reflect diverging operations and not compensating operations (Figure 31.1), this practice likely does more harm than good. That is, interpreting evidence for psychotherapeutic change based on a single measure when findings from this measure meaningfully diverge from findings taken from other measures may result in losing valuable information about therapeutic change. Indeed, even primary outcome measures that purportedly assess "global" improvements in functioning may nonetheless assess such functioning from a particular perspective (e.g., clinician whose treatment response ratings largely reflect parent reports and not reports from other informants) (De Los Reyes, Alfano, & Beidel, 2011).

Furthermore, the practice of identifying primary outcome measures essentially reverts outcome assessment back to use of "gold-standard" measures that, as mentioned previously, have no evidentiary basis for use in assessing treatment response in mental health practice and research. Crucially, the multi-informant, multimethod approach to outcome assessment is consistent with current research directions in mental health, namely, the Research Domain Criteria (RDoC; Insel et al., 2010). Indeed, the RDoC emphasizes understanding mental health concerns across *multiple units of analysis* relevant to assessing patients' functioning (e.g., informants' subjective reports, observed behavior, physiological functioning, neural activity; De Los Reyes & Aldao, 2015). In light of the RDoC's emphasis on understanding both the mechanisms underlying mental health concerns and improving the ability of treatments to target these mechanisms, we expect practice and research to move away from emphasizing primary outcome measures and move toward increasing its emphasis on multi-informant, multimethod approaches to assessing psychotherapeutic change (Aldao & De Los Reyes, 2015).

One more issue regarding Principle 5 and the OTM warrants comment. Our discussion thus far indicates that, barring instances in which diverging findings reflect compensating operations, selecting primary measures to estimate treatment response (or focusing on shared variance across multiple measures/informants) potentially results in losses of important clinical information. To what extent do these implications apply to efforts by task forces and professional groups to classify and list "evidence-based programs and practices" (Hunsley & Lee, 2014)? After all, much of this work relies on summary conclusions, synthesizing and summarizing across multiple measures from multiple informants, and often by taking estimates of shared variance across multiple outcomes in a study or multiple studies of the same treatment.

Importantly, the issues raised by our five principles apply as much to summaries of treatment research evidence as they do to individual treatment studies. That is, if one summarizes research evidence from treatment studies and focuses squarely on the converging evidence from these studies, then empirical tests ought to be conducted to examine the degree to which any diverging findings among these studies are best explained by measurement error (i.e., compensating operations). Indeed, consider a circumstance in which diverging operations characterizes findings across studies of a specific treatment, such as studies of parent training for childhood conduct problems finding robust support across measures of home-based conduct problems and not school-based conduct problems. Here, focusing on estimates of converging variance across outcomes (e.g., creating summary effect sizes that collapse information across measures of home- and school-based functioning) might result in masking important nuances in the evidence. For instance, what if the evidence points to parent training reducing conduct problems in the home, but the treatment program might need augmentations to achieve effects that generalize to non-home settings such as school? In short, issues raised regarding a focus on converging evidence to the exclusion of careful interpretations of diverging findings apply to both individual studies and summaries of multiple studies.

RECOMMENDATIONS FOR CONSTRUCTING AND INTERPRETING PSYCHOTHERAPY ASSESSMENTS

Recommendation 1: Select outcome informants and methods that systematically vary in their opportunities for capturing therapeutic change. Our five principles inform three recommendations for using and interpreting multi-informant, multimethod assessments (Figure 31.1). First, we crafted a principled set of arguments for taking a multi-informant, multimethod approach to assessing psychotherapeutic change. Decades of research highlight that for much of childhood mental health practice and research, the measures we use to understand, diagnose, and treat mental health concerns largely diverge from one another, and sometimes this divergence yields useful clinical information. Thus, when constructing a multi-informant, multimethod outcome battery for which prior work suggests you should reasonably expect diverging findings, we recommend that you *make the divergence work for you rather than against you*. In other words, pretend your battery is more like a single measure of treatment outcomes, and each measure in your battery is an "item" on this measure. If prior work indicates that each of these items "behaves" differently in estimating change, shouldn't you capitalize on this diversity in estimates of change, rather than erroneously assume that each item should "hang together" like items on a unidimensional measure?

When taking a multi-informant, multimethod approach to assessing psychotherapeutic change, an important consideration is what measured domains such a battery should include. Based on work reviewed previously, one ought to include assessments of three domains. First, patients' symptoms and impairments (both for the condition targeted for treatment and commonly comorbid conditions) both factor prominently in the evidence underlying evidence-based interventions (e.g., Weisz et al., 2005), and diverging findings commonly arise from these assessments (De Los Reyes et al., 2015; De Los Reyes & Kazdin, 2006). Second, assessments should focus on changes in the "active ingredients" or mechanisms of change in psychotherapy (e.g., Kazdin, 2007) given that measurement of these domains (e.g., inconsistent parenting; associations with deviant peers; negative affect), often result in diverging findings (De Los Reyes, 2013). Third, a key consideration is that patients often encounter considerable individual differences in treatment response. Specifically, patients might experience characteristics that hinder treatment engagement (e.g., therapeutic alliance; Kazdin, Holland, Crowley, & Breton, 1997) and/or moderate treatment response (e.g., relatively high pretreatment impairment; Kazdin & Nock, 2003). Psychotherapy batteries should include measures of these domains, particularly at the beginning of treatment, in order to understand whether MHPs should incorporate a treatment component to enhance therapeutic engagement (i.e., reduce barriers to treatment engagement; Nock & Kazdin, 2005) or select a treatment for which prior work indicates that patients' characteristics do not portend a poor treatment response.

With considerations on outcome battery domains in mind, allow us to illustrate our first recommendation when applied to assessing treatment effects on symptoms and impairments. Consider a research team interested in testing the efficacy of a treatment for adolescent social anxiety disorder. A key issue with treating social anxiety disorder is that adolescents may display symptoms and impairments differently depending on the context (American Psychiatric Association, 2013). That is, for some patients, symptoms and impairments manifest across a variety of contexts (e.g., social events, performance-based settings, interactions with strangers), whereas other patients tend to display symptoms and impairments specifically within performance-based contexts (De Los Reyes, Bunnell, & Beidel, 2013). Here, concepts developed by Kraemer and colleagues (2003) for selecting informants might be quite helpful. Specifically, Kraemer and colleagues advocate for the purposeful "creation" of diverging findings by "mixing and matching" the selection of informants for an assessment. Selection decisions would be based on the context in which informants observe the mental health domains assessed (e.g., home vs. school) and the perspectives of the informants (other-reports such as those by parents and teachers vs. self-reports). Thus, a proper outcome assessment for social anxiety disorder might include reports from parents (i.e., other-perspective of symptoms in a home context), teachers (i.e., other-perspective of symptoms in a school context), and adolescents (i.e., self-perspective of symptoms in both home and school contexts). Based on prior work, this approach virtually guarantees diverging findings across outcome measures (e.g., De Los Reyes & Kazdin, 2006; De Los Reyes, Alfano, & Beidel, 2010, 2011; De Los Reyes et al., 2012). However, the diverging findings would stand a strong chance of reflecting diverging operations or findings that diverge for meaningful reasons.

Recommendation 2: Make predictions as to the patterns of converging and diverging findings among measures in your outcome assessment. Taking a multi-informant, multimethod approach to assessment is but the first step toward gleaning meaningful information from these assessments. Maximizing the utility of this approach requires making predictions for what patterns of converging and/or diverging findings among one's measures will "look like" and what they mean. To continue with our adolescent social anxiety disorder example, perhaps the research team wishes to examine the effects of separate components of a social anxiety disorder treatment, both alone and in combination with one another. One treatment component is an exposure-based protocol for reducing maladaptive physiological and behavioral reactions to structured, performance-based situations (e.g., speech giving at school). A second component is a social skills intervention for increasing social functioning in unstructured social situations with no performance expectations (e.g., attending parties and other social gatherings). The research team recruits a sample of adolescents who meet diagnostic criteria for social anxiety disorder and exhibit symptoms and impairments across these social situations, and randomly assigns adolescents to (1) the exposure-based component, (2) the social skills component, (3) a combined protocol with both components, and (4) a waitlist control.

To assess treatment outcomes, the research team implements a multi-informant outcome battery consisting of parent-, teacher-, and adolescent-reported outcomes. With this protocol, the waitlist control serves as a basis for comparison in which the researchers expect very little to no change across parent, teacher, and adolescent reports. Furthermore, the researchers expect each of the active treatment conditions to outperform the waitlist control, but to do so differently depending on the focus of the treatment. Specifically, the combined protocol's focus on reducing social anxiety disorder concerns in both performance-based and unstructured social situations should result in converging findings: The treatment should result in greater reductions across informants' reports relative to the waitlist condition. However, the exposure-only and social-skills-only conditions should exact change in the specific contexts in which they focus on exacting change, and these changes ought to manifest in diverging findings across reports. For instance, the exposure-only condition's focus on reducing social anxiety disorder concerns in performance-based contexts should result in greater differences between the treatment and waitlist conditions on teacher-reported outcomes relative to parent-reported outcomes. The reverse pattern of diverging findings should manifest when examining condition differences between the social-skills-only condition and the waitlist condition; greater differences for the parent-reported outcomes relative to the teacher-reported outcomes. Additionally, given that adolescents likely base their reports on self-observations of behavior across home and school contexts, their reports ought to yield findings in support of each of the exposure-only and social-skills-only conditions relative to the waitlist condition.

One key observation from our example warrants comment. We did not focus on the magnitudes of overall change in each of the treatment conditions relative to the waitlist condition. Indeed, a focus on overall change or even differences among treatment conditions in magnitudes of change would likely result in an expectation of converging findings across informants' reports. In fact, an expectation of broad change across informant-reported outcomes would only apply to the combined treatment protocol, given its focus on exacting psychotherapeutic change across contexts. The exposure-only and social-skills-only protocols were expected to exact psychotherapeutic changes specific to particular contexts. Thus, informants with the greatest opportunities for observing these changes would likely yield reports supportive of differences between these component-specific protocols and the waitlist condition. In summary, this example illustrates how one could implement an outcome assessment battery designed to produce patterns of converging and diverging findings that meaningfully reflect contextual variations in psychotherapeutic change.

Recommendation 3: View patterns of converging and diverging findings as opportunities for hypothesis generation and ultimately as evidence for refining evidence-based treatments. As mentioned previously, historically, practitioners and researchers have viewed diverging findings as indicators of measurement error or other methodological artifacts (e.g., rater biases). When assessing children's mental health, this view typically informs assessment practices that lose important information about patients' clinical presentations. We argue that practitioners and researchers should view patterns of converging and diverging findings with a sense of curiosity: Do these patterns reflect individual differences in how my patients respond to treatment? Patterns of converging and diverging findings should become important resources for hypothesis generation. Why did the treatment result in positive psychotherapeutic changes based on parent reports and not teacher reports; patient self-reports and not parent reports; or teacher reports and not parent reports? To this end, prior work testing the main tenets of the OTM may provide ideas for how to conduct follow-up studies to decipher the meaning of patterns of converging and/or diverging outcomes (e.g., De Los Reyes, Henry, Tolan, & Wakschlag, 2009; De Los Reyes, Bunnell, et al., 2013; De Los Reyes, Alfano, Lau, Augenstein, & Borelli, 2016). In turn, these variations in assessment outcomes might provide key evidence used to refine the foci of evidence-based treatments. For instance, if your treatment for childhood conduct problems consistently produces change in parent-reported and not teacher-reported outcomes, might this signify that the intervention yields change specific to the home context? If so, should your treatment be modified to focus exclusively on addressing conduct problems in the home, with an additional component introduced into your intervention that focuses exclusively on conduct problems as expressed in nonhome contexts?

FUTURE DIRECTIONS

The utility of patterns of converging and diverging findings should come from how they assist in personalizing mental health care, in matching specific treatment components to the patterns of patients' treatment responses observed within multi-informant outcome batteries (De Los Reyes et al., 2015). To this end, we highlight three directions for future research.

Integrating Multi-Informant Assessments with New Technological Assessment Methods

First, a key direction for future research involves continued work that tests the applicability of the OTM to multi-informant assessments of children's mental health. In particular, an important issue with prior work on the OTM is its focus on interpreting diverging findings among informants' reports in screening assessments and/or diagnostic assessments outside the context of evaluating treatment response. Thus, we recommend that future research examine whether these findings generalize to identifying contextual variations in patients' responses to treatments. To this end, recent technological advances may facilitate research on these issues. For instance, MHPs now can assess *in vivo* changes in patients' physiological functioning both in and outside the clinic (e.g., heart rate monitors; Thomas, Aldao, & De Los Reyes, 2012). Using these devices, one can track changes in physiological functioning over the course of treatment with standardized tasks in the clinic (e.g., graduated exposure; structured family interactions) or naturalistically within home and school contexts. Using these data, one can examine whether changes in physiological functioning within these contexts "match" the reports of functioning from multiple informants. For example, do decreases in maladaptive physiological functioning at school, but not home, occur when teachers report positive changes in psychosocial functioning that go uncorroborated based on parent reports?

Relatedly, recent work on geographical assessments leverage widely available online platforms (e.g., Google Street View) to assess the degree to which children reside in neighborhoods typified by environmental risks (e.g., high crime and economic disadvantage; Odgers, Caspi, Bates, Sampson, & Moffitt, 2012). Here, too, one can use these technological advances in conjunction with multi-informant assessments. For instance, at the intake assessment, one could examine the patient's neighborhood risks to determine any potential barriers to treatment engagement or treatment response. Based on this assessment, one could include techniques discussed previously to increase engagement (e.g., Nock & Kazdin, 2005), and monitor the degree to which the patient experiences positive treatment responses based on reports of informants who observe the patient in "risk-prone contexts" (e.g., parent reports at home), as well as informants who observe the patient in areas that lie outside of risk-prone contexts (e.g., a relative who sees the patient regularly but lives outside of the patient's neighborhood). In summary, we encourage future work that leverages recent technological advances to enhance the interpretability of multi-informant, multimethod treatment outcome assessments.

Using Multi-Informant Assessments to Detect Session-by-Session Therapeutic Change

Second, an innovative approach to assessing psychotherapy outcomes involves assessing session-by-session changes, and there exist evidence-based approaches to assessing such changes (e.g., Outcome Questionnaire; Lambert et al., 2004). In fact, versions of these measures evidence clinical utility, in that when MHPs receive minimal feedback on outcomes from these measures (e.g., patient evidences deteriorations in therapeutic response relative to the previous week), this feedback results in MHPs having fewer patients who experience deteriorations in therapy, relative to MHPs who just receive session-by-session patient data without a feedback system in place (e.g., for reviews, see Lambert et al., 2003; Shimokawa, Lambert, & Smart, 2010). Much of this work focuses on assessing session-by-session changes in adult patients' functioning; therefore, much of the work involves patient feedback systems based on self-reported therapeutic responses. A multi-informant approach to such a feedback system may further boost the clinical utility of these instruments. For example, future research might examine whether multi-informant reports of session-by-session changes capture context-specific therapeutic change (e.g., deteriorations on parent report relative to teacher report reflecting that patients may be evidencing relatively poor response in terms of home-based functioning but not school-based functioning). If so, then future work might examine whether, relative to use of a single informant's report of session-by-session changes, a multi-informant approach to the session-by-session feedback system provides clinicians with not only feedback on a patient's deteriorations but also the specific contexts in which the patient displays these deteriorations. Might a multi-informant approach further boost the protective effect of session-by-session feedback on patient functioning? This question merits further study.

The Multi-Informant Approach and Idiographic Assessment

Third, much of our discussion of multi-informant approaches to assessment has focused on standardized assessments, in which item content, scaling, and response options are held constant across informants' reports (e.g., parent, teacher, and patient complete the same behavioral checklist to assess treatment response). This approach improves interpretability of multi-informant assessments because it helps to rule out methodological factors that could contribute to diverging findings among informants' reports (De Los Reyes, Thomas, et al., 2013). However, a key limitation of this approach is that informants (e.g., child patients and their parents) often diverge in their perspectives on problems to target in therapy (e.g., Hawley & Weisz, 2003), and these forms of diverging perspectives may go undetected by standardized assessments. To address this concern and augment traditional standardized multi-informant assessments, Weisz and colleagues (2011) developed an idiographic approach to evaluating parent and child perspectives on treatment needs.

Specifically, the Top Problems (TP) measure aims to provide a structured and psychometrically sound approach to identifying, from the perspectives of both child patients and their parents, the problems with which they are most concerned and that should be targeted in therapy. Administered following a structured diagnostic assessment (i.e., to focus parent and child on identifying salient concerns), the TP measure involves a clinician independently asking parent and child to, in their own words, identify the top three problems they wish to target in therapy. In addition, the clinician solicits numerical severity ratings for each of these problems (i.e., three ratings per informant, one for each identified problem). In this way, severity ratings for top problems could be monitored over the course of treatment. The TP measure (1) evidences strong test–retest reliability, (2) identifies clinical concerns that go undetected using standardized checklists (e.g., practice of identifying concerns based on scale scores that surpass clinical cutoff scores), (3) demonstrate convergent and divergent validity in relation to standardized instruments, and (4) show sensitivity to treatment response (Weisz et al., 2011, 2012).

An important finding with the TP measure is that, as with standardized measures, parents and children often identify different problems to target in the child's therapy (e.g., parent–child match on specific top problem below 30%; Weisz et al., 2011). Given this, an important question to address in future research is the utility of taking severity ratings from each informant for not only his or her own top problems, but the three top problems identified by the other informant (i.e., nonoverlapping problems across parent and child reports). If parent and child evidence relatively high correspondence in severity ratings for diverging problems (i.e., at the beginning of therapy), would this result in a therapist being more likely to engage both parent and child throughout therapy (e.g., both parent and child "on the same page" in terms of severity for most/all of the concerns addressed in therapy)? Could child severity ratings show sensitivity to treatment response for not only the child's own identified problems but also his or her severity ratings for problems identified by his or her parent, and vice versa? These questions merit further study.

CONCLUDING COMMENTS

In this chapter, we have presented a principled argument for taking a multi-informant, multimethod approach to assessing psychotherapeutic change (Figure 31.1). We also have described the OTM: a guiding framework for interpreting patterns of converging and diverging outcome findings that arise from this assessment approach (Figure 31.2). These principles and the OTM lay a foundation for a set of recommendations for constructing multi-informant, multimethod assessment batteries and interpreting outcomes from these batteries. Importantly, over 50 years of work on patterns of converging and diverging findings in children's mental health assessments have informed principles and practices described in this chapter (Achenbach et al., 1987; Casey & Berman, 1985; De Los Reyes et al., 2015; Weisz et al., 1987). Thus, practitioners and researchers should use these resources not only to select the measures used in outcome assessments but also to predict the patterns of converging and diverging findings that manifest from these assessments. Planning for using and interpreting patterns of outcome findings that arise from multi-informant, multimethod outcome batteries will allow practitioners and researchers to make maximal use of these data. In this way, assessments will provide useful evidence that informs improvements or refinements in evidence-based interventions.

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CHAPTER 32

Technology-Assisted Treatments for Mental Health Problems in Children and Adolescents

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Internalizing as well as externalizing mental disorders are highly prevalent in children and adolescents (Brauner & Stephens, 2006; Costello, Egger, & Angold, 2005; Merikangas et al., 2010), are associated with a considerable burden of disease for the children and adolescents themselves as well as their families, have a poor outcome at the longer term, and often persist into adulthood (Parker, 2003; Rao et al., 1995; Woodward & Fergusson, 2001). Several treatments have been developed for both internalizing and externalizing disorders, and a number of these have shown beneficial effects in outcome research (see chapters in this volume). Although the evidence-based treatments outperform usual clinical care on average, the mean effect of these treatments relative to usual care is not large, and there is room for improvement (Weisz et al., 2013). Furthermore, the majority of children and adolescents with mental disorders, who might benefit from these psychological treatments, do not receive them (Burns et al., 1995; Essau, 2005; Kataoka, Zhang, & Wells, 2002; Sawyer et al., 2001; Zachrisson, Rödje, & Mykletun, 2006).

Since the late 1990s and early 2000s, interventions have developed that are delivered through the Internet (Spek, Cuijpers, Nyklícek, Riper, Keyzer, & Pop, 2007). Most of these early technology-assisted interventions were aimed at adults, but recently, more and more interventions for children and adolescents have been developed and examined in randomized trials. Information and communication technologies are now developing rapidly and have entered the private and social lives of most children and adolescents at a level one could not have imagined 2 decades ago (Riper & Cuijpers, 2016). Currently, Internet and mobile interventions are perceived by many as one of the most promising strategies to overcome the challenges health care delivery systems are facing nowadays, including the treatment of mental health problems in children and adolescents (Emmelkamp et al., 2014). In this chapter we describe technology-assisted interventions, their advantages and disadvantages, and what is known about the effects from randomized trials.

OVERVIEW OF TECHNOLOGY-ASSISTED TREATMENTS

Forms of Technology-Assisted Treatment

"Technology-assisted" treatments may be defined as treatments that are delivered completely or in part through the use of new technologies, such as the Internet and PCs or laptops, smartphones, virtual reality applications, or secured videoconferencing among health professionals or between professionals and patients. eMental health entails the development, delivery, and study of interventions to individuals with mental disorders and behavioral health problems by means of digital media, especially the Internet (Christensen, Griffiths, & Jorm, 2004; Lal & Adair, 2014; Mohr et al., 2013; Riper & Cuijpers, 2016; Riper et al., 2010). Examples of these interventions are given in Table 32.1. We refer to the delivery of these interventions by making use of the concept of Internet interventions (Andersson & Cuijpers, 2009). Internet interventions encompass the total continuum of mental health care, ranging from screening and preventive interventions to treatment, relapse prevention, and maintenance treatments (Riper & Cuijpers, 2016).

Most research on technology-assisted interventions has focused on the treatment of common mental disorders (depression, anxiety, substance-use-related disorders) in adults (Andersson & Cuijpers, 2009). Nowadays, more research is focused on treatments of more complex disorders such as bipolar disorders (Holländare, Eriksson, Lovgren, Humble, & Boersma, 2015) or comorbid disorders such as diabetes and depression (Nobis et al., 2015; Van Bastelaar, Cuijpers, Pouwer, Riper, & Snoek, 2011). Another development is that more and more research is focusing on treatments of mental health problems in children and adolescents. In this chapter we provide an overview of this research.

Most interventions in eMental health can be considered guided self-help that is delivered through the Internet. "Guided self-help" is a psychological treatment in which the user works through a psychological treatment protocol more or less on his or her own (Cuijpers & Schuurmans, 2007). For children and adolescents it can also be the parent who works through these materials. The treatment protocol describes the steps users can take in order to apply a generally accepted psychological treatment to themselves. These materials can be written down in book form but also may be available through other media, such as a computer, CD-ROM, television, video, or the Internet. Contacts with a therapist or coach are not necessary for completing the therapy (Cuijpers & Kleiboer, 2016). If the protocol does entail contacts with a therapist or coach, these contacts are mostly supportive or facilitative in nature and are not aimed at developing a traditional relationship between therapist and patient. Instead, any contact is aimed at providing support and, if necessary, added explanation for working through the standardized psychological treatment (Cuijpers & Kleiboer, 2016).

Communication with therapists can be provided through personal contact, such as by telephone or e-mail. Internet interventions can be considered a specific type of guided self-help in which all materials are delivered through the Internet and all communication between client and therapist is conducted through the Internet. Most research has focused on Internet interventions and less on other forms of eMental health. There are also several Internet interventions in which no support by a coach or therapist is given, and the user has to work through the intervention completely on his or her own. Most of these unguided interventions have no or small effects (Cuijpers et al., 2011), and dropout can be very high.

Most Internet interventions are based on cognitive-behavioral interventions, mainly because they represent current, state-of-the-art treatments for most mental disorders in any age group and have been shown to be effective in large numbers of well-designed randomized studies and meta-analyses (Lal & Adair, 2014). A far more pragmatic reason for choosing cognitive-behavioral techniques in Internet interventions and guided self-help in general is the fact that these techniques tend to be very straightforward and can therefore be readily broken up into relatively easy steps, as opposed to most other common psychological interventions, such as psychodynamic or interpersonal therapies. There is no a priori reason, however, why other approaches cannot be used in self-directed interventions for depression. Recent studies have examined the effects of (Internet-based) self-directed interventions based on, for example, interpersonal psychotherapy (Donker et al., 2013), psychodynamic therapy (Andersson et al., 2012; Johansson et al., 2012), acceptance and commitment therapy (Lappalainen et al., 2014; Lin et al., 2015) and mindfulness-based approaches (Boettcher et al., 2014), and there is no evidence that these approaches are less effective than those based on cognitive-behavioral therapy (CBT). The evidence base for drawing conclusions on the comparative effects is very narrow, however.

Advantages and Disadvantages of Technology-Assisted Treatments

Technology-assisted treatments have several advantages. They may save therapist time, reduce waiting lists, allow patients to work at their own pace, eliminate the need to schedule appointments with a therapist, save travel time, reduce the stigma of going to a therapist, and aid the hard of hearing, as self-help treatments typically work more with visual than with auditory information (Emmelkamp et al., 2014). Furthermore, it may be possible to reach populations with mental disorders who are difficult to reach with more traditional forms of treatment, including older adults, children, and adolescents. This is important, because the majority of people with mental disorders do not receive any treatment at all due to the stigma of mental disorders, prejudices about therapists, lack of willingness to talk to strangers about personal problems, a desire to handle the problem on their own, or physical obstacles such as walking problems or bridging long distances (Andrade et al., 2014; Emmelkamp et al., 2014; Shealy, Davidson, Jones, Lopez, & de Arellano, 2015). Another advantage is that Internet interventions can quickly and automatically report progress and self-ratings, and they may also be programmed to enhance patients' motivation by presenting a wide range of attractive audiovisual choices, with voices giving instructions in whichever gender, age, accent, language, and perhaps game format the patient prefers (Emmelkamp et al., 2014). Another potential advance of technology-assisted treatments is that they can support the application of therapeutic strategies in daily life, for example, by using smartphone-based applications to monitor behaviors or teach social skills (Jones, Wainright, et al., 2015), and thereby go even beyond face-to-face psychotherapy.

TABLE 32.1. Overview of Technology-Assisted interventions for Internalizing, Externalizing, and Other Problems

Intervention	Content/approach	Form of tech	Effectiveness
	Internalizing interventions		
SPARX (Smart, Positive, Active, Realistic, X-factor thoughts; Fleming et al., 2012; Merry et al., 2012)	Computerized CBT intervention for adolescents, aimed at reducing symptoms of depression	Computerized intervention	SPARX users showed significant reductions of depressive symptoms, compared to waiting-list controls. And SPARX was not inferior to treatment as usual.
Camp-Cope-A-Lot (Khanna & Kendall, 2010)	Computer-assisted CBT for children up to 13 years of age, aimed at reducing anxiety symptoms (based on the evidence-based intervention Coping Cat)	Computerized intervention, with therapist guidance	Children receiving Camp-Cope-A-Lot showed significant improvement in anxiety symptoms and diagnoses, compared to controls. The improvement was equal to individual face-to-face CBT.
Blues-Blaster (Makarushka, 2011)	Web-based, interactive multimedia version of the adolescent Coping with Depression course, a CBT intervention for adolescents, aimed at reducing symptoms of depression	Internet-delivered intervention	Blues-Blaster adolescents reported significant decreases in depression levels and negative thoughts, and increases in behavioral activation, knowledge, self-efficacy, and school functioning, compared to the psychoeducation control condition.
BRAVE–Online for children (March et al., 2009; Spence et al., 2011)	Internet-based CBT intervention for children with anxiety disorders, based on the evidence-based BRAVE intervention, aimed at reducing anxiety symptoms and disorders	Internet-delivered intervention, with additional booster and parent sessions	Children in the BRAVE–Online group showed a significant reduction of anxiety symptoms and anxiety disorder, compared to waiting-list controls. No difference was found between BRAVE–Online and face-to-face CBT.
MoodGYM (O'Kearney et al., 2009; Sethi et al., 2010)	Internet-based CBT intervention for adolescents with depression of anxiety problems, aimed at developing coping skills and overcoming and preventing problems with depression and anxiety	Internet-delivered intervention	Both MoodGYM and face-to-face CBT significantly reduced depression and anxiety problems, compared to no-treatment controls. And combined treatment was superior to both stand-alone treatments. In adolescent girls, MoodGym significantly reduced depressive symptoms at follow-up.
Think, Feel, Do (TFD; Stallard et al., 2011)	Computerized CBT intervention for children and adolescents with depression or anxiety problems, aimed at reducing depressive and anxiety symptoms	Computerized intervention	Children and adolescents receiving TFD showed significant improvements in depressive symptoms, social anxiety symptoms, cognitive schemas, and self-esteem, compared to waiting-list controls.

The Journey (Stasiak et al., 2014)	Computerized, unguided CBT intervention for depressed adolescents, aimed at reducing depressive symptoms and improving coping	Computerized intervention	Adolescents receiving The Journey showed significant reduction of depressive symptoms and improvement of problem solving, compared to the placebo treatment group.
W-CBT (Storch et al., 2011)	Webcam-delivered, family-based CBT for children and adolescents with obsessive–compulsive disorder and their families, aimed at reducing OCD symptoms and remission, and improving global functioning	Webcam-delivered intervention	Children and adolescents receiving W-CBT showed significant large improvements in OCD symptoms, remission, and global functioning, compared to waiting-list controls.
Internet-based Guided Self-Help (Tillfors et al., 2011)	Web-based *Bibliotherapy Intervention* (book) for high school students suffering from social anxiety disorder, aimed at reducing anxiety and depression symptoms	Internet-delivered intervention	High school students showed significant improvements on social anxiety, general anxiety, and depressive symptoms, compared to waiting-list controls.
CoolTeens (Wuthrich et al., 2012)	Computerized CBT for adolescents with anxiety problems, aimed at improving anxiety management and reducing anxiety symptoms and diagnoses	Computerized intervention	Adolescents receiving the Cool Teens intervention showed significant modest reduction of anxiety disorder diagnosis, as well as any diagnosis, compared to waiting-list controls.
Master Your Mood (MYM; Van der Zanden et al., 2012)	Internet-based group CBT course for adolescents and young adults with depressive symptoms, aimed at reducing depressive and anxiety symptoms	Internet-delivered intervention	Adolescents and young adults receiving MYM showed significant reduction of depressive and anxiety symptoms, and improvement in perceived control compared to waiting-list controls.
Mobile Tracking Young People's Experiences (mobiletype) program (Kauer et al., 2012; Reid et al., 2011)	Mobile application to monitor mood, stress, and coping strategies of adolescents and young adults, aimed at improving emotional self-awareness (ESA) and reducing depressive symptoms	Mobile phone app	Adolescents and young adults using the MobileTYPE app showed significant improvement in ESA, which then led to a reduction of depressive symptoms, compared to waiting-list controls.
I-CBM (Sportel et al., 2013)	Internet-based cognitive bias modification (CBM) for adolescents with social or test anxiety, aimed at reducing symptoms of social or test anxiety	Internet-delivered intervention	Adolescents receiving I-CBM showed no greater improvement in social anxiety symptoms, compared to waiting-list controls. Over the long term they did improved significantly more on test anxiety symptoms, compared to school-based group CBT training and waiting-list controls.

(continued)

TABLE 32.1. *(continued)*

Intervention	Content/approach	Form of tech	Effectiveness
Mindlight (Schoneveld et al., 2016)	Video game providing neurofeedback, exposure training, and attention bias modification for children with elevated anxiety symptoms, aimed at improving coping strategies and reducing anxiety symptoms	Video game with neurofeedback	Children playing the Mindlight video game showed a significant reduction of anxiety symptoms, but this was not significantly different compared to placebo game controls.
CBT4CBT (Kendall & Khanna, 2008; Khanna & Kendall, 2010; Beidas et al., 2012)	Internet-based training program for therapists that provides the rationale for and guidance in using CBT to treat childhood anxiety	Internet-delivered training program	Therapists trained with CBT4CBT improved more than manual-trained therapists in CBT adherence, knowledge, and skills, and they improved equally as well as therapists receiving 1-day, face-to-face training.
Telemedicine trauma-focused CBT (TF-CBT; Shealy et al., 2015)	Evidence-based TF-CBT intervention to ameliorate depressive and anxiety symptoms in youth exposed to trauma, delivered via Telemedicine	Internet-delivered videoteleconferencing (Telemedicine)	This case study shows that Telemedicine TF-CBT was effective in reducing ADHD and posttraumatic stress symptoms, attention and social problems, and improving externalizing behavior such as aggression and conduct disordered behavior.
Virtual reality exposure therapy (VRET; Maldonaldo et al., 2009)	Virtual reality-delivered exposure therapy for children with school phobia, aimed at reducing school-related fears and improving school attendance	Virtual reality-delivered intervention	Children receiving the VRET showed a significant reduction in school-related fears and avoidance, compared to the waiting-list control group.
		Externalizing interventions	
Children's ADHD Telemental Health Treatment Study (CATTS; Myers et al., 2013, 2015)	The CATTS telehealth service delivery provided six sessions, consisting of pharmacotherapy and a session-specific module of psychoeducation based on the neurobiology of ADHD; also, a caregiver behavior training was delivered to the parents via teleconferencing	Video teleconferencing-delivered intervention (VTC)	The use of VTC increased therapists' adherence, and families showed a high utilization of services and completion of research assessments. VTC technology can be reliably used to provide and enhance care in underserved communities. And children receiving CATTS VTC improved significantly more than children receiving primary care.

Internet-based conferencing software for therapists (Epstein et al., 2011)	Pediatricians received training and access to an ADHD Internet portal that allowed parents, teachers, and pediatricians to input information about patients, which was then scored, interpreted, and formatted in a report style that was helpful for assessment and treatment of patients with ADHD; physicians evaluated their practice behaviors and addressed problem areas	Internet portal	Pediatricians in the intervention group, compared to controls, showed significantly higher rates of many American Academy of Pediatrics–recommended ADHD care practices, including collection of parent and teacher rating scales for assessment of ADHD, use of DSM-IV, criteria, and use of teacher rating scales to monitor treatment responses.
Internet-based parent-training program for children with conduct problems (Enebrink et al., 2012)	CBT-based online parent management training, aimed at changing negative interactions, coercive cycles and processes, including harsh and inconsistent parenting, between parent and child	Internet-delivered intervention	The intervention was effective in moderately reducing conduct problems in children and harsh and inconsistent discipline in parents, compared to waiting-list controls. And parents tended to use more positive praise and incentives compared to waiting-list controls.
	Interventions for other problems		
The My Body, My Life: Body Image Program for Adolescent Girls (Heinicke et al., 2007)	A CBT-based, six-lesson, Internet-delivered, targeted group intervention for body dissatisfaction and disordered eating in adolescent girls; psychoeducation and self-help activities were provided by trained therapists in a chatroom with four to eight girls; CBT techniques to enhance body image and eating concerns were taught, and mutual discussion was encouraged	Internet-delivered intervention	Both directly after treatment and at follow-up, girls reported improvements in body image/satisfaction and fewer eating concerns. Effect sizes were moderate to large, and at follow-up, girls reported means that were close to normative adolescent samples.
Web-based individual coping and alcohol-intervention program (web-ICAIP; Elgán et al., 2012)	Internet-delivered, therapist-assisted self-management intervention for adolescent children of parents with alcohol problems, aimed at strengthening adolescents' coping behavior, improving their mental health, and postponing the onset of or decreasing risky alcohol consumption	Internet-delivered intervention	RCT has not yet been published, only the study protocol. So no results are available.

(continued)

TABLE 32.1. *(continued)*

Intervention	Content/approach	Form of tech	Effectiveness
Web-based Triple-P Parenting intervention (Jones et al., 2014; Jones, Wainright, et al., 2015)	Web-based, self-help parenting intervention, based on Triple P principles adapted for parents with bipolar disorder and young children (ages 4–10 years), aimed at improving parenting skills and reducing child behavior problems	Internet-delivered intervention	Parents reported significant moderate improvements in parenting skills and a significant large reduction of child problem behavior, as compared to waiting-list controls.
Kopstoring (Woolderink et al., 2010)	Internet-delivered intervention for children of parents with mental and substance abuse problems (COPMI), aimed at strengthening their coping skills and preventing behavioral and psychological problems	Internet-delivered intervention	RCT has not yet been published, only the study protocol. So no results are available.
Remotely delivered intervention to manage chronic pain in children and adolescents (Fisher et al., 2015)	Systematic review on remotely delivered psychological interventions on the management of chronic pain in children and adolescents	Remotely delivered intervention (using the Internet, a computer program, smartphone apps, audiotapes, or telephone)	Remotely delivered psychological therapies (six studies) successfully reduced headache severity for at least 50% at posttest, compared to controls.
Teen Online Problem-Solving Intervention (TOPS; Wade et al., 2008)	Web-based, guided family problem-solving treatment program for adolescents with traumatic brain injury, aimed at enhancing family problem solving and adjustment, and reducing adolescent behavior and social problems	Internet-delivered intervention with videoconference sessions	Parents and adolescents reported significant improvements in adolescent internalizing problems and depressive symptoms, parental depression and parent–adolescent conflict. This was a very small pilot study ($n = 9$).
Cognitive Support Application (Mintz et al., 2012)	Mobile phone cognitive support application for youth and teachers to enhance the classroom social and life-functioning skills of youth (students) with autism spectrum disorders	Mobile phone intervention	Qualitative analyses indicate that the intervention is effective in helping students to reach their goals and maintain positive results, and to improve the quality of their learning experience.
Web-based dialectical behavior therapy for school refusal (DBT-SR; Chu et al., 2015)	Web-based DBT intervention for adolescents who refuse to go to school, because of mental health issues, and their parents, aimed at teaching emotion and behavior management skills, mindfulness, distress tolerance, and interaction skills	Internet-delivered intervention	The pilot study showed promising results in the efficacy and feasibility of the intervention, for both the adolescents and their parents, specifically improving routine, generalizability of skills acquisition, and a sense of support.

There are also dangers and disadvantages associated with the use of technology-assisted treatments. One problem when there is no direct contact with therapists is that appropriate diagnostic procedures may not be feasible (Van Ameringen, Mancini, Simpson, & Patterson, 2010). Another issue is that dropout from Internet-based interventions may be higher than that in face-to-face therapies (Van Ballegooijen et al., 2014), and this is especially true for unguided Internet interventions, in which dropout can be 80% or higher (Karyotaki et al., 2015). Another concern is that users may not apply the interventions appropriately. This might not only waste users' time and energy but also aggravate rather than ameliorate symptoms. Such side effects have not been well examined, although there is a consensus statement on defining and measuring negative effects of Internet interventions (Rozental et al., 2014). One meta-analysis of the individual data from 18 trials of Internet treatments of depression in adults found few indications that the interventions had negative effects (Ebert et al., 2015), but this cannot be generalized to other populations, such as the children and adolescent who are the focus of this chapter. One more negative aspect of Internet interventions is that there are still large groups of people who do not have access to the Internet, especially in low- and middle-income countries, but also, to some degree, in high-income countries.

One important problem with trials on Internet interventions is that only people participate who are willing to be randomized to an Internet intervention. This means that the outcomes of these trials cannot be readily generalized to other people. The same problem can arise for research on other treatments, such as face-to-face therapies or medication, but in those studies, there may be more information about participants and nonparticipants, enhancing prospects for estimating how representative the participants are of those targeted for the intervention. An additional challenge is that many Internet intervention trials are not conducted in clinical settings, so the results may not be generalized to clinical populations. However, recent studies show that Internet-based interventions for adults can result in clinical meaningful effects when delivered under routine care conditions (El Alaoui, Hedman, Kaldo, et al., 2015; El Alaoui, Hedman, Ljótsson, et al., 2015; Hedman et al., 2014; Williams, O'Moore, Mason, & Andrews, 2014).

EVIDENCE ON THE EFFECTS OF TECHNOLOGY-ASSISTED TREATMENTS

Treatments for Internalizing Disorders

Research on Internet interventions among children and adolescents started in the late 2000s. Many dozens of randomized trials have tested the effects of Internet interventions on mental health problems, but much less research has focused on children and adolescents. In the past few years, increasing numbers of trials and intervention studies have focused specifically on children and adolescents. Without pretending to give a comprehensive overview of all research, we attempt to summarize the most important developments in this field to give an idea of what types of research are being done at this moment and where this new field is heading. An overview of these interventions is given in Table 32.1.

Most research has focused on Internet interventions for depression and anxiety in children and adolescents. Two recent meta-analyses have summarized the effects of these interventions (Ebert et al., 2015; Ye et al., 2014). All 13 trials in the largest meta-analysis (Ebert et al., 2015) were conducted after 2009, indicating that this is a newly emerging field. Seven of these trials were aimed at anxiety, four at depression, and two at both (transdiagnostic interventions). Three trials were aimed at children, six at adolescents, and four at both. The effect sizes found for depression (Hedge's $g = 0.76$) and anxiety ($g = 0.68$) when Internet interventions are compared with care-as-usual and waiting-list groups, are moderate to large, and confirm that this is a promising new field. Results also indicated that Internet-based interventions for depression and anxiety can be effective both for adolescents and children, and that parents need not necessarily be involved in order to achieve meaningful effects in such programs. However, the quality of most included studies was low, so the results should be considered with caution.

The use of Internet-based video conferencing or telemedicine CBT interventions has shown promising results in communicating with and treating adolescents with mental health problems, in case studies on adolescents with trauma (Shealy et al., 2015) and depression (Nelson & Duncan, 2015). However, most research on telemedicine interventions focused on adults and no randomized controlled trials have yet been conducted on telemedicine for children and adolescents. Thus, the efficacy and cost-effectiveness of using this technology in the treatment of children and adolescents remains unclear (Nelson & Duncan, 2015; Shealy et al., 2015).

In addition, technology is being implemented more regularly in training clinicians to apply certain therapeutic techniques or to improve their knowledge of evidence-based treatment (Khanna & Kendall, 2015). For example, computer-based training for cognitive-behavioral therapy (CBT4CBT) is an Internet-based training program that has been shown to enhance therapists' CBT skills, adherence, and knowledge in treating youth with anxiety disorders (Kendall & Khanna, 2008; Beidas, Edmunds, Marcus, & Kendall, 2012).

Cognitive bias modification (CBM) is one of the newer types of psychological interventions for depression and anxiety that can be administered through the Internet. CBM, a computer-based therapy, works by gradually changing attentional biases. An "attentional bias" is the tendency for perceptions to be affected by the recurring thoughts of an individual. For example a depressed individual is likely to pay more attention to negative events. In CBM, he or she learns to shift attention away from negative events. CBM has been examined not only in adults (Cristea, Kok, & Cuijpers, 2015) but also in children and adolescents (Sportel, de Hullu, de Jong, & Nauta, 2013). Unfortunately, the quality of the trials in this field of research is low, and these interventions only have small effects on depression and anxiety compared with no intervention.

An interesting development in this field is that attempts are being made to move these interventions away from the traditional computerized interventions to smartphones. This will make these interventions much more attractive and easy for young people to use. In one study, mood, stress, and daily activities of people ages 14–24 with mental health concerns were monitored through the smartphone. Investigators found some support that this enhanced emotional self-awareness was associated with decreased depressive symptoms compared with an attention control group, in which participants monitored their current activities, location, companions, quality and quantity of sleep, quantity and type of exercise, and diet (Kauer et al., 2012). In addition, smartphones can be used to support evidence-based treatment by monitoring behavior and mood, recording therapeutic situations (e.g., taking photographs or filming at site), and facilitating exposure (Peterman, Read, Wei, & Kendall, 2015).

Virtual reality is an innovative technology that has been implemented to improve existing CBT interventions for childhood and adolescent anxiety. In one study, virtual reality exposure showed positive effects on children and adolescents with fear of flying (Chu et al., 2004). Clients even reported that they enjoyed the control they had over the type and degree of the exposure exercises, and parents appreciated that their children could gradually practice facing their fears. Another study on a brief virtual reality exposure therapy (VRET) for children with school phobia showed a significant reduction of school-related fears in the intervention group, compared to the waiting-list control group (Maldonado, Magallón-Neri, Rus-Calafell, & Peñaloza-Salazar, 2009). In addition, the intervention group showed decreased avoidance of school-related stimuli provoking negative affectivity, and less escape from aversive social situations.

Another promising development in the field is the use of serious games for the treatment of common mental health disorders in children and adolescents. “Serious games” are games with a purpose other than entertainment, in this case, the delivery of a psychological treatment using game principles. Below is a more detailed description of such a program called SPARX, an example of a serious game for the treatment of depression.

SPARX (Merry et al., 2012) is an interactive fantasy game designed to deliver CBT for the treatment of adolescents seeking help for depression. It utilizes both first-person instruction and a three-dimensional interactive game in which the young person chooses an avatar and undertakes a series of challenges to restore the balance in a fantasy world dominated by GNATs (Gloomy Negative Automatic Thoughts). The game consists of seven levels (treatment modules), each lasting 30–40 minutes. Users are advised to complete one or two levels in the game each week, during 3–7 weeks. At the beginning and end of each module, the user interacts in the first person with a “guide,” who puts the game into context, provides education, gauges mood, and sets and monitors real-life challenges, equivalent to homework. The program also monitors the symptom course, and participants who are not improving are prompted to seek help from their referring clinicians. In addition to the online modules, the program is supplemented by a paper notebook with summaries of each module and spaces to add comments about the challenges completed.

In a randomized controlled noninferiority trial comparing SPARX to treatment as usual (psychological counseling) in the treatment of depression in adolescents, it was shown that the treatment format was feasible and accepted by the target group. In addition, adolescents assigned to the game performed on most outcomes as well as those assigned to treatment as usual (comprising primarily face-to-face counseling delivered by trained counselors and clinical psychologists) and achieved even better remission rates (Merry et al., 2012). In another randomized controlled trial in adolescents between ages 13 and 16 years excluded from mainstream education, it was shown that the SPARX group, compared to a waiting-list control condition, was superior with regard to the reduction of depressive symptoms and remission, but not on other self-rating psychological functioning scales.

Treatments for Externalizing Disorders

Although most research has been conducted on technology-assisted treatments for internalizing disorders, a growing number of trials are focusing on externalizing disorders. A few studies have focused on attention-deficit/hyperactivity disorder (ADHD). For example, the Children's ADHD Telemental Health Treatment Study (CATTS) is a randomized clinical trial of telemental health that was conducted in seven underserved communities (Myers, Vander Stoep, & Lobdell, 2013). In this trial, mental health treatment was delivered through video teleconferencing to children. Psychiatrists were trained to deliver individual pharmacological care for ADHD through videoconferencing, as well as psychoeducation. In addition to that, caregivers received training through individual videoconferencing on understanding ADHD and behavioral principles. It was found that this intervention was acceptable and feasible, and that children assigned to CATTS improved significantly more than children in the primary care arm (where their primary care providers also received consultation from a psychiatrist; Myers, Vander Stoep, Zhou, McCarty, & Katon, 2015).

A cluster-randomized trial was aimed at improving pediatricians' adherence to evidence-based ADHD assessment and treatment guidelines, as stated by the American Academy of Pediatrics (Epstein et al., 2011). Pediatricians received four training sessions, then got access to an Internet portal where parents, teachers, and pediatricians could give information about patients (including rating scales). The trial compared patients with ADHD from the pediatricians who were randomized to the intervention with the pediatricians in the control group, who did not have access to the Internet portal, and found that those in the intervention group adhered much better to the treatment guidelines (Epstein et al., 2011).

Another trial examined the effects of an Internet-based parent-training program for children with conduct problems (Enebrink, Högström, Forster, & Ghaderi, 2012). Compared to a waiting list, moderate effects were found on reduction of conduct problems in the children, as well as a reduction of harsh and inconsistent discipline by parents.

Treatments for Other Conditions

Apart from programs and research that focus directly on internalizing or externalizing problems in children and adolescents, several other interventions are being developed. Some of these focus on more specific mental health problems.

An early study (Heinicke, Paxton, McLean, & Wertheim, 2007) examined the effects of a targeted Internet-based intervention aimed at body image and eating problems in adolescent girls. The program was delivered in six weekly, small-group meetings on the Internet. Therapists taught CBT techniques by using psychoeducation and by providing self-help activities in a closed and secured chatroom with four to eight girls. Compared to delayed treatment, this trial found reductions in body dissatisfaction, as well as disordered eating, at postintervention, and effects were maintained at follow-up.

Several Web-based interventions have focused on children of parents with mental health problems, such as parents with bipolar disorder (Jones et al., 2014; Jones, Anton, et al., 2015). Furthermore, several trials have focused on the effects of Internet-based interventions to support children and adolescents with physical health problems. A recent Cochrane Review identified eight trials that focused on remotely delivered psychological therapies for chronic and recurrent pain in children and adolescents (Fisher, Law, Palermo, & Eccleston, 2015). Interventions were mainly targeted at managing children and adolescents' moods, using CBT or behavior therapy principles. Most of these trials focused on children with headaches, but there were also studies aimed at more mixed, chronic pain conditions. The most convincing effects were found for headache severity (the chance of a positive outcome was 2.65 times higher in participants in the intervention group compared to the control group), although no effects were found for reducing pain at follow-up in either analysis, and larger trials are needed in this field.

Mobile-phone applications have been designed to assist youth with autism spectrum disorder in enhancing their social and life skills in general, and more specifically in improving their learning experience and goal-directed behavior in school (Mintz, Branch, March, & Lerman, 2012). Initial qualitative results showed that the application, which is used by both the students and teachers, was successful in improving the students' school- and social functioning.

Technology is also used to enhance existing evidence-based treatment for mental health problems. For example, a pilot study on a Web-based version of an evidence-based dialectical behavior therapy intervention to address school refusal due to mental health problems found promising results. The findings showed improvements in family routine, applying regulatory skills in diverse settings and inducing a sense of support in both adolescents and their parents (Chu, Rizvi, Zendegui, & Bonavitacola, 2015).

A final example we mention here is the small pilot trial of a Web-based treatment program to improve adolescent and family psychosocial functioning following traumatic brain injury (Wade, Walz, Carey, & Williams, 2008), for which encouraging results were found.

FUTURE DIRECTIONS

In addition to the trials that have been conducted, several other important trials are currently under way, in internalizing, externalizing and other problem areas. In one study aimed at prevention of depression, key messages based on CBT were sent twice per day for 9 weeks to mobile phones of adolescents (e.g., "You can take control of this;" "It's not what happens; it's what you think about it that affects feelings"). Adolescents receiving this intervention reported that they found these messages to be helpful and that they were able to be more positive, to be nice to others, to be relaxed, to get rid of negative thoughts, to solve problems, and deal better with school issues compared to adolescents in an attention control group. Unfortunately, the outcomes on depression have not yet been reported (Whittaker et al., 2012). Several other trials are currently being conducted to examine whether Internet interventions can be used to prevent depression and anxiety (Calear, Christensen, Griffiths, & Mackinnon, 2013; Teesson et al., 2014), but the outcomes are not available yet.

The Strongest Families Finland–Canada (SFFC) Smart Website intervention is aimed at delivering an affordable, accessible, effective, secondary prevention parent training program for disruptive behavior in preschoolers to prevent the negative sequelae of oppositional defiant disorder (McGrath et al., 2013). It is an online, 11-session program that focuses in part on teaching skills to strengthen parent–child relationships, reinforce positive behavior, reduce conflict, manage daily transitions, and promote emotion regulation. A randomized trial examining the effects of this program is currently going on (McGrath et al., 2013).

Another currently running trial focuses on Internet-based CBT aimed at reducing suicidality among suicidal high school students (Robinson et al., 2014). The trial focuses on high school students who have sought help from school counselors.

In the field of general medical disorders, one study is currently examining the "Breathe Easier Online" intervention aimed at improving well-being in children and adolescents with a chronic respiratory condition (Newcombe et al., 2012). The "Recapture Life" intervention is aimed at supporting adolescents and young adults after cancer treatment and is currently being examined in a multicenter randomized controlled trial (Sansom-Daly et al., 2012).

CONCLUDING COMMENTS

We have seen that in the past few years a growing number of technology-supported interventions have been developed for mental health problems in children and adolescents, including both internalizing and externalizing problems, mental health problems in children of parents with a mental disorder, and several other specific target groups. However, compared with the field of technology-assisted interventions in adults, this field is small and just starting up. The first results are encouraging and suggest that technology may increase uptake and efficiency of mental health care in children and adolescents, but there is also still quite a lot of work that has to be done.

In adults there is considerable evidence that Internet interventions with some human support can be as effective as face-to-face therapies (Andersson, Cuijpers, Carlbring, Riper, & Hedman, 2014). In children and adolescents this evidence is not that strong yet. Furthermore, most interventions have been developed and tested in academic settings, and it is not clear whether these findings can be generalized to routine mental health care. Although there are some technology-supported preventive interventions, this field has not yet been fully explored. Prevention seems to be an intervention area in which technology may be useful and add value to current practice and research. It is also important to integrate technology into current routine care, in order to foster the implementation of learned techniques in daily life and thereby increase the effectiveness of psychotherapy.

Although the field of technology-supported interventions for mental health problems in children and adolescents has only recently begun, it is clear that it has many possibilities to improve access and efficiency of prevention and treatment, and may even improve the effects of current treatments. Although it cannot be predicted how this field will look in 5 or 10 years, it seems likely that technology-supported interventions will have a major impact.

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PART V

CONCLUSIONS AND FUTURE DIRECTIONS

CHAPTER 33

The Present and Future of Evidence-Based Psychotherapies for Children and Adolescents

John R. Weisz and Alan E. Kazdin

This book is about leveraging science to make life better for children and adolescents, and the adults who care for them. Efforts to help young people overcome emotional and behavioral difficulties are almost certainly as old as parenthood, but *professional* help is a much more recent development. Early in the 20th century, a collection of formal professional strategies took shape that has come to be called *psychotherapy*. We traced some of the historical evolution—ancient to recent—in Chapter 1, and we noted the many decades required for psychotherapy with young people to become a subject of scientific study. Today, however, it is increasingly common to use scientific methods to evaluate and improve therapies. Indeed, the term "evidence-based" is considered by many to be a badge of honor for therapies. The chapters in this volume give substance to that term, as it applies to interventions for young people.

THE PRESENT STATUS OF EVIDENCE-BASED PSYCHOTHERAPIES FOR CHILDREN AND ADOLESCENTS

The study of evidence-based psychotherapies for children and adolescents is now a fast-moving target, and the pace of research is ballistic—indexed by development of new treatment approaches and acceleration of published evidence. This is reflected in diverse ways in this volume, including the expanded scope and breadth of chapter coverage relative to our first and second editions (Kazdin & Weisz, 2003; Weisz & Kazdin, 2010). With recent developments in the academic disciplines that touch on mental health—for example, the neuroscience revolution and the explosion of technology—corresponding changes can be seen in mental health interventions. Our chapters track some of the most exciting of these changes. Taken together, the chapters reflect an impressive blend of intelligence, creativity, and sheer hard work by talented clinical scientists pursuing treatments that work. In this volume, these scientists have summarized their work on a variety of specific intervention programs, highlighted critical ethical and legal issues, spelled out the need for a solid developmental foundation, probed what is known about ethnic and cultural variations in relation to treatment outcome, presented strategies for personalizing evidence-based therapy, addressed the potential of technology to spread effective interventions, explained how clinical neuroscience can enrich intervention science, and described successes and challenges in efforts to implement tested interventions across states and entire nations.

Taken together, the chapters paint a vivid picture of the state of the field. The chapters nicely complement what we know about general trends from broad-based reviews and meta-analyses of published trials (e.g., Kazdin, Bass, Ayers, & Rodgers, 1990; Weisz, 2004; Weisz et al., in press). The meta-analyses, now spanning research across 5 decades, have shown rather consistent beneficial effects of the kinds of interventions described in this volume. The effects are relatively durable and robust, not significantly different at immediate posttreatment than at follow-up assessments averaging 11 months later, and not significantly different across racial/ethnic groups (Weisz et al., in press). But meta-analyses have also revealed nuances that can inform future developments. For example, intervention effects are especially strong for anxiety- and conduct-related problems, but markedly weaker for youth depression and attention-deficit/hyperactivity disorder (ADHD)-related difficulties (Weisz et al., in press), highlighting a need for further treatment development and testing in these challenging domains. The chapters in this book take us beyond such generalizations, describing specific treatments that produce the effects, summarizing the evidence, noting strengths and limitations, and highlighting new frontiers into which the research is now pushing.

FUTURE DIRECTIONS

The chapters convey some of the specific challenges that need to be confronted in the next era of research. Some of these reflect findings that reveal limitations in current treatments; others reflect questions generated by new directions in clinical science, psychology, psychiatry, and neuroscience. We discuss these challenges in the following sections and summarize them in Table 33.1.

Coverage of Conditions and Types of Dysfunction

The accounts presented in these chapters tell us a good deal about the breadth of coverage of youth problems and dysfunction in current treatment research. Tested treatments have now been developed to address multiple internalizing conditions within the anxiety and obsessive–compulsive cluster (in this volume, see Franklin, Morris, Freeman, & March, Chapter 3; and Kendall, Crawford, Kagan, Furr, &

TABLE 33.1. Challenges for the Future in Evidence-Based Psychotherapy

1. Expand coverage to forms of dysfunction that lack evidence-based psychotherapies, and address boundary conditions (e.g., age constraints) that limit the range of therapies.
2. Build evidence-based psychotherapies that are more fully informed by developmental science.
3. Broaden the array of theoretical models tested, encompassing more of the treatment models widely used in practice.
4. Build an array of treatment packaging and delivery models to address the challenges of comorbidity, heterogeneity within conditions, and shifting needs during episodes of care.
5. Extend scope, duration, and density of outcome assessment to increase the information value of findings across informants and to permit fair comparisons to usual care.
6. Build and strengthen research on how therapist behavior and the therapeutic relationship relate to youth and family treatment engagement, completion, and outcome.
7. Delineate the effective range of evidence-based psychotherapies in regard to youth and family clinical and demographic characteristics.
8. Use dismantling, microtrials, and related designs to identify necessary and sufficient conditions for treatment benefit.
9. Use multiple strategies (mediation analysis and much more) to identify mechanisms of change that explain why evidence-based psychotherapies work.
10. Leverage the methods and findings of neuroscience to strengthen therapy research and ultimately make therapies better targeted, more efficient, and more effective.
11. Develop and test evidence-based psychotherapies under clinical practice conditions to foster robust treatment design and garner evidence on effectiveness in clinical care.
12. Build and test strategies for adapting treatments to new contexts, making them robust across institutional, linguistic, regional, and cultural boundaries.

Podell, Chapter 2), including posttraumatic stress disorder (PTSD) following maltreatment and other forms of trauma (Cohen, Mannarino, & Deblinger, Chapter 15, this volume); depressive disorders (in this volume, see Jacobson, Mufson, & Young, Chapter 5; Rohde, Chapter 4); multiple externalizing conditions ranging from chronic disobedience and aggression to disruptive behavior disorders and criminal behavior (in this volume, see Buchanan, Chamberlain, & Smith, Chapter 11; Forgatch & Gewirtz, Chapter 6; Henggeler & Schaeffer, Chapter 12; Kazdin, Chapter 9; Powell, Lochman, Boxmeyer, Barry, & Pardini, Chapter 10; Sanders & Turner, Chapter 25; Webster-Stratton & Reid, Chapter 8; and Zisser-Nathenson, Herschell, & Eyberg, Chapter 7) and ADHD (Pelham, Gnagy, Greiner, Fabiano, Waschbusch, & Coles, Chapter 13, this volume); autism and related disorders along the spectrum (in this volume, see Davlantis, Dawson, & Rogers, Chapter 16; and Koegel, Koegel, Vernon & Brookman-Frazee, Chapter 17); habit problems such as enuresis and encopresis (Mellon & Houts, Chapter 19, this volume); eating disorders (LeGrange & Robin, Chapter 18, this volume); substance abuse (Waldron, Brody, & Hops, Chapter 20, this volume); and suicidal and nonsuicidal self-injury (Spirito, Esposito-Smythers, & Wolff, Chapter 14, this volume) . Indeed, the problems and disorders for which evidence-based psychotherapies now exist encompass most of the concerns that bring children and adolescents into clinical care.

That said, many mental health problems and disorders of childhood and adolescence lack strong evidence-based psychotherapies, and some of our field's success stories carry caveats and boundary conditions. As examples, psychosocial treatment success with ADHD has been largely limited to preadolescents, some of the most beneficial parent training programs for conduct problems and disorder may not travel so well up the developmental ramp into adolescence, and cognitive-behavioral therapy (CBT) for depression may not often outperform usual care that includes antidepressant medication. More broadly, youth psychotherapies that appear quite successful in efficacy trials may show markedly diminished effects when tested in more clinically representative conditions and compared to usual clinical care (Weisz, Jensen-Doss, & Hawley, 2006, Weisz, Kuppens, et al., 2013). So, while evidence-based psychotherapies exist for many conditions that propel youths into treatment, there are treatment orphans, and some successful treatments carry caveats that pose empirical challenges for the future.

Connection between Intervention Science and Developmental Science

One strategy for broadening the array of treatments and the developmental range within which treatments have impact might be to draw more heavily from developmental science. As Cicchetti and Toth (Chapter 28, this volume) emphasize, the principles and findings of developmental psychology, and developmental psychopathology, provide a strong conceptual scaffolding for treatment development and design. Research on cognitive, social, personality, and neuropsychological development, and child–caregiver interactions from infancy through adolescence, have the potential to undergird and inform the creation of treatments for a broad range of dysfunction. Despite what seem to be excellent prospects for developmentally informed intervention, developmental science and clinical science have not been closely linked, and few treatments appear to have been prompted or much informed by developmental theory or findings.

Instead, treatments for juvenile internalizing conditions appear to be primarily downward extensions of interventions originally developed for adults. Most treatments for juvenile externalizing conditions and habit-related problems (e.g., enuresis and substance abuse) appear to have drawn most heavily from behavioral theory and research, and to some extent cognitive and family systems theory, not developmental science. One could argue that this is not a problem. After all, evidence indicates that the treatments described in this volume generate positive effects, on average. However, the evidence also shows that a substantial percentage of youngsters receiving these treatments apparently do not benefit.

A key question for our field is whether youth treatment fit and benefit might be enhanced if interventions were built on a more substantial understanding of the characteristics and capacities of children at different developmental periods and the developmental trajectories that create opportunities for change. As one of many examples, it is possible that the CBT technique of having children identify and critique their own cognitions (e.g., cognitions associated with depression, with anxiety, or with interpersonal aggression) might work well for youngsters who have achieved the developmental capacity to observe and reflect on their own thinking but not so well in youngsters who have not. In this and other respects there appear to be multiple logically appealing connections between developmental and clinical science. To date, unfortunately, those seemingly logical connections have not been investigated and exploited very fully in ways that dramatically alter the nature or use of interventions. The developmental perspective advanced by Cicchetti and Toth (Chapter 28, this volume; see also Cicchetti & Natsuaki, 2014) may help change this state of affairs.

Coverage of Theoretical Perspectives on Youth Treatment

The evidence-based psychotherapies encompass several of the influential theoretical perspectives that have guided youth treatment historically, but certainly not all the relevant theories. Behavioral (operant, classical, and modeling) approaches are common among the tested treatments, as are cognitive-behavioral applications; and family systems perspectives are evident in some treatments (e.g., Le Grange & Robin, Chapter 18, this volume). But numerous other schools of therapy (e.g., psychodynamic, client-centered, humanistic) are largely missing from the roster. A similar pattern is evident in meta-analyses of published treatment outcome research (e.g., Kazdin et al., 1990; Weisz, Weiss, Han, Granger, & Morton, 1995; Weisz et al., in press), with the great majority of the studies in those meta-analyses testing behavioral and cognitive-behavioral treatments.

A problem with this state of affairs is that many of the nonbehavioral treatment models that are common in everyday clinical practice are rarely found in the child and adolescent research literature (see, e.g., Kazdin et al., 1990; Weisz et al., in press). We have a strong and rapidly expanding evidence base on treatments that are not so widely used in practice, and we have a weak and barely growing evidence base on the approaches that are especially common in practice, some of which might prove to be effective if properly tested (Kazdin, 2015; Weisz, Kuppens, et al., 2013). Indeed, in a meta-analysis of randomized trials comparing certified evidence-based youth psychotherapies to usual clinical care (Weisz et al., 2013), 29% of the studies showed either negligible differences (effect sizes < 0.10) or superior effects for usual care, suggesting that we may have something to learn from everyday clinical practice. The treatment approaches that service providers use and trust clearly warrant more attention in clinical trials than they have received to date. The disparity between the scope of evidence and the scope of practice is illustrated by Kazdin's (2000) count identifying more than 550 named therapies that are used with children and adolescents, only a tiny percentage of which have been subjected to any empirical test. The field could profit from research that broadens the array of empirically tested treatment models. Researchers willing to take on this challenge will find no shortage of candidate models.

Intervention Packaging and Delivery Models and Strategies

The intervention programs described in this volume convey a broad and ever-broadening array of models for providing treatment content to the youth and family. To be sure, the most common model follows the tradition of weekly office visits with a therapist. However, Kazdin and Blase (2011) have argued that this traditional model is not likely to meet the massive need of the population for effective mental health care, and that a variety of delivery models will be needed. Several of our chapters illustrate steps in this direction, including:

- Embedding core principles and skill illustrations within videotaped vignettes for parents (in this volume, Sanders & Turner, Chapter 25; Webster-Stratton & Reid, Chapter 8).
- Using therapists as coaches, guiding parents as they interact with their children in real time (in this volume, Kazdin, Chapter 9; Zisser-Nathenson et al., Chapter 7).
- Treating enuresis using home-based behavioral training with a urine alarm, and encopresis with an innovative game board protocol (Mellon & Houts, Chapter 19, this volume).
- Building ADHD intervention into summer day camp programming (e.g., Pelham et al., Chapter 13, this volume).
- Adapting a depression coping skills intervention to the needs of incarcerated youths and youths with substance use disorders (Rohde, Chapter 4, this volume).
- Therapy in motion, using a peripatetic-therapist-in-the-youth's-environment model (Henggeler & Schaeffer, Chapter 12, this volume).
- Guiding child welfare program youths by teaching behavioral skills to foster care providers (Buchanan, Chamberlain, & Smith, Chapter 11, this volume).
- Teaching parents and others in the child's environment to use pivotal response training (Koegel et al., Chapter 17, this volume) building on what children on the autism spectrum find naturally reinforcing.
- Using a naturalistic developmental approach to address early autism and autism risk, and tracking changes in the brain that are associated with this treatment (Davlantis et al., Chapter 16,, this volume).
- Teaching behavioral skills to parents via highly readable books with DVD guidance included (e.g., Pincus, 2012; Kazdin, Chapter 9, this volume; Kazdin & Rotella, 2008), and via parent-friendly articles on specific ways to help children change their behavior (see, e.g., *www.slate.com/authors.alan_kazdin.html*).
- Accelerating population outreach by delivering training and intervention through the Internet and related technology (in this volume, Cuijpers, Ebert, Reijnders, & Stikkelbroek, Chapter 32; Kendall et al., Chapter 2; Merry, Stasiak, Dunnachie, Anstiss, Lucassen, & Cargo, Chapter 23).
- Using individualized metrics, frequent monitoring of treatment response, customized and customizable treatments, and other approaches to personalize the delivery of otherwise standardized evidence-based treatments (Ng & Weisz, Chapter 29, this volume).

While the current array of treatment packaging and delivery strategies is impressive, it seems clear that continued creativity will be needed to address the massive need in the global youth population, and the variety of ways youth dysfunction presents in relation to treatment (see Kazdin, 2000; Weisz, 2004; Weisz, Krumholz, Santucci, Thomassin, & Ng, 2015). The episodic, recurrent nature of many youth conditions may call for models that encompass regular periodic monitoring of the child's status, or "checkups," with treatment resumed as needed. The likelihood that not all youths diagnosed with the same disorder will manifest all symptoms of that disorder, or need all the same treatment elements, suggests the potential value of modular treatment strategies that optimize individual tailoring of intervention. As an example, some youths treated for depression do not manifest marked cognitive distortion, and others seem to have strong social skills; for such youths, a treatment program in which cognitive and social skills training are optional modules could make for enhanced efficiency.

As a third illustration of how our treatment delivery models may need to be stretched, we note that most evidence-based psychotherapies are focused on a single condition or homogeneous cluster of them. By contrast, most treated children do not present with only one problem or diagnosis, or even one at a time (Angold, Costello, & Erkanli, 1999; Copeland, Shanahan, Erkanli, Costello, & Angold, 2013; Jensen & Weisz, 2002), and even conditions that may seem quite different superficially, such as depression and conduct disorder, often co-occur. The fact that different problems and diagnoses coincide so regularly suggests that we may need models for blending and combining elements of some rather distinct treatments (see, e.g., Chorpita & Weisz, 2009; Weisz et al., 2012).

Scope, Sources, Duration, and Density of Assessment in Treatment Research

As De Los Reyes, Augenstein, and Aldao (Chapter 31, this volume) have noted, assessment produces "the evidence" in *evidence-based treatment.* The body of work surveyed in this volume illustrates how assessment has expanded in scope, intensity, and rigor in treatment research over the years. In the best research, child dysfunction is now assessed from multiple perspectives, often including youth, parent, and teacher reports, and ideally including direct observation of the treated youth's behavior. Formal diagnostic assessment is often included now, in part to assess the clinical significance of treatment-related change. Increasingly, such measures of problems, symptoms, and diagnoses, are complemented by assessments of real-world functioning—grades and school behavior reports, for example, and arrests, where relevant. Beyond the treated youth, assessments focus increasingly on dispersion of treatment benefit—for example, increases in parents' child management skills, parenting confidence, parental stress and mental health, and even changes in marital satisfaction associated with changes in child behavior.

As the scope of assessment expands, so does the challenge of how to evaluate the input of multiple informants. Youths, parents, and teachers, for example, may all report their perspectives on the same young person's behavior, emotions, and mental health. Most experts agree that there is no "gold standard" in such assessment, and that multiple perspectives add value. However, informants are likely to differ from one another in their opportunities to observe the youth, in their interpretations of what they observe, and therefore in what they report on various assessment instruments. What are we to do with the conflicting reports that can arise given these informant differences? De Los Reyes et al. (Chapter 31, this volume) propose an *operations triad model,* intended to guide the use and interpretation of multi-informant, multimethod clinical assessments. In this model, converging and diverging findings across informants and methods become grist for the researcher's mill, and potentially for the clinician as well. Within this model, differences across informants may reflect a certain amount of measurement error, but they can also be used to clarify the clinical picture of the individual in various contexts (see De Los Reyes, 2011).

The increasing breadth and intensity of outcome assessment is a positive feature, and the work of De Los Reyes and colleagues can help us capitalize on it. We would add that there is room for expansion in the *duration* of outcome assessment as well. In a recent meta-analyses spanning 5 decades of youth therapy research (Weisz et al., in press), fewer than one-third of the studies included any assessment other than immediate posttreatment; and for that one-third, the mean follow-up lag time was 10–11 months after the end of treatment. So, we know relatively little about the long-term holding power of effects generated by most treatments, and therefore little about whether or when there may be a need for treatment supplements, booster sessions, and the like, to maintain gains.

Measurement density also needs attention in future work. In some areas of treatment research—depression, for example—there is increasing interest in the impact of treatment on the *pace of recovery*. Regardless of whether outcomes at the end of treatment show a target treatment to be superior to a control or to comparison condition, it may be important to know whether the target treatment accelerated relief and symptom reduction. Reducing symptoms and suffering is valuable in its own right, but efficiency is a concern of many who pay the costs of mental health care, and frequent assessment is required to gauge efficiency. Another reason to move toward denser schedules of assessment is the increasing emphasis on comparisons between structured, protocol-guided treatments and usual clinical care (see Weisz et al., 2015). In such comparisons, the duration of usual care cannot be controlled (otherwise, the care is not "usual"); thus, it is not possible to match the protocol-guided treatment and usual care on treatment length or dose. With frequent (e.g., weekly or monthly) routine assessment on outcome measures of interest, slopes of change can be monitored and compared across treatment conditions in ways that do not require artificially limiting the duration of usual care.

Treatment Benefit as a Function of Therapist Behavior and the Therapeutic Relationship

The treatment outcome research literature is particularly strong in describing intervention procedures, but weak in helping therapists build a warm, empathic relationship and a strong working alliance with the children and families who receive the interventions. This gap is striking in light of the widespread belief that quality of the therapeutic relationship or alliance is critical to treatment success. In some research, child and adolescent therapists have rated the therapeutic relationship as more important than the specific techniques used in treatment (Motta & Lynch, 1990), and some treated children may agree. Kendall and Southam-Gerow (1996), for example, found that children treated for anxiety disorders using the Coping Cat program rated their relationship with the therapist as the most important aspect of treatment. We should be cautious here; clients may like their therapist and the relationship, even in the absence of therapeutic change.

Clinical scientists are now building a body of evidence aimed at (1) defining what a positive therapeutic relationship is, (2) establishing how best to measure it, (3) identifying therapist characteristics and behaviors that foster it, and (4) testing the extent to which such a relationship actually predicts outcome when evidence-based psychotherapies are used. In the treatment of children, both child–therapist and parent–therapist alliances may need to be understood; in fact, the two may show different patterns of association with treatment attendance, engagement, and outcome (see, e.g., Hawley & Weisz, 2005). Progress is now being made in assessing and understanding the roles of child and parent alliances, using youth- and parent-report assessment of therapeutic alliance (e.g., Kazdin, Whitley, & Marciano, 2006), as well as an observational approach based on coding of actual therapy sessions for child and parent alliances with the therapist (McLeod & Weisz, 2005). Kazdin et al. (2006), for example, found that both child–therapist and parent–therapist alliances predicted therapeutic gains in children treated with evidence-based interventions for externalizing problems (and parent–therapist alliance predicted improved parenting practices); McLeod and Weisz (2005), focusing on treatment as usual for internalizing problems, found that the child–therapist alliance predicted therapeutic gains in child anxiety, whereas the parent–therapist alliance predicted therapeutic gains in child anxiety and depression. As these findings illustrate, both questionnaire and observational approaches have identified some significant associations between alliance and treatment outcome. On the other hand, a meta-analysis of 38 studies (McLeod, 2011) found only a modest weighted mean relationship between measures of alliance and youth treatment outcome ($r = .14$); notably, much of the research does not show that alliance *precedes* symptom change. We need more research assessing alliance and symptoms at multiple points throughout treatment, to clarify whether there is in fact a simple causal path, a bidirectional relation, or some other pattern of association.

More broadly, we need the most sophisticated methods we can muster to learn all we can about whether there are, in fact, patterns of therapist behavior and therapist–youth interaction that predict good treatment outcomes; this can be valuable in usual clinical care (e.g., Hawley & Weisz, 2005; McLeod & Weisz, 2005), and it seems especially timely in relation to structured, protocol-guided treatments (e.g., Kazdin et al., 2006), which may call for a special set of skills. As an example, effective use of such treatments may require agile, multitasking therapists who can maintain attention to a structured treatment plan, remain responsive to what the youths and parents bring to the session, find ways to connect the treatment agenda to the youngster's real life concerns, nurture a warm relationship, and make sessions lively and engaging. Tests of these and other speculations on therapist–process–outcome connections within evidence-based practice are likely to be a valuable component of the research agenda for many years.

Identifying the Effective Range of Treatments

The youth treatment outcome literature is much stronger in demonstrating benefit than in identifying the boundary conditions that constrain benefit. For each treatment, we need to know as much as possible about the range of youth and family clinical and demographic characteristics within which the treatments are helpful and outside of which effects diminish. Even the best-supported treatments are beneficial for some conditions and some youths but not others, with benefit potentially limited by comorbid conditions, age, socioeconomic status (SES), ethnicity, family configuration, or other clinical and demographic factors; but until recent years, research left us relatively uninformed about such constraints. Fortunately, the chapters in this volume show a marked increase in attention to these issues since the time of our first edition (Kazdin & Weisz, 2003).

Given the relative youth of our field, it is not surprising that most tested treatments lack provisions for dealing with many variations in language, values, customs, child-rearing traditions, beliefs and expectancies about child and parent behavior, and distinctive stressors, resources, values, and preferred learning styles associated with different cultural traditions. However, a number of the interventions described in this volume have ventured into new cultural territory (in this volume, see Forgatch & Gewirtz, Chapter 6; Webster-Stratton & Reid, Chapter 8; Zisser-Nathenson et al., Chapter 7), and efforts to transport treatments across national and ethnic boundaries have necessitated some treatment adaptation (see, in this volume, Merry et al., Chapter 23; Ogden, Askeland, Christensen, Christiansen, & Kjøbli, Chapter 22). It certainly does seem possible that the interplay between cultural factors and treatment characteristics may influence the relationship between child/family and therapist, the likelihood of treatment completion versus dropout, and the clinical outcome of the treatment process (Weisz et al., 1995). Huey and Polo (Chapter 21, this volume) suggest that, to the extent that evidence is now available, evidence-based psychotherapies may be rather robust across certain ethnic and racial boundaries, but research on this topic is still in early days (Huey, Tilley, Jones, & Smith, 2014). We need more research building on the work described by Huey and Polo, assessing the extent to which treatment persistence, process, and outcome are moderated by race, ethnicity, culture, and a variety of other child and family characteristics and their interaction, and testing the extent to which culturally sensitive design and adaptation of therapies improves treatment process and outcome.

Understanding the Necessary and Sufficient Conditions for Treatment Benefit

Among the diverse treatments that are considered evidence-based, a substantial subset are omnibus or multicomponent in form, with various concepts and skills brought together in one protocol, and with termination considered appropriate only when all the concepts and skills have been covered. For some of these treatments, all the elements may well be needed, but often the evidence base is too poorly developed to clarify just which elements are truly necessary or whether a subset of them, used alone, might be sufficient to produce most of the benefit possible from the treatment. Indeed, it is the absence of such a clear picture that often stimulates development of multicomponent interventions; new concepts and skills are added when in doubt, because it seems that they may help, and *they probably can't hurt*.

One result of this process may be treatments with *adipose tissue*, components that do not contribute much to the outcomes achieved. For a variety of reasons, including the time and expense of treatment, we need interventions that are as efficient as possible. Treatments that fall short of this goal are apt to clash with the current emphasis on managing costs and time. Increasing treatment efficiency will enhance the attractiveness of the interventions to practitioners and payers, improve the teachability of the procedures and time to mastery, and increase the likelihood that youths and families will stay the course to the end of treatment. That said, some treatment elements may not enhance outcome directly but still may be useful to retain. For example, elements that enhance the acceptability of treatment, minimize dropout rates, or increase patient and therapist compliance with the treatment regimen may serve as the "spoonful of sugar that makes the medicine go down" and be valuable to keep for that reason (Lyon & Koerner, 2016).

In our field, a traditional pathway to understanding which treatment elements are necessary and sufficient is *dismantling* research, in which various treatment components are broken apart and tested separately and in various combinations. In principle, such research should provide the key to understanding necessity and sufficiency within the evidence-based treatments; but the task is complex when the same protocol includes many elements, because the number of combinations multiplies quickly as components are added. A further complication is that different subgroups of youths may respond differently to different subsets of treatment components. Leijten et al. (2015) have described a promising "microtrials" methodology for addressing this complexity. Identifying necessary and sufficient conditions may be particularly challenging for some of the more complex multicomponent treatments and particularly those targeting comorbid conditions, but it is these treatments and these conditions for which streamlining may be most needed.

Identifying Mechanisms of Change that Explain Why Treatments Work

The job of streamlining treatments would, of course, be greatly simplified if we knew the specific change processes that make the treatments work. However, at this point, we know much more about what outcomes are produced by evidence-based therapies than about what happens in treatment that actually *causes* those outcomes (Kazdin, 2000). This is understandable for at least two reasons. First, simple logic dictates that we first find out *whether* a treatment works, so that we can know whether there is a benefit that needs an explanation. Second, figuring out *why* (i.e., what the causal mechanisms are) is not a simple task or a quick one. These difficulties notwithstanding, the task is critical for the field. Failure to identify core causal processes could mean a proliferation of treatments administered rather superstitiously "because they work," but without an understanding of the change processes that must be set in motion to produce results. This in turn would raise the risk of including therapy components that add to treatment burden without actually contributing to change.

To understand *how* treatments actually work, we need a new generation of research on mechanisms underlying change. One element of this process (but *only* one) is testing hypothesized mediators of outcome. Data-analytic procedures have been developed for mediation testing, including tests of differing mediation models (e.g., Baron & Kenney, 1986; Hayes, 2015; Valeri & VanderWeele, 2013), and the raw material needed for such procedures exists in many treatment investigators' datasets. In a review, Weersing and Weisz (2002) noted that 63% of clinical trials in the areas of anxiety, depression, and disruptive behavior included measures of potential mediators in their designs, but only six of the 67 studies surveyed had included any formal mediation test.

As the chapters in this volume show, mediation testing has surged since the Weersing–Weisz (2002) review, at least in problem domains for which substantial samples can be obtained for trials. Investigation of proposed mediators is now a part of the youth treatment outcome research agenda in areas as diverse as depression, anxiety, posttraumatic stress, conduct problems, delinquency, substance use and abuse, and sex offending. Many of the findings support mediational processes that are integral to the treatment models. Some open up areas of controversy regarding prominent models, sparking debate and further analysis, and ultimately leading to a sharper image of how mediation does and does not operate in relation to prominent treatment models.

While mediation tests have real value, a case has been made that such tests alone cannot tell us what the mechanisms of change are for any treatment. Kazdin (2007) has noted that mediation tests can be used to explain statistically an association between independent and dependent variables in an outcome study, but the mediators thus identified cannot alone tell us the processes or events that are responsible for change, the reasons why change occurred, or how change came about. Identifying mechanisms of change, Kazdin notes, requires that investigators (1) demonstrate a strong and specific association among the intervention employed, the proposed mediator, and therapeutic change (ideally ruling out alternative plausible processes that are *not* associated with change); (2) show consistency in the pattern across replications; (3) conduct experimental tests in which the proposed mediator or mechanism is manipulated, demonstrating its impact; (4) establish a timeline in which proposed mechanisms precede their proposed effects; (5) provide evidence of a gradient in which increasing degrees or doses of the proposed mechanism are associated with larger changes in the outcomes of interest; and (6) establish the plausibility of the hypothesized operation of the mechanism vis-à-vis findings in the broader evidence base—does the proposed mechanism of action make sense in light of what we know based on relevant studies, and even common sense?

This rich agenda for establishing mechanisms of change goes far beyond the simple statistics of standard mediation testing and clearly will require extended effort by serious clinical scientists conducting and synthesizing multiple studies within each treatment domain. The work will be challenging, but the payoff could be enormous. With increased understanding of the mechanisms of therapeutic change within the different domains of dysfunction, the prospects will increase for us to (1) identify crosscutting principles for use in designing, refining, and streamlining interventions, (2) train therapists by teaching them what processes they need to set in motion rather than simply what techniques to use; and (3) understand and reverse treatment failures by focusing on the change processes that need to be activated to produce success.

Harnessing the Neuroscience Revolution

The search for mediators and mechanisms of change may be especially enriched by the methods and findings of neuroscience, which is now central to the discipline of psychology. In fact, as suggested by Peverill and McLaughlin (Chapter 30, this volume), neuroscience has the potential to address three critical questions in psychotherapy research:

1. Which individuals are more or less likely to respond to specific treatments, or treatment components?
2. Which clinically meaningful subgroups within broad categories of psychopathology are best matched to specific treatments, or treatment components?
3. What neural mechanisms may index mechanisms of change, explaining why treatments work when they do, and why not when they do not?

Research addressing these questions to date has focused mainly on psychotherapy with adults, but that work illustrates the potential of neuroscience to shed light on child and adolescent psychotherapy, and some work with these younger populations has already begun. In relation to the first question noted earlier (i.e., which people will respond to which treatments?), multiple studies have shown that adults with social anxiety disorder who, at pretreatment, show greater response to negative facial emotion in the dorsal and ventral occipitotemporal cortex (visual processing areas of the brain), improve more than others when treated with CBT (see, e.g., Klumpp, Fitzgerald, & Phan, 2013). And research with children and adolescents (McClure et al., 2006) indicated that pretreatment amygdala activity in response to viewing fearful faces was negatively associated with clinician-reported improvement in children receiving CBT (or medication) for anxiety disorders. Some findings now indicate that information about neural processes may markedly outperform clinical and behavioral measures in predicting outcome. As one example from adult research, Whitfield-Gabrieli et al. (2015) found that pretreatment clinical and behavioral measures accounted for only 12% of the variance in treatment outcome when CBT was used to treat social anxiety disorder, but that outcome was predicted with 81% accuracy when data on structural and functional connectivity were added.

Using the methods of neuroscience to identify mechanisms of change in youth psychotherapy may be especially challenging given the stringent requirements for identification of mechanisms (see Kazdin, 2007), but the benefits of success could be enormous. Learning which switches, when flipped, lead to genuine therapeutic change could allow us to streamline treatments with a focus on the change processes that matter most, and conceivably create new interventions that go directly to the mechanisms and surpass the success of current treatments. Identifying mechanisms can be difficult using self-report measures, which carry significant measurement error and often show marked differences across informants. As an alternative, or complement, measures of neural functioning may provide the kind of rigorous evidence most needed to unearth true mechanisms. Although we lack definitive studies in this sphere to date, Peverill and McLaughlin (Chapter 30, this volume) provide a very helpful example of how this might be done, building on existing evidence and moving to the next step in the domain of child and adolescent psychotherapy.

Studying Evidence-Based Psychotherapies in Relation to Clinical Practice

It is instructive to note that not all who share our interest in quality mental health care share our enthusiasm for the evidence-based, manual-guided treatments tested in randomized controlled trials (RCTs; see, e.g., Lilienfeld, Ritschel, Lynn, Cautin, & Latzman, 2013; Stewart, Chambless, & Baron, 2012). Many mental health care professionals are genuinely concerned that this new generation of manual-guided treatments is either not relevant to the work they do or not appropriate for the clients they treat. The specific worries are diverse, but among those frequently mentioned are (1) that the use of prescriptive, manual-guided treatments will limit creativity and innovation, and may risk turning therapists into mere technicians who follow cookie-cutter procedures; (2) that manual adherence will interfere with development of a productive therapeutic relationship and constrain the therapist's ability to individualize treatment; (3) that the treatments have only been tested with simple cases with low levels of psychopathology and may not work with more severe and complex cases; (4) that the treatments tend to focus on single problems or disorders and may therefore not work with comorbid cases; and (5) that the complexity and volatility of clinically referred individuals and their families make each session unpredictable and a predetermined series of session plans unworkable. Related concerns are reflected in broader critiques of clinical research, extending even to studies of medical intervention (e.g., Ionnadis, 2016).

Some of these points may not be valid, and others may not apply equally to all evidence-based psychotherapies, but it would be a mistake simply to dismiss the arguments out of hand. At a minimum, we need to understand the concerns that make many practitioners reluctant to use these structured treatments, so that we can grasp and address impediments to evidence-based treatment (EBT) implementation in practice settings. A second good reason to attend to the concerns is that some may be valid, at least for a number of EBTs; addressing points that are valid could improve the robustness and viability of the treatments (see Lilienfield et al., 2013; Weisz, 2014; Weisz, Ugueto, Cheron, & Herren, 2013). One point on which proponents and opponents may agree is that most of the concerns can be construed as empirical questions warranting research attention. In this respect, the different perspectives on evidence-based practice can be valuable heuristically.

Differences between the perspectives of treatment researchers and treatment providers may be understood partly in relation to the distinction between efficacy and effectiveness research. Most evidence on evidence-based psychotherapies is clustered at the *efficacy* end of the continuum (i.e., derived from studies involving carefully arranged and somewhat idealized conditions designed to maximize the opportunity to show treatment effects). For practitioners, the apparent gap between the conditions prevailing in most treatment research and the conditions of actual youth mental health practice raise questions about whether the resultant treatments can work well in a practice context (Weisz, Ugueto, et al., 2013). The efficacy research versus clinical practice gap may include characteristics of the treated individuals (e.g., youths in the clinic may be more severely disturbed, more likely to meet criteria for a diagnosis, more likely to have numerous comorbidities, and less motivated for treatment), their families (e.g., more parental psychopathology, family life event stressors, and perhaps even maltreatment), reasons for seeking treatment (e.g., not recruited from schools or through ads, but referred by caregivers because of unusually serious problems or family crisis, or even court-ordered referrals), the settings in which treatment is done (e.g., more financial forms to complete, more bureaucracy, and sometimes a less welcoming approach in the clinic), the therapists who provide the treatment (e.g., not graduate students or research assistants hired by and loyal to the advisor and committed to his or her treatment research program, but rather staff therapists who barely know the treatment developer or the tested treatment, and who may prefer different treatment methods), the incentive system (e.g., not paid by the treatment developer to deliver his or her EBT with close adherence to the manual, but paid by the clinic to see many cases and with no method prescribed), and the conditions under which therapists deliver the treatment (not graduate students' flexible time, but strict productivity requirements, paperwork to complete, and little time to learn a manual or adhere closely to it).

Such differences between psychotherapy in many RCTs and psychotherapy in clinical practice can lead practitioners to question the relevance of the evidence to their own clinical practice. On the plus side, the same differences may also be viewed as a nascent agenda for treatment researchers. Indeed, the very real-world factors that experimentalists might view as a nuisance (e.g., child comorbidity, parent pathology, life stresses that produce no-shows and dropouts, therapists with heavy caseloads) and thus attempt to avoid (e.g., by recruiting and screening cases, applying exclusion criteria, hiring their own therapists) or control, may in fact be precisely what we need to include, to understand, and to address, if we are to develop psychosocial treatment protocols that work well in practice (Weisz, 2014). Treatments that cannot cope with these real-world factors may not fare so well in practice, no matter how efficacious they are in well-controlled laboratory trials.

Thus, another critical direction for research on evidence-based psychotherapies is toward clinical practice. Testing treatments under conditions more and more like those of actual practice in mental health service settings may be a way to build especially robust treatments and an evidence base that supports their use in everyday clinical care.

Implementing Treatments within New Populations and Contexts

Even as researchers work to refine treatments for young people and boost their impact and clinical practice relevance, there is exciting work under way addressing the challenges of treatment implementation in new settings. This includes research on implementation of treatments in health maintenance organizations (HMOs) and with incarcerated youths (Rohde, Chapter 4, this volume), statewide service systems (Hoagwood, Peth-Pierce, Glaeser, Whitmyre, Shorter, & Vardanian, Chapter 27, this volume), a nationwide array of services (in this volume, see Merry et al., Chapter 23; Ogden et al., Chapter 22; Scott, Chapter 24), and across multiple national and cultural boundaries (in this volume, see Forgatch & Gewirtz, Chapter 6; Henggeler & Schaefer, Chapter 12; Powell et al., Chapter 10; Sanders & Turner, Chapter 25; Webster-Stratton & Reid, Chapter 8).

As the work of implementation and transporting builds and extends, we are apt to see increasingly sophisticated models of how to plan, design, revise, and refine treatments to achieve good fit with particular populations and contexts (see, e.g., the rich array of articles in the journal *Implementation Science*). An explicit *deployment-focused model* (see Weisz, 2004; Weisz et al., 2015) is one approach, proposing steps of treatment development and testing to build interventions that will fit the specific contexts for which they are ultimately intended. In addition, the model-building process will almost certainly need to include attention to the broad array of policy and practical considerations that can work for or against implementation. As one example, a significant impediment to the spread of evidence-based psychotherapies in the United States is that effective use of the treatments requires considerable training and supervision, both of which are more costly for financially strapped clinicians and provider organizations than simply continuing current practice patterns. Because reimbursement is based on units of service rather than which particular treatment is being done, or whether it is effective, there is little incentive for bringing in new practices. In fact, increased cost paired with no increased income is a clear *dis*incentive working *against* the implementation of new evidence-based practices. As this example illustrates, our models of implementation will likely need to encompass theoretical, clinical, and very practical considerations—including money, and the way it must figure into decision making by those who run organizations and provide clinical care.

CONCLUDING COMMENTS

We have come a long way, as a field, from the early precursors we described in Chapter 1 (this volume). After slow ferment between the time of Aristotle and psychoanalytic theory, child and adolescent psychotherapy and related research accelerated quickly through the 20th century, with an output of more than 1,500 youth treatment outcome studies by the year 1999 (see Kazdin, 2000). As one index of the payoff from that output, the *Journal of Clinical Child Psychology* (now the *Journal of Clinical Child and Adolescent Psychology*) devoted an entire issue, in 1998, to articles reporting on 27 youth treatments meeting multiple criteria for the status of "empirically supported psychosocial interventions" (see Lonigan, Elbert, & Johnson, 1998). A 10-year update issue of the same journal (Silverman & Hinshaw, 2008) reported on 46 "evidence-based psychosocial treatments." This number will easily be surpassed by a series of evidence-base update articles in the same journal beginning in 2014 and still under way, which already encompasses interventions for 10 broad problem areas (Southam-Gerow & Prinstein, 2014). As research intensity and output have surged, so has attention to the responsible conduct of research in relation to ethical and legal issues, as described by Fried and Fisher (Chapter 26, this volume). This book brings together descriptions of evidence-based psychotherapies for young people and the evidence on those therapies written by the treatment developers who know them best. These accounts are complemented by a focus on developmental and ethical issues in the field and research on implementation of evidence-based psychotherapies across a range of populations and contexts.

In this final chapter, we have noted several characteristics of the treatments and the evidence that are particularly admirable, including breadth of coverage of significant youth problems and disorders, a creative array of treatment delivery models, an increasingly rich mix of informants and measures in outcome assessment, and recently expanded attention to moderators and mediators of treatment outcome. But we also find areas in which progress is needed and topics that warrant close attention in future research, as outlined in Table 33.1. Among these, we note a need to extend outcome research to treatment models that are widely used in clinical practice but poorly represented in the research literature thus far. We note how little is currently known about the ways therapist behavior and the therapeutic relationship relate to treatment persistence and outcome, particularly in the world of manual-guided treatments. We stress the need to identify mechanisms of action that explain why treatments work. We emphasize the need to understand evidence-based psychotherapies and how they perform in the arena of clinical practice, with more of the research carried out under conditions like those practitioners confront. And we stress the need to build a science and a viable model of treatment implementation and transportability, to guide ever-increasing efforts to apply tested interventions in new contexts and with new populations.

Viewed in historical perspective, the trajectory of research on child and adolescent psychotherapy is quite remarkable, particularly in recent decades. The clinical scientists whose work fills this book have built that recent trajectory. We laud the work of these leaders who have brought us to such a significant point in psychotherapy research. At the same time, we honor members of the emerging next generation as they work to take evidence-based psychotherapy to new levels, for the benefit of children, adolescents, and their families.

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