Doug Oman   *Editor*

Why Religion and Spirituality Matter for Public Health

Evidence, Implications, and Resources

Foreword by Sandro Galea

Religion, Spirituality and Health: A Social Scientific Approach

Volume 2

The relationship between religious/spiritual belief or behaviour and health behaviour has been explored over several decades and across various disciplines. Religious variables have consistently been found to have a direct relationship to physical and mental health. At the same time - research has also indicated potential societal tensions that can exist between religion and health – we have seen this in relation to family planning, HIV/AIDS, and reproduction. This book series aims to uncover the impact of religion on individual health behaviours and outcomes but also the influence of religion on health practices at the community level. This book series uncovers the impact of religion on individual health behaviors and outcomes, as well as the influence of religion on health practices at the community level. It consists of volumes that are based on multi-methodological approaches, provide quantitative and qualitative forms of analysis, and advance the understanding of the intersection between religion and health beyond the correlation of religious belief and health outcomes. Building on earlier research, the series explores the direct relationship between religious variables and physical and mental health, as well as the potential societal tensions that have been shown to exist between religion and health – for example in relation to family planning, HIV/AIDS, and reproduction. Spoken values are often shared within religious communities; however, religious influence can at times be extended outside of the community in instances of service provisions such as hospital ownership, various research active think tanks, political action, and the development of community mores.

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Why Religion and Spirituality Matter for Public Health

Evidence, Implications, and Resources

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Printed on acid-free paper

Foreword

Public health is concerned both with improving overall health of populations and with minimizing differences in health between groups within populations. There is little question that in order to achieve these ends, public health should centrally be concerned with the social, economic, and cultural factors that shape the health of populations. These structural factors shape the behavioral and cognitive factors that influence our daily lives; shape the food we eat, the water we drink, and the air we breathe; and shape how we think, feel, and behave. There is abundant evidence for the relation between a whole range of structural factors and the health of populations. We have now several shelves full of books discussing how social cohesion, segregation, the urban environment, and public policies – to name but a few – influence health. This book is a worthwhile addition to that canon, focusing our attention on the role of religion and spirituality (R/S) as determinants of the health of populations.

Why a book about R/S?

First, as the book makes clear, religion and spirituality are forces shared and embraced by billions of people worldwide. They represent cultural experiences that cut across countries and continents, across racial and ethnic groups, across ages. That makes religion and spirituality near-ubiquitous features of the human experience. It is then virtually self-evident that R/S are going to critically influence population experiences, behaviors, and health.

Second, our engagement with R/S within public health has, at least at the level of synthesis and concept, substantially lagged behind our engagement with other social and cultural forces of comparable import, despite the production of thousands of papers that have shown an association between R/S and health, generally with positive health. This book then fills that gap – and does so admirably – summarizing the evidence ably and moving the reader to practical chapters that can guide engagement with R/S to the ends of improving the health of populations.

Third, and perhaps most importantly, R/S represent cultural experiences that are truly foundational to a whole range of other drives that shape the health of populations. R/S play an enormous role in shaping each and every one of our values, intentionally or unintentionally. Values are what we choose to focus on, in a world of

limited time and resources. This choice is both necessary – if we are to get anything done – and deeply revealing. Indeed, the philosopher José Ortega y Gasset once wrote "Tell me to what you pay attention and I will tell you who you are." Normative ethics, the branch of ethics that assigns moral value to actions, suggests three ethical theories that inform action: virtue, deontology, and consequentialism. Virtue ethics are concerned with the moral character of the person or people performing an action – i.e., are they good people acting in good faith? This means that, for an action to be ethical, it does not necessarily have to produce positive results, as long as it is performed by virtuous people. Deontology is concerned with the action itself – i.e., is it the right step to take? Is it being performed correctly? Under this system, intrinsically bad actions should be avoided, even if they may lead to positive results. Consequentialism is concerned with outcomes – i.e., what did this action, in the end, actually do? In all of these cases, values are defined by their relationship to what we do. And in all cases, R/S can influence values, informing our moral character, judgment of the right or wrong step to take, and an appraisal of the desirability of different consequences. R/S shape how much we care about aspects of the world around us. And, critically, when we genuinely care about something, particularly when it is an injustice in need of correcting or a matter of lives to be saved, it is difficult to remain a spectator, or to limit our activities to the accumulation of knowledge for its own sake. Our values then push us to guide our priorities, where we invest our time, resources, and money.

At the collective level, it is values that shape the contours of our political decisions, that help societies articulate our agreed-upon to-do lists, and that influence, explicitly or implicitly, where we favor investing our collective resources. It is no surprise then that political campaigns are waged about, won, and lost, over values. Nor is it a surprise that leaders at all levels aim to conform to established values or to shift values to serve a desired agenda. For millennia, R/S have been shaping and shifting values, both explicitly as some religions have, for periods dominated public conversations, norms, and behaviors, and implicitly as personal spirituality influences what many of us do on a day-to-day basis. Seen in this light, I would argue that one of the – if not the – most foundational drivers of health, a determinant of determinants, sometimes invisible, but nearly always there, is R/S.

It is with this in mind that I am enthusiastic about this book. Those of us concerned with the health of populations have much to learn from the chapters in this book, both from the point of view of understanding how R/S do exert their influence and of learning how to engage them positively toward the end of improving health. Insofar as this book can help us get there, it stands to be a step in the right direction for population health.

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Preface

This volume aims to help and encourage the field of public health in responding to the recent emergence of an increasingly well-organized interdisciplinary field focused on the health implications of spirituality and religion. The primary audiences toward whom the book is directed are researchers, students, faculty, and practitioners in public health. For them, the book is intended as a "go-to" resource that supplies key information for appropriately addressing religion and spirituality in research, teaching, and practice, as well as for preparing compelling evidence-based applications for funding. Beyond this foundational public health audience, the volume is also directed to physicians, psychologists, social workers, gerontologists, nurses, and every other health professional aiming to inform his or her work by taking into account population health perspectives.

For those in the field of public health, our goals are twofold. On the one hand, the book is intended to help public health *catch up* with the significant strides that many other health professions have made in addressing the implications of spirituality and religion. Equally important, the volume is also intended to assist public health as a field in discovering and delivering its own *distinctive contribution* to the interdisciplinary field of religion, spirituality, and health. The chapters in this volume do not confine themselves to individual-level manifestations and implications of spirituality and religion, but emphasize that religion and spirituality are also group-level phenomena that occur in the community, that generate community-level effects, and that can inform community-level efforts to foster population health.

This volume emerged from two projects based in the School of Public Health at the University of California, Berkeley, that were funded by the John Templeton Foundation. Through these projects we assembled a working group of Berkeley faculty who helped generate most of the empirical reviews that appear in Part I. The funded projects also helped support additional work by the editor in assembling Parts II, III, and IV, and helped sponsor some of the teaching efforts described in Part III. We are very grateful to the John Templeton Foundation for making this work and this volume possible (through "On the Viewscreen: Integrating Spiritual Factors into Public Health Teaching & Practice," grant # 43419; "Going National: Addressing Spiritual Factors in Public Health Education," grant # 55789).

The editor also wishes to thank many, many other people who have helped make this writing project possible. Extraordinary thanks are due to Len Syme, an unfailing source of encouragement and feedback throughout the long process of learning the field and then preparing this volume. Special thanks for extraordinary effort are also due to Nancy Epstein, who supplied much helpful advice, feedback, and encouragement, and authored two chapters. All of the contributing authors merit many thanks and accolades for high-quality and timely contributions. Thanks are also due to the Berkeley working group, which included many contributing authors plus Denise Herd and Kristen Madsen; thanks are also due to Lara Hovsepian-Ruby, numerous Berkeley staff, and other colleagues across the country who have helped in carrying out these two projects. We are also grateful to the series editors at Springer, Alphia Possamai-Inesedy and Chris Ellison, who provided much useful guidance and encouragement, as well as to the anonymous external reviewers, and to many others at Springer who helped shape the book and make it possible, including Cristina Dos Santos, Anita Rachmat, Prasad Gurunadham, and KrishnaKumar. More broadly, abiding thanks are due to the toiling scholars and research participants everywhere who have helped build up the interdisciplinary empirical field of religion and spirituality and health, who are too numerous to name, and to whom this book is dedicated. Last but not least, the editor wishes to express profound gratitude to many others who have deeply influenced and supported his understanding of spirituality and religion and their effects on health, including especially Eknath Easwaran, Huston Smith, Carl Thoresen, Kenneth Pargament, and many friends and neighbors who have patiently borne with the long task of preparing this volume. Of course, any flaws in the fashioning of this volume are solely the editor's own responsibility.

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Editor

Doug Oman, PhD, received his doctorate from the University of California, Berkeley, where he is associate adjunct professor in the School of Public Health. In more than six dozen professional publications, Oman has focused especially on health, longevity, and professional practice implications of spiritual and religious factors, as well as related psychosocial factors such as compassion and altruism. Oman has been principal investigator for two randomized trials of nonsectarian and explicitly spiritual forms of meditation and has served as president (2016–2017) of the Society for the Psychology of Religion and Spirituality (Division 36 of the American Psychological Association). He has recently been serving as associate editor of the journals *Psychology of Religion and Spirituality* (published by the American Psychological Association) and *Mindfulness* (published by Springer). Each year since 2009, he has taught a course at the University of California, Berkeley, on public health and spirituality. His 1998 paper, "Religion and mortality among the community-dwelling elderly," was awarded the Templeton Prize for Exemplary Paper in Religion and the Medical Sciences.

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Elephant in the Room: Why Spirituality and Religion Matter for Public Health

Doug Oman

Abstract This chapter introduces the book *Why Religion and Spirituality Matter for Public Health: Evidence, Implications, and Resources*. More than 3000 empirical studies 100 systematic reviews have been published on relations of religion and/or spirituality (R/S) with health, but R/S factors remain neglected in public health teaching and research. R.S reflects ultimate concern that taps deep motivations, and R/S typically encourages stewardship of health, so its health-relevance is unsurprising from a behavioral motivation perspective. R/S engagement also commonly fosters social support and access to distinctive methods of coping with stress, elements of a "generic model" of how R/S influences health. Predominantly favorable relations suggest that R/S might be a fundamental cause of health, but R/S factors also sometimes correlate unfavorably with risk factors or poorer health. Part I of this volume contains 14 chapters that review evidence on R/S-health relations from the perspectives of major subfields of public health that include social factors, nutrition, infectious diseases, environmental health, maternal/child health, health policy and management, public health education and promotion, mental health, and clinical practice. Part II contains two chapters that address implications for public health practice, emphasizing community-based health promotion, health policy advocacy, and healthcare systems and management. The eight chapters in Part III offer resources for public health educators, including narratives of how R/S-health relations have been taught in schools of public health at universities that include Emory, Harvard, University of California at Berkeley, Boston University, University of Michigan, Drexel University, and University of Illinois at Chicago. A concluding chapter offers international perspectives.

Keywords Religion · Spirituality · Public health · Health behavior · Social support · Religious coping · Ultimate concern · Systematic review · Fundamental cause · Education

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To its own detriment, the field of public health has ignored a proverbial elephant in the room: An enormous body of empirical evidence that now links religious and spiritual (R/S) factors to health – and very commonly to *better health*. As documented in this book, in the past 20 years, refereed journals have published more than 100 systematic reviews on relations between religion, spirituality and health, revealing potentially causal relationships. Despite this explosion of interest, however, R/S factors remain neglected in curricula and research in public health, when compared with the attention they receive from many other health-related fields such as medicine, psychology, and nursing. This book aims to provide a way out of the intellectual blindness into which the public health field has unintentionally wandered: This book aims to empower public health professionals by offering key resources for acknowledging the elephant in the room and harnessing its power for good, without permitting it to stray beyond appropriate channels. More specifically, this volume is intended as a handbook to orient public health educators, students, researchers, and practitioners to the theoretical and empirical research base on religion/spirituality and health, its implications for practice, and how it can be communicated to future generations of public health professionals.

The tremendous health-relevance of religion and spirituality documented here may be viewed as both surprising and unsurprising. It may be surprising from the point of view of the "secularization theory" that was popular in the 1960s and 1970s (e.g., Berger 1967; Swatos and Christiano 1999). In vogue when many current public health leaders received their academic training, secularization theory predicted that the advance of science would soon render religious worldviews irrelevant and outmoded, causing them to fade from public life. Yet the resurgence of religious movements in the US and worldwide since the late 1970s rendered such secularization theory *itself* obsolete, even in the perceptions of many of its influential original proponents (e.g., Berger 1999). Unfortunately, *practical* resources for going beyond secularization theory have been slow to emerge in the field of public health.

Yet the health-relevance of religion/spirituality is arguably *not* surprising when viewed from the science of behavioral motivation (Ford 1992; Emmons 1999). The motivation of communities and individuals to adopt improved health behaviors is central to much public health practice. Spirituality and religion are profoundly relevant to motivation because they commonly reflect our *ultimate concerns*, our deepest motives, in the memorable phrasing of theologian Paul Tillich (1951). Potential actions for health that people clearly recognize as *aligned* with their ultimate concerns will be experienced as more powerfully motivating. Happily, stewardship of one's health is recognized in many religions as in part a sacred responsibility. We should therefore not be surprised that measures of religion and spirituality show overwhelmingly favorable patterns of associations with most types of individual health behaviors (see chapter "Model of Individual Health Effects from Religion/Spirituality: Supporting Evidence," this volume). Religious communities, too, are commonly committed to stewardship of the health of their members and often also of the wider society, undertaking intentional health promotion activities ranging from provision of parish nurses to campaigns for environmental justice (see, for example, chapter "Environmental Health Sciences, Religion, and Spirituality," this

volume; Brudenell 2003). Importantly, on both the individual and community levels, engagement in spirituality and/or religion commonly gives access to social support and a wide range of other coping resources, some of them distinctive to religion/spirituality (Pargament 1997; Pargament et al. 2000). Such coping resources can mitigate distress, reduce "allostatic load" (Seeman et al. 2001), and prevent or reduce physiological damage from excessive stress.

Yet religion as it exists in the real world is not uniformly associated with favorable health factors and outcomes. For example, despite generally favorable relations, several chapters in this volume describe evidence that some dimensions of religion, such as fundamentalism, have frequently been found to correlate with less concern for the environment, more discriminatory attitudes against ethnic, religious, or sexual minorities, and sometimes poorer health behaviors and outcomes (see chapters in this volume on social factors, discrimination, and environmental health). It is very important, therefore, not to oversimplify the relation between R/S factors and health. The question, "Are religion and spirituality related to better health?" is thus too simple. We agree with Pargament's (2002) recommendation to instead ask the richer question, "How helpful or harmful are particular forms of religious expression for particular people dealing with particular situations in particular social contexts according to particular criteria of helpfulness or harmfulness?" (p. 168). This does not mean that the generally favorable R/S-health associations are a mere coincidence that holds no significance. Several mediating pathways were noted earlier, and some investigators have gone further, speculating that religion/spirituality might be a "fundamental cause" of health in the sense that they tend to "maintain an association with disease even when intervening mechanisms change" (Link and Phelan 1995, p. 80) (see Hummer et al. 1999, chapters "Social and Community-Level Factors in Health Effects from Religion/Spirituality," and "Weighing the Evidence: What is Revealed by 100+ Meta-Analyses and Systematic Reviews of Religion/Spirituality and Health?" this volume). Several chapters sketch a "dynamic and evolving" understanding of religion/spirituality that may help reconcile the observation of some negative relations with the notion of R/S as a fundamental cause (e.g., see chapter "Social and Community-Level Factors in Health Effects from Religion/Spirituality," and Q6 in chapter "Questions on Assessing the Evidence Linking Religion/Spirituality to Health," this volume). Viewing religion/spirituality as a fundamental cause of health may therefore be plausible and worth considering, but such a view must also contend with the mixed empirical patterns as reported in this volume.

Readers who explore the rich set of reviews and practical and educational resources contained in this volume should be aware of several other important characteristics of the growing body of scientific research on R/S and health. First, few if any empirical researchers on R/S-health relations regard their findings as implying any conclusions about the truth claims of specific religious traditions, or of religion in general. Such questions are generally regarded as untestable through empirical data, an agnostic stand that has also been emphasized by major R/S-health researchers in fields such as medicine and psychology (e.g., Koenig et al. 2012; Miller and Thoresen 2003).

1   Spirituality and Religion: What Are They?

But the inability to draw metaphysical conclusions does not mean that people's religious and spiritual engagement cannot be measured. As noted by numerous scholars across the humanities as well as social and biomedical sciences, religion and spirituality are increasingly viewed as distinct from each other. However, neither term possesses a consensus definition (Oman 2013). Different empirical studies have used a wide range of empirical measures of religion and spirituality, a fact that must be kept in mind when interpreting or reviewing the literature. Despite this complexity, several recurring themes can greatly assist in navigating this literature.

First, in contemporary English, "spirituality" has come to connote something more individual and experiential, perhaps involving experiences of transcendence or of the sacred. The term "spirituality" is also often perceived as a more universal and inclusive term, even by many people who do not hesitate to self-identify as religious. In contrast, "religion" has come to connote something more organized or institutional, such as the established religion observable in churches. Consistent with this modern usage, a substantial fraction of US adults now describe themselves as "spiritual but not religious,"[1] reflecting spiritual concerns or experiences ostensibly pursued in ways independent of organized religion (Hastings 2016). Yet only a century ago, spirituality was widely viewed as something inseparable from religion, perhaps as something expected especially of a person who was deeply religious. Responding in part to this change in usage, a growing research literature now explores the meanings that these terms hold for ordinary US adults as well as the ways that they might be usefully defined as technical terms (Ammerman 2013; Hastings 2016; Oman 2013; Wuthnow 1998; Zinnbauer et al. 1997).

Evidence from national surveys as well as personal observation suggest to the present author that "spiritual but not religious" identities may be even more common among public health faculty and students than among the general US population (see chapter "Introduction: What Should Public Health Students Be Taught About Religion and Spirituality?," this volume). Among University of California at Berkeley students, one can find large numbers who identify as "spiritual but not religious" as well as large numbers self-identifying as religious. The present author has structured his teaching to present the R/S-public health topic in ways engaging to both audiences (see chapter "An Evidence-Based Course at U.C. Berkeley on Religious and Spiritual Factors in Public Health," this volume).

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[1] Estimates of the fraction of US adults who view themselves as spiritual but not religious have varied, perhaps in part due to different ways of asking the question. Up to 33% of respondents in national surveys have reported they were "spiritual but not religious," when given the alternatives of "religious" (50%) and "neither" (11%) (Gallup Poll 2002, with 4% volunteering that they were both spiritual and religious). However, Hastings (2016) reports that in the US General Social Survey, percentages increased from 1.9% in 1998 to a maximum of 6.7% in 2014, when measured as respondents who rarely or never attended religious services and who considered themselves "very or moderately spiritual" (p. 68).

Rather than impose a single definition of the terms "spirituality" and "religion," most chapters in this volume reflect how these terms have been used in the professional literatures under consideration in each chapter. Importantly, however, certain simplifying perspectives can support successful navigation of most uses of these terms in this volume. First, spirituality and religion are widely viewed as closely related: A number of surveys suggest or indicate that most US adults identify themselves as *both* "religious" *and* "spiritual" (Ellison et al. 2012; Marler and Hadaway 2002). In addition, many people hold that the primary or core *purpose* of religious traditions is to foster spirituality. "Viewed in this way," Miller and Thoresen (2003, p. 28) point out, "the field of religion is to spirituality as the field of medicine is to health." That is, even as a person may pursue health outside of organized medicine – seeking to be healthy without recourse to a physician – it is also quite possible to pursue spirituality outside of religion – seeking to be spiritual without recourse to organized religion.[2] Consistent with such approaches, religion and spirituality are commonly said to be *partly overlapping* constructs (Miller and Thoresen 2003; Zinnbauer et al. 1997).

Second, spirituality and religion are each widely understood as multidimensional. They are multidimensional because a person may be high in one dimension – such as frequency of attendance at worship services – while being low in another dimension, such as the frequency of private prayer. Such an approach is foundational to most of the recent quantitative study of religion/spirituality. Commonly studied dimensions have included people's preferred denomination, frequency of attendance at worship services, frequency of prayer, and other aspects such as a person's subjective sense of commitment to religion or spirituality.

Third, a simultaneous blessing and challenge for research on R/S and health is the existence of literally hundreds of published R/S measures that were generated for diverse purposes over many decades (e.g., Hill and Hood 1999). Most R/S-health studies have employed a comparatively small number of measures. To simplify the choice process, especially for new researchers, the National Institute on Aging helped produce an influential collection of short questionnaire measures for easy inclusion in health surveys (Fetzer 1999; see also Table 1 in chapter "Questions on Assessing the Evidence Linking Religion/Spirituality to Health," this volume). Certain dimensions of religion, such as denominational affiliation and frequency of attendance at religious services, are easy to measure through single-item self-reports, and have been included in large community-based surveys for more than half a century. Spirituality measures tend to be lengthier. A substantial body of

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[2] Some readers may also find useful an influential set of definitions that have been offered by psychologist Kenneth Pargament (1997). He suggests defining spirituality as a "search for the sacred," and defining religion (or religiousness) as a "search for significance in ways related to the sacred" (p. 32). More recently, he offered an alternative definition of religion as "the search for significance that occurs within the context of established institutions that are designed to facilitate spirituality" (Pargament et al. 2013, p. 15). According to this later definition, religion is broader than spirituality in its function, but narrower than spirituality in its institutional base. Pargament's framework has been found relevant to both Western (Abrahamic) and Indian (Dharmic) traditions (Oman and Paranjpe 2017).

validated spirituality scales has only recently become available (e.g., de Jager Meezenbroek et al. 2012; Kapuscinski and Masters 2010; Selman et al. 2011). Studies of the health effects of spirituality, especially non-religious forms of spirituality, are therefore scarce and represent an important and greatly needed emerging subfield. Finally, a small body of empirical research has studied the health effects of community-level religion/spirituality by employing counts of congregations or other neighborhood-level or community-level measures (Bartkowski et al. 2011; Jaffe et al. 2005, p. 807) (see chapter "Social and Community-Level Factors in Health Effects from Religion/Spirituality," this volume). Additional information about available R/S measures and the commonly studied R/S dimensions is provided in chapter "Questions on Assessing the Evidence Linking Religion/Spirituality to Health" (this volume).

2 Keeping Pace with an Enormous Research Base

What, then, are the health consequences and implications of religious and spiritual engagement? Many newly-alerted health professionals are astonished to learn that the aforementioned multidimensional approach to spirituality and religion has now generated a research base of more than 3000 empirical studies and more than 100 systematic reviews and meta-analyses. Studies have been published in major refereed journals in disciplines that include not only public health, but also medicine, psychiatry, psychology, nursing, social work, gerontology, geriatrics, and demography. Among the most dramatic findings has been numerous studies and meta-analytic evidence linking religious involvement, most commonly measured as frequency of attendance at religious services, with an approximately 20% reduced hazard of mortality (Chida et al. 2009, Hazard Ratio = 0.82, p < 0.001, based on k = 59 studies) (see also chapter "Religious/Spiritual Effects on Physical Morbidity and Mortality," this volume). One nationally representative study of more than 20,000 US adults reported that R/S measures were associated with a longevity gap of more than 7 years in the general population, and nearly 14 years among African Americans, and in multivariate models was associated with hazard reductions comparable to benefits from avoiding heavy smoking (Hummer et al. 1999, Odds Ratio = 1.63 for current heavy smoking, Odds Ratio = 1.50 for never attending worship services).

Not surprisingly, navigating an interdisciplinary literature of more than 3000 studies can be challenging. Orientation is aided by knowing a few of the field's key events and reference points. One major resource that has helped shape the R/S--health field is two handbooks assembled by Harold Koenig, a physician at Duke University (Koenig et al. 2001; Koenig et al. 2012). Koenig and his colleagues have exhaustively catalogued, quality-rated, and summarized findings from more than 1200 empirical studies published in the twentieth century, and more than 2100

additional studies published in the first decade of the twenty-first century.[3] While Koenig's handbooks emphasize medical perspectives and effects on individuals rather than communities, these handbooks were invaluable aids in preparing the present volume's reviews oriented toward public health.

The first comprehensive literature reviews of the R/S-health field were published in the late 1980s, and soon thereafter, in the late 1990s, the number of empirical R/S-health studies published per year began to accelerate considerably. As the volume expanded dramatically, several prominent and highly cited longevity studies were published in the *American Journal of Public Health*. They offered some of the most compelling evidence to date of health effects, and appear to have helped consolidate the emerging field's increasingly mainstream status (Kark et al. 1996; Oman and Reed 1998; Strawbridge et al. 1997). Soon thereafter, the field was further boosted and consolidated by the publication of the National Institute on Aging's sponsored book of measures and Koenig's first *Handbook*, noted earlier, as well as an overview of the emerging field in the *Annual Review of Public Health* (Chatters 2000).

But ironically, after these early contributions nearly two decades ago, public health has largely failed to follow through in a coherent, coordinated, or integrative manner. This stands in contrast to several other health-related fields. In medicine, more than three quarters of US medical schools now address R/S-health issues in their curricula, and important sourcebooks are supporting the topic's integration into global medical practice and teaching (Cobb et al. 2012; Lucchetti et al. 2012). Modeled on the Accreditation Council for Graduate Medical Education competencies, a consensus meeting of physicians has proposed the National Competencies in Spirituality and Health, along with measurable behavioral objectives (Puchalski et al. 2014). In psychology, the American Psychological Association (APA) has published nearly 20 books on spirituality and health since the late 1990s, including a nearly 2000-page *Handbook*, containing volumes on basic science as well on application (Pargament 2013). Meta-analyses of randomized trials of spiritually-infused psychotherapies have been published (Worthington et al. 2011), along with proposed sets of religious/spiritual competencies for professional psychologists (Vieten et al. 2013, 2016). Parallel efforts to address spirituality/religion have been common in nursing for decades, and are now emerging in social work (Hodge 2007; Ross 2006; Van Leeuwen et al. 2009).

In contrast, public health has been largely "missing in action." The American Public Health Association has to our knowledge published only a single book about the health relevance of spirituality or religion. This well-done volume, unfortunately now out of print, focused entirely on skills for collaboration with churches, and did not attend to the emerging R/S-health evidence (Tuggle 2000). The only *Annual*

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[3] "The first edition contained information on "over twelve hundred research studies conducted from the 1800s up to the year 2000," and the second edition included "over twenty-one hundred *quantitative* studies exami9ning the religion-health relationship during the ten years between 2000 and 2010…. We estimate that this review covers about 75 percent of the existing research" (Koenig et al. 2012, pp. 5, 9, emphasis in original).

Review of Public Health article since 2000 that focused on religious/spiritual factors was similarly well-done and valuable, but was also dedicated to collaboration rather than offering a broader consideration (Campbell et al. 2007). We need not be surprised, therefore, that most contemporary American students who graduate with a Master of Public Health or a Doctorate of Public Health degree appear to learn little or nothing about R/S-health relations in the course of their training, and some may even develop misunderstandings, such as the belief that religious or spiritual engagement has seldom been subjected to scientific study.

But potential for change also exists. Public health leaders and students demonstrate much interest in learning about religion and public health. When we conducted a national survey of public health graduate students in 2013, we found that a majority (53%) of respondents thought that too little attention in the public health curriculum had been devoted to consideration of theory and evidence about spiritual and religious factors. Almost none (about 1%) thought that too much attention had been devoted to R/S factors. More than one-third (34%) reported that no attention whatsoever had been given to R/S factors as potential causal influences on health (see chapter "Introduction: What Should Public Health Students Be Taught About Religion and Spirituality?," this volume).

Why, then, is public health "missing in action" in educating its students on the massive emerging R/S-health literature? Multiple explanations likely apply. Senior academics who long ago imbibed secularization theories may find it difficult to maintain the open mind needed to assimilate the evidence, even when they are exposed to it. Others who lack personal experience or training on the nature of religion/spirituality may be reluctant to open discussion of a topic they view as beyond their expertise. Others may have an erroneous impression that the US constitutional separation of church and state renders spiritual and religious factors irrelevant to practical and effective public health practice (see chapter "Health Policy and Management, Religion, and Spirituality," this volume). Still other professionals may never have encountered R/S-health issues, or may have the erroneous impression that religious/spiritual effects are reducible to the effects of other factors such as social support, are too small to be relevant to interventions, or are not predominantly favorable.

All of these explanations may apply, and more. But a more important question is understanding how public health might take steps to improve the situation. To gain insight on this question, my colleagues and I in 2013 also conducted a national survey of deans of schools of public health (see chapter "Introduction: What Should Public Health Students Be Taught About Religion and Spirituality?," this volume). One question asked "what resources [would you] consider most helpful or needed for properly addressing religious and spiritual factors in teaching." The answers were quite helpful, and also quite varied. Several of the leaders expressed a need for rigorous reviews (e.g., requests for "logic model or summary of the evidence," "data and rigorous analysis," "evidence based resources on how to effectively address religious and spiritual factors in educational activities," "published research and practice examples of successful interventions"). In important ways, this book represents an attempt to respond to these requests for resources. In an equally fundamental

sense, this book represents our attempt to empower our public health colleagues by supplying tools for offering the improved education desired by our graduate student survey respondents.

3   Using This Book

The present volume aims, as much as possible, to be a "one stop shopping" resource for public health students and professionals who want to improve how they address religious and spiritual factors in public health. It is directed at public health practitioners as well as academic public health educators and students. Consistent with the evidence-based nature of modern public health, it devotes a great deal of attention, in Part I, to the scientific theory and empirical evidence base for the public health relevance of R/S factors. Later sections are addressed to public health professionals in particular settings. Part II addresses implications for public health *practice*, addressing public health professionals working in health departments or a wide range of other community-based or governmental health-promotion settings. Part III addresses implications for educators training public health students. A concluding chapter addresses international implications. The following paragraphs offer additional orientation for each of these major sections.

Part I offers reviews of empirical evidence. Most of its 15 chapters cover the R/S-health evidence that is relevant to a particular subfield within public health, such as public health education, health policy and management, or environmental health sciences. The chapter "Reviewing Religion/Spirituality Evidence from a Public Health Perspective: Introduction" introduces the other chapters, describing common structure, and contextualizing by national enrollment statistics in different public health majors. This chapter also explains that the reviews give the bulk of their attention to understanding the health implications of peoples' degree of religiousness/spirituality, rather than attempting to track denominational differences in health status (e.g., Catholic versus Protestant), which may vary over time and are subject to many sources of confounding. The chapter "Questions on Assessing the Evidence Linking Religion/Spirituality to Health", the last chapter in Part I, describes common methods used in the reviews, as well as offering some basic information on the nature of spiritual and religious engagement and their US and worldwide prevalence.

The first substantive review is the chapter "Model of Individual Health Effects from Religion/Spirituality: Supporting Evidence" (this volume). This chapter presents evidence bearing on (and generally supporting) what is sometimes called the "generic model," a framework widely used to conceptualize how religious/spiritual engagement influences individual health through pathways such as improved health behaviors, social support, and the availability of religious/spiritual methods of coping. We also explain how the model relates to what we call "borderline spiritual constructs," factors such as mindfulness and yoga that are often viewed as somehow related to spirituality, and can be pursued in either sacred or secular contexts. It

contains a condensed overview of empirical links between religion/spirituality and morbidity and mortality (Box 1), as well as ideas for application to public health practice (Box 2) that may make this chapter, "Model of Individual Health Effects from Religion/Spirituality: Supporting Evidence," especially useful for course instructors who wish to assign a single general introductory reading that cuts across public health subfields. Readers needing or seeking a more in-depth review of empirical findings on how R/S affects individual morbidity and mortality will find it in the next chapter, chapter "Religious/Spiritual Effects on Physical Morbidity and Mortality".

The fourth chapter in Part I, "Social and Community-Level Factors in Health Effects from Religion/Spirituality" (this volume), strikes out in a new direction that reflects approaches especially distinctive to public health as a community-oriented field. This chapter offers an explicit model of how religion/spirituality as well as other health-protective and health-risk factors may exist at both the level of the community and the level of the individual. Indeed, community-level factors have been a major emphasis of the comparatively new field of social epidemiology (Berkman et al. 2014). This chapter reviews evidence linking community-level measures of religion/spirituality with health outcomes, as well as empirical evidence concerning the somewhat complex relations of religious/spiritual factors with factors of major social epidemiologic interest, including social capital, socio-economic status, income inequality, and social support, as well as crime and violence, and the prospects for multi-level interventions involving R/S factors. The focus on factors of major interest to social epidemiology is continued in the next chapter, "Social Identity and Discrimination in Religious/Spiritual Influences on Health" (this volume).

Most of the remaining chapters in Part I also review R/S-health evidence from the perspective of specific public health subfields. Each chapter's lead author is this volume's editor (Doug Oman), whose major research interest for the past two decades has been R/S-health relations. However, many chapters were coauthored by an expert in the specific subfield, ensuring that the chapter was well-grounded in the subfield's relevant theoretical frameworks and literature. When we first began assembling these review chapters in 2013, we were uncertain about whether our efforts would yield something clearly distinct from other recent reviews, such as the *Handbook* by Koenig et al. (2012). What emerged from our writing surpassed all our expectations. Repeatedly, we found that something important and new emerged when we rose to the challenge of directing our review to the community-oriented emphasis of a public health audience, with its distinctive needs, background, and theoretical orientation.

It is our hope that the various subfield-focused chapters in Part I can serve as important, path-breaking resources for our public health colleagues who, like the authors of these chapters, are scattered across many public health subfields. As discussed in Part III of this volume, we hope that each evidence-focused chapter can be a tool for educators in the corresponding subfield to teach about R/S factors in ways that are evidence-based, theoretically sophisticated, and respectful of diversity (see chapter "Introduction: What Should Public Health Students Be Taught About

Religion and Spirituality?," this volume). Besides social factors (chapters "Social and Community-Level Factors in Health Effects from Religion/Spirituality" and "Social Identity and Discrimination in Religious/Spiritual Influences on Health"), other subfield-oriented reviews focus on environmental health, infectious diseases, nutrition, maternal/child health, health policy and management, public health education, promotion, and intervention, mental health, and clinical practice.

The final review chapter steps back from public health and its subfields, offering instead an extremely broad overview based on a *review of reviews*. When we began preparing these various chapter reviews, we knew that we lacked the resources to independently re-review all of the more than 3000 empirical studies identified by Koenig's *Handbooks*. For feasibility, we realized that we needed to draw heavily on previous reviews conducted by others. To ensure high quality, we wanted to employ, whenever possible, refereed systematic reviews or meta-analyses. Our first step was therefore to prepare a catalogue of available systematic reviews concerning the relation of religion and/or spirituality to other variables of health interest.

What we found astonished us. We identified more than 30 meta-analyses and 100 relevant systematic reviews. Of these, a majority examined the relation of R/S factors to directly health-related variables such as longevity, health behaviors, coping styles, or mental health. We also identified several meta-analyses of randomized interventions (e.g., Worthington et al. 2011). A smaller number of systematic reviews examined relations with variables that we categorized as *indirectly* health-related, such as education (a primary and often highly health-predictive component of socioeconomic status – see, for example, Adler et al. 2013; Winkleby et al. 1992).

To our surprise, informal conversations with colleagues, including many seasoned researchers on spirituality/religion, revealed an almost uniform lack of awareness of the massive number of available systematic reviews. We believe the existence of these reviews is an important testament not only to how much is known about R/S factors, but also to the broad base of the R/S-health field, with the reviewing process itself having benefited from the efforts of hundreds of investigators and dozens of refereed journals, mostly not R/S-specialized, and many with high impact factors. As an aid to future research efforts, the identified reviews are catalogued in chapter ("Weighing the Evidence: What is Revealed by 100+ Meta-Analyses and Systematic Reviews of Religion/Spirituality and Health?," this volume). The chapter also elaborates upon some implications of these reviews, such as their contribution to evidence for a causal relation between religion/spirituality and health.

Part II offers a change of pace, shifting the focus from evidence to practice. It includes two chapters addressed to public health professionals working in health departments or other community-based or governmental health-promotion settings. Each includes an author or co-author with decades of experience in such applied public health work. Faith-health *partnerships* between health professionals and religious organizations are one important recurring theme. The chapter "Implications for Community Health Practitioners: Framing Religion and Spirituality Within a Social Ecological Framework", focused on community public health education, was written by Rabbi Nancy Epstein, MPH, a longtime leader of community-based health promotion efforts in Pennsylvania. Earlier in her career, Rabbi Epstein was a

legislative director of public health policy efforts in Texas, and the chapter also discusses policy advocacy. Similarly, the chapter "Implications for Public Health Systems and Clinical Practitioners: Strengths of Congregations, Religious Health Assets and Leading Causes of Life" was written by Teresa Cutts and Gary Gunderson, who have led efforts in Tennessee and North Carolina, as described in the chapter, to organize partnerships between religious communities and healthcare systems. Cutts and Gunderson have collaborated extensively with similar efforts in Africa.

Part III examines implications for public health *educators*. All chapters were written by public health faculty who have taught about religious/spiritual factors at schools of public health that are members of the Association of Schools and Programs of Public Health (ASPPH). The editor's introductory chapter, "Introduction: What Should Public Health Students Be Taught About Religion and Spirituality?," describes diverse styles, useful strategies, and needed and available resources for integrating R/S factors into academic public health education. The chapter also presents findings from the two recent national surveys, noted earlier, that document widespread perceptions of need for more teaching and improved teaching resources for R/S-health issues.

The remaining Part III chapters each focus on the experience of teaching about religious/spiritual factors in a particular school of public health. Authors were asked to briefly sketch the history of such efforts, as well as convey highlights of their own curricular approaches and achievements, in ways that might be helpful for others considering similar efforts. We hope that public health educators emboldened to undertake improved teaching about R/S factors will find sources of inspiration and guidance in the diverse narratives offered in this part. Like many other public health subfields, there is no standardized approach for teaching about religious/spiritual factors. Readers are free to emulate or adapt whichever approaches they find most engaging or resonant with their own teaching styles, and to reach out to available authors for more information.

Emory University's Rollins School of Public Health is the setting of the chapter entitled "Religion and Public Health at Emory University", by Ellen Idler and Mimi Kiser, perhaps this part's most impressive educational narrative. As they explain, teaching about R/S-health at Emory has benefited from funding through a university-wide strategic initiative, "Where Courageous Inquiry Leads," allowing an interdisciplinary team to establish a center that has taught at least nine different R/S-health courses, many offered through public health (see Table 1 of the chapter "Introduction: What Should Public Health Students Be Taught About Religion and Spirituality?"). Such efforts set a standard and show what is possible when R/S--health topics are prioritized in ways commensurate with their importance.

Other Part III chapters describe R/S-health teaching efforts at many major SPHs across the country, often culminating educationally in one or two courses, and not infrequently in opportunities for students to participate in mentored research or practice. Some chapters describe efforts that were launched recently, whereas others describe decades-old undertakings. These educational offerings reflect diverse pedagogical styles and content emphases that range from ethics to evidence to practice.

The contributions in this section include chapters from Harvard entitled "The Initiative on Health, Religion and Spirituality at Harvard: From Research to Education", from the University of California at Berkeley on "An Evidence-Based Course at U.C. Berkeley on Religious and Spiritual Factors in Public Health", from Boston University on "The Boston University Experience: Religion, Ethics, and Public Health", from the University of Michigan about "Faith Matters: "HBHE 710: Religion, Spirituality and Health" at the University of Michigan", from Drexel University on "Incorporating Religion and Spirituality into Teaching and Practice: the Drexel School of Public Health Experience", and from the University of Illinois at Chicago that describes "Online Teaching of Public Health and Spirituality at University of Illinois: Chaplains for the Twenty-First Century."

Finally, the volume's two concluding chapters attempt to put into perspective the rich material offered in the first three parts on evidence, practice, and education. The chapter on "International and Global Perspectives on Spirituality, Religion, and Public Health" (this volume), was lead-authored by Dr. Liz Grant, director of the Global Health Academy at the University of Edinburgh, Scotland. Noting that the overwhelming majority of R/S-health studies have been conducted in North America, she highlights findings that have received especially high levels of cross-cultural replication, offers snapshots of how R/S-health issues can manifest themselves in various cultures worldwide, especially in the developing world, and discusses the salience of religion and spirituality to the work of international public health organizations, such as the World Health Organization. In the book's final chapter, the editor offers additional overall reflections and suggestions for future directions, advocating positive collaboration, and asserting that even benignly ignoring religion and spirituality is not an acceptable option.

It is the earnest hope of this volume's editor, and surely of most or all of its numerous other contributors, that the importance of religious and spiritual factors for the field of public health will soon become more widely recognized, acknowledged, and acted upon in appropriate ways in education, research and practice. Importantly, the interconnected nature of education, research, and practice means that virtually every reader of this book, whether a public health researcher, academic, practitioner, or student, is in a position to contribute. Each of us can help guide R/S factors to their proper roles in public health by integrating them in appropriate ways into our own research, teaching, practice, conversations with colleagues, and conference presentations. Spiritual and religious factors are not the whole of public health, but they represent an enduring, important, and cross-cutting subfield, a distinctive and powerful perspective, and an enormous and growing research literature that has been hidden in plain sight for too long. We hope that each reader will find sufficient resources in this volume to address these powerful factors in ways optimal for the reader's own context, enabling the reader to make a contribution that is both global and local in its value.

References

Adler, N., Pantell, M. S., O'Donovan, A., Blackburn, E., Cawthon, R., Koster, A., et al. (2013). Educational attainment and late life telomere length in the health, aging and body composition study. *Brain, Behavior, and Immunity, 27*, 15–21. https://doi.org/10.1016/j.bbi.2012.08.014.

Ammerman, N. T. (2013). Spiritual but not religious? Beyond binary choices in the study of religion. *Journal for the Scientific Study of Religion, 52*(2), 258–278. https://doi.org/10.1111/jssr.12024.

Bartkowski, J. P., Xu, X., & Garcia, G. E. (2011). Religion and infant mortality in the U.S.: A preliminary study of denominational variations. *Religions, 2*(3), 264. https://doi.org/10.3390/rel2030264.

Berger, P. L. (1967). *The sacred canopy; elements of a sociological theory of religion*. Garden City: Doubleday.

Berger, P. L. (Ed.). (1999). *The desecularization of the world: Resurgent religion and world politics*. Washington, DC: Ethics and Public Policy Center.

Berkman, L. F., Kawachi, I., & Glymour, M. M. (Eds.). (2014). *Social epidemiology* (2nd ed.). New York: Oxford University Press.

Brudenell, I. (2003). Parish nursing: Nurturing body, mind, spirit, and community. *Public Health Nursing, 20*(2), 85–94. https://doi.org/10.1046/j.1525-1446.2003.20202.x

Campbell, M. K., Hudson, M. A., Resnicow, K., Blakeney, N., Paxton, A., & Baskin, M. (2007). Church-based health promotion interventions: Evidence and lessons learned. *Annual Review of Public Health, 28*, 213–234. https://doi.org/10.1146/annurev.publhealth.28.021406.144016.

Chatters, L. M. (2000). Religion and health: Public health research and practice. *Annual Review of Public Health, 21*, 335–367. https://doi.org/10.1146/annurev.publhealth.21.1.335.

Chida, Y., Steptoe, A., & Powell, L. H. (2009). Religiosity/spirituality and mortality. *Psychotherapy and Psychosomatics, 78*(2), 81–90. https://doi.org/10.1159/000190791.

Cobb, M., Puchalski, C. M., & Rumbold, B. (Eds.). (2012). *Oxford textbook of spirituality in healthcare*. New York: Oxford University Press.

de Jager Meezenbroek, E., Garssen, B., van den Berg, M., van Dierendonck, D., Visser, A., & Schaufeli, W. B. (2012). Measuring spirituality as a universal human experience: A review of spirituality questionnaires. *Journal of Religion and Health, 51*(2), 336–354. https://doi.org/10.1007/s10943-010-9376-1.

Ellison, C. G., Bradshaw, M., & Roberts, C. A. (2012). Spiritual and religious identities predict the use of complementary and alternative medicine among US adults. *Preventive Medicine, 54*(1), 9–12. https://doi.org/10.1016/j.ypmed.2011.08.029.

Emmons, R. A. (1999). *The psychology of ultimate concerns: Motivation and spirituality in personality*. New York: Guilford.

Fetzer, J. E. (1999). *Multidimensional measurement of religiousness/spirituality for use in health research*. Kalamazoo: Fetzer Institute.

Ford, M. E. (1992). *Motivating humans: Goals, emotions, and personal agency beliefs*. Newbury Park: Sage.

Gallup Poll. (2002). Gallup Poll, January 14, 2002, question qn45. http://institution.gallup.com/documents/question.aspx?QUESTION=134971. Accessed 31 Oct 2006.

Hastings, O. P. (2016). Not a lonely crowd? Social connectedness, religious service attendance, and the spiritual but not religious. *Social Science Research, 57*, 63–79. https://doi.org/10.1016/j.ssresearch.2016.01.006.

Hill, P. C., & Hood, R. W., Jr. (Eds.). (1999). *Measures of religiosity*. Birmingham: Religious Education Press.

Hodge, D. R. (2007). The spiritual competence scale: A new instrument for assessing spiritual competence at the programmatic level. *Research on Social Work Practice, 17*(2), 287–295. https://doi.org/10.1177/1049731506296168.

Hummer, R. A., Rogers, R. G., Nam, C. B., & Ellison, C. G. (1999). Religious involvement and U.S. adult mortality. *Demography, 36*(2), 273–285. https://doi.org/10.2307/2648114.

Jaffe, D. H., Eisenbach, Z., Neumark, Y. D., & Manor, O. (2005). Does living in a religiously affiliated neighborhood lower mortality? *Annals of Epidemiology, 15*(10), 804–810. https://doi.org/10.1016/j.annepidem.2004.09.014.

Kapuscinski, A. N., & Masters, K. S. (2010). The current status of measures of spirituality: A critical review of scale development. *Psychology of Religion and Spirituality, 2*(4), 191–205. https://doi.org/10.1037/a0020498.supp.

Kark, J. D., Shemi, G., Friedlander, Y., Martin, O., Manor, O., & Blondheim, S. H. (1996). Does religious observance promote health? Mortality in secular vs religious kibbutzim in Israel. *American Journal of Public Health, 86*(3), 341–346. https://doi.org/10.2105/AJPH.86.3.341.

Koenig, H. G., McCullough, M. E., & Larson, D. B. (2001). *Handbook of religion and health*. New York: Oxford University Press.

Koenig, H. G., King, D. E., & Carson, V. B. (2012). *Handbook of religion and health* (2nd ed.). Oxford/New York: Oxford University Press.

Link, B. G., & Phelan, J. (1995). Social conditions as fundamental causes of disease. *Journal of Health and Social Behavior, 35*(Supp), 80–94. https://doi.org/10.1177/0022146510383498.

Lucchetti, G., Lucchetti, A., & Puchalski, C. (2012). Spirituality in medical education: Global reality? *Journal of Religion and Health, 51*(1), 3–19. https://doi.org/10.1007/s10943-011-9557-6.

Marler, P. L., & Hadaway, C. K. (2002). "Being religious" or "being spiritual" in America: A zero-sum proposition? *Journal for the Scientific Study of Religion, 41*(2), 289–300. https://doi.org/10.1111/1468-5906.00117

Miller, W. R., & Thoresen, C. E. (2003). Spirituality, religion, and health: An emerging research field. *American Psychologist, 58*(1), 24–35. https://doi.org/10.1037/0003-066X.58.1.24.

Oman, D. (2013). Defining religion and spirituality. In R. F. Paloutzian & C. L. Park (Eds.), *Handbook of the psychology of religion and spirituality* (2nd ed., pp. 23–47). New York: Guilford.

Oman, D., & Paranjpe, A. C. (2017). Indian spirituality: How relevant is pargament's framework? *Psychological Studies*, online before print. https://doi.org/10.1007/s12646-017-0412-z.

Oman, D., & Reed, D. (1998). Religion and mortality among the community-dwelling elderly. *American Journal of Public Health, 88*(10), 1469–1475. https://doi.org/10.2105/AJPH.88.10.1469.

Pargament, K. I. (1997). *The psychology of religion and coping: Theory, research, practice*. New York: Guilford.

Pargament, K. I. (2002). The bitter and the sweet: An evaluation of the costs and benefits of religiousness. *Psychological Inquiry, 13*(3), 168–181. https://doi.org/10.1207/S15327965PLI1303_02.

Pargament, K. I. (2013). *APA handbook of psychology, religion, and spirituality (2 vol.) (Vol. 1: Context, theory, and research; Vol. 2: An applied psychology of religion and spirituality)*. Washington, DC: American Psychological Association.

Pargament, K. I., Koenig, H. G., & Perez, L. M. (2000). The many methods of religious coping: Development and initial validation of the RCOPE. *Journal of Clinical Psychology, 56*(4), 519–543. https://doi.org/10.1002/(SICI)1097-4679(200004)56:4<519::AID-JCLP6>3.0.CO;2-1.

Pargament, K. I., Mahoney, A., Exline, J. J., Jones, J. W., & Shafranske, E. P. (2013). Envisioning an integrative paradigm for the psychology of religion and spirituality. In K. I. Pargament, J. J. Exline, & J. W. Jones (Eds.), *APA handbook of psychology, religion, and spirituality (Vol. 1): Context, theory, and research* (pp. 3–19). Washington, DC: American Psychological Association. https://doi.org/10.1037/14045-001.

Puchalski, C. M., Blatt, B., Kogan, M., & Butler, A. (2014). Spirituality and health: The development of a field. *Academic Medicine, 89*(1), 10–16. https://doi.org/10.1097/acm.0000000000000083.

Ross, L. (2006). Spiritual care in nursing: An overview of the research to date. *Journal of Clinical Nursing, 15*(7), 852–862. https://doi.org/10.1111/j.1365-2702.2006.01617.x.

Seeman, T. E., McEwen, B. S., Rowe, J. W., & Singer, B. H. (2001). Allostatic load as a marker of cumulative biological risk: MacArthur studies of successful aging. *Proceedings of the National Academy of Sciences of the United States of America, 98*(8), 4770–4775. https://doi.org/10.1073/pnas.081072698

Selman, L., Harding, R., Gysels, M., Speck, P., & Higginson, I. J. (2011). The measurement of spirituality in palliative care and the content of tools validated cross-culturally: A systematic review. *Journal of Pain and Symptom Management, 41*(4), 728–753. https://doi.org/10.1016/j.jpainsymman.2010.06.023.

Strawbridge, W. J., Cohen, R. D., Shema, S. J., & Kaplan, G. A. (1997). Frequent attendance at religious services and mortality over 28 years. *American Journal of Public Health, 87*(6), 957–961. https://doi.org/10.2105/AJPH.87.6.957.

Swatos, W. H., & Christiano, K. J. (1999). Introduction — Secularization theory: The course of a concept. *Sociology of Religion, 60*(3), 209–228. https://doi.org/10.2307/3711934.

Tillich, P. (1951). *Systematic theology* (Vol. 1). Chicago: University of Chicago Press.

Tuggle, M. B. (2000). *It is well with my soul: Churches and institutions collaborating for public health*. Washington, DC: American Public Health Association.

Van Leeuwen, R., Tiesinga, L. J., Middel, B., Post, D., & Jochemsen, H. (2009). The validity and reliability of an instrument to assess nursing competencies in spiritual care. *Journal of Clinical Nursing, 18*(20), 2857–2869. https://doi.org/10.1111/j.1365-2702.2008.02594.x.

Vieten, C., Scammell, S., Pilato, R., Ammondson, I., Pargament, K. I., & Lukoff, D. (2013). Spiritual and religious competencies for psychologists. *Psychology of Religion and Spirituality, 5*(3), 129–144. https://doi.org/10.1037/a0032699.

Vieten, C., Scammell, S., Pierce, A., Pilato, R., Ammondson, I., Pargament, K. I., et al. (2016). Competencies for psychologists in the domains of religion and spirituality. *Spirituality in. Clinical Practice, 3*(2), 92–114. https://doi.org/10.1037/scp0000078.

Winkleby, M. A., Jatulis, D. E., Frank, E., & Fortmann, S. P. (1992). Socioeconomic status and health: How education, income, and occupation contribute to risk factors for cardiovascular disease. *American Journal of Public Health, 82*(6), 816–820. https://doi.org/10.2105/AJPH.82.6.816.

Worthington, E. L., Hook, J. N., Davis, D. E., & McDaniel, M. A. (2011). Religion and spirituality. *Journal of Clinical Psychology, 67*(2), 204–214. https://doi.org/10.1002/jclp.20760.

Wuthnow, R. (1998). *After heaven: Spirituality in America since the 1950s*. Berkeley: University of California Press.

Zinnbauer, B. J., Pargament, K. I., Cole, B., Rye, M. S., Butter, E. M., Belavich, T. G., et al. (1997). Religion and spirituality: Unfuzzying the fuzzy. *Journal for the Scientific Study of Religion, 36*(4), 549–564.

Part I
Evidence Base

Reviewing Religion/Spirituality Evidence from a Public Health Perspective: Introduction

Doug Oman

Abstract This chapter introduces a set of 13 empirical review chapters contained in Part I of this volume. Each review focuses on relations between religious and spiritual (R/S) factors and health variables. This present chapter explains the reviews' collective purpose, distinctive public health focus, and common structure. The first of these reviews (chapter "Model of Individual Health Effects from Religion/Spirituality: Supporting Evidence") examines evidence that supports a widely used generic model of the effects of R/S on individual health. Next is a review of R/S effects on morbidity and mortality (chapter "Religious/Spiritual Effects on Physical Morbidity and Mortality"). After that, the next two review chapters focus on R/S and social factors, such as socioeconomic status and income inequality (chapter "Social and Community-Level Factors in Health Effects from Religion/Spirituality") and social identity and discrimination (chapter "Social Identity and Discrimination in Religious/Spiritual Influences on Health"). Then, the next seven review chapters examine evidence relevant to major public health subfields: nutrition, infectious diseases, environmental health, maternal/child health, health policy and management, public health education and promotion, mental health, and clinical practice. Drawing on data from the Association of Schools and Programs of Public Health (ASPPH), each subfield is contextualized in relation to proportions of enrolled students in US schools of public health.

Keywords Religion · Spirituality · Public health · Empirical review · Student enrollment · ASPPH · Denomination · Building partnerships

The first major part of this volume offers numerous reviews from a public health perspective of empirical evidence on how religious and spiritual (R/S) factors are associated with physical and mental health. As explained in the introductory chapter ("Elephant in the Room: Why Spirituality and Religion Matter for Public Health",

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this volume), these reviews have been conducted from the perspective of major subfields of public health. The reviews are intended for public health professionals, researchers, and students alike. The reviews' general background was sketched in the previous chapter's section on "Using this Book." The present chapter offers a few additional details to assist readers in navigating these reviews and contextualizing them within public health.

The distinctiveness of these reviews merits a brief recap: Previous publications, such as the monumental medically-oriented *Handbooks* authored by Harold Koenig and his colleagues represent vital resources that succeed in conveying the overall relevance of R/S factors to health, and their implications for specific disease outcomes, such as depression and substance abuse (Koenig et al. 2001, 2012). But public health possesses its own distinctive approaches. Table 1 displays the proportions of public health students who were enrolled in various areas of study in 2013, according to data obtained from the Association of Schools and Programs in Public Health (ASPPH).

The rows of Table 1 correspond fairly well to public health subfields that represent about two-thirds of all enrolled public health students in the US. The table's final column lists the chapter that reviews each subfield. As noted in the table, the subfield of epidemiology is of special relevance to at least three review chapters: Morbidity and mortality outcomes, social and community-level factors, and social identity and discrimination (chapters "Religious/Spiritual Effects on Physical Morbidity and Mortality", "Social and Community-Level Factors in Health Effects from Religion/Spirituality", and "Social Identity and Discrimination in Religious/Spiritual Influences on Health"). In the chapter "Mental Health, Religion, and Spirituality" we review evidence regarding mental health, a topic not reflected in ASPPH statistics, but an important area drawing increasing attention in public health (e.g., Satcher 2000).

The chapter "Model of Individual Health Effects from Religion/Spirituality: Supporting Evidence", which precedes the subfield reviews, is of more general and crosscutting interest. Most contemporary research on R/S-health relations shares a similar conceptual framework, often in this volume called the *generic model*, which specifies plausible causal mediators between R/S and health. This chapter entitled "Model of Individual Health Effects from Religion/Spirituality: Supporting Evidence" reviews evidence supporting the generic model, supplemented by highlights from empirical research that has linked R/S to major morbidity and mortality outcomes (Box 1) intended in part to fortify the chapter's pedagogical utility as a general introduction to the field. At the end of Part I, the last empirical review, the chapter "Weighing the Evidence: What is Revealed by 100+ Meta-Analyses and Systematic Reviews of Religion/Spirituality and Health?", analyzes the 100+ published systematic reviews of R/S-health topics.

In between are 11 subfield review chapters that largely stand on their own. Each provides empirical information that may be useful not only for researchers and students, but for public health practitioners seeking to guide their practical activities, or seeking information to bolster grant applications for applied public health activities – applications that reflect enhanced awareness of religious and spiritual factors.

Table 1 Percentage of students enrolled in selected areas in public health (2013)

Area	Percent of students	Chapter(s) with review
Epidemiology	17.5	Chapters "Religious/Spiritual Effects on Physical Morbidity and Mortality", "Social and Community-Level Factors in Health Effects from Religion/Spirituality" and "Social Identity and Discrimination in Religious/Spiritual Influences on Health"[a]
Environmental sciences	7.6	Chapter "Environmental Health Sciences, Religion, and Spirituality"
Infectious diseases	2.0[b]	Chapter "Infectious Diseases, Religion, and Spirituality"
Nutrition	2.7	Chapter "Public Health Nutrition, Religion, and Spirituality"
Maternal/child health	2.9	Chapter "Maternal/Child Health, Religion, and Spirituality"
Health services administration	19.8	Chapter "Health Policy and Management, Religion, and Spirituality"
Health education / behavioral sciences	15.8	Chapter "Public Health Education, Promotion, and Intervention: Relevance of Religion and Spirituality"
Dual degree program MD/MPH	1.0	Chapter "Clinical Practice, Religion, and Spirituality"
Other[c]	<31.8[d]	–[e]

Note. Statistics calculated from national enrollment numbers in schools and colleges affiliated with the Association of Schools and Programs of Public Health (Burke 5 December 2013 and 29 September 2014, personal communications). Based on 27,802 students enrolled in 47 schools or colleges across 12 program areas.

[a]Chapters "Religious/Spiritual Effects on Physical Morbidity and Mortality" focuses on morbidity and mortality outcomes of general relevance to epidemiology, and chapter "Social and Community-Level Factors in Health Effects from Religion/Spirituality" and "Social Identity and Discrimination in Religious/Spiritual Influences on Health" focus on social and community-level factors of interest in social epidemiology.

[b]Enrollments in infectious disease programs are reported as stable since 1995 at approximately 2–3%.

[c]Other areas include biostatistics, international health, public health practice/program management, "other," and "general."

[d]Based on assuming that those enrolled in dual *degree* programs were also enrolled in a program *area* listed elsewhere in the table. Due to uncertainty about overlap, the precise figure could be anywhere between 30.7 and 31.8.

[e]No statistics were available for possible enrollments in public health programs on mental health (chapter "Mental Health, Religion, and Spirituality").

The chapters vary somewhat in length, mainly as a reflection of the varying quantities of empirical research relevant to each subfield – although a substantial research base exists for every subfield.

Most chapters describe or mention one or more empirical findings regarding health-related differences between religious denominations or traditions. However, for several reasons, denominational differences are not a major focus of the reviews presented in this volume. First, attempts to infer a causative influence from denominational differences onto health outcomes is hampered by the fact that denominational

affiliation is often confounded with socioeconomic status, ethnicity, or other demo-graphic confounders. Perhaps for this reason, remarkably few systematic reviews or meta-analyses present findings regarding denominational differences in health out-comes or health behaviors. Inferences regarding potentially causative denomina-tional differences can also be made more challenging by the dynamic and evolving nature of religious traditions themselves. That is, even as denominations may remain committed to stable creeds and scriptures, how the community perceives the impli-cations of such core commitments for health-related beliefs and behaviors may change or evolve over time (see Q6 in chapter "Questions on Assessing the Evidence Linking Religion/Spirituality to Health", this volume). A related issue is that much heterogeneity exists *within* denominations. Thus, in their studies of HIV in Africa, Trinitapoli and Weinreb (2012, p. 212) reported that denominational differences are generally much less important than "mesolevel" processes that occur within indi-vidual congregations where the "primary social action… takes place." Similarly, based on decades of public health work with religious congregations in the United States, Epstein warns that "'once you've seen one, you've seen one'—meaning that religious communities can vary significantly, sometimes even within the same denomination" (quoted from chapter "Implications for Community Health Practitioners: Framing Religion and Spirituality within a Social Ecological Framework", this volume). Thus Trinitapoli and Weinreb (2012, p. 212) have argued that "moving beyond broad denominational distinctions is essential for developing convincing empirical and theoretical accounts of how religion matters [for] health behaviors" (p. 204). Due to such considerations, as noted in this volume's opening chapter, "Elephant in the Room: Why Spirituality and Religion Matter for Public Health", the vast majority of contemporary research on R/S and health employs multidimensional models that view denomination as only one of many R/S dimen-sions of potential interest.

Yet the paucity of meta-analytic or systematic review findings about denomina-tional differences does not mean that denominational affiliation is never important. Importantly, as noted in the chapter on "Clinical Practice, Religion, and Spirituality" (this volume), US healthcare organizations are increasingly required to administer R/S assessments in a variety of situations. Knowledge of an individual patient's or client's denominational commitments is generally useful (although not sufficient) for providing healthcare that respects individual R/S diversity, as mandated by the ethics codes of many healthcare professions. As aids to such practice, a variety of recent publications have systematically described or catalogued how various R/S traditions view major health-related issues and behaviors (see Box 1, final paragraph).

Finally, it must be acknowledged and affirmed that the R/S-health literature *does* include some instances of research on arguably causative and arguably reasonably stable denominational differences. Box 1 lists various examples of denominational differences that are discussed elsewhere in this volume. Yet due to constraints on interpretability and other issues noted above, we do not attempt to catalogue the numerous reports of denominational differences that lack clear interpretability (for all-inclusive catalogues, see appendices in Koenig et al. 2001, pp. 513–589; Koenig

Box 1: Denominational Differences: Examples of Interpretable Health Behavior Differences, Plus Guidance for Practice

Sometimes health-related differences between religious traditions or denominations may arise from differences in socioeconomic status, ethnicity, or other demographic sources of confounding. But on some occasions, health-related denominational differences may arise from deeper sources, such as differences related to theological and philosophical beliefs, or the practices directly motivated by those beliefs. For example, some traditions may teach that there is sacred value in adhering to vegetarianism or other specific diets, or in fasting during Ramadan. From a social scientific perspective, such dietary practices may be said to have become sanctified in the perception of the community (Mahoney et al. 2005; Murray-Swank et al. 2005).

Examples of interpretable differences between religious groups include:

- Vegetarian diets among Seventh Day Adventists, viewed as a contributor to exceptonal longevity (see chapter "Public Health Nutrition, Religion, and Spirituality", this volume; Tan et al. 2013);
- Ramadan fasting among Muslims, which has been linked to favorable lipid profiles (see chapter "Public Health Nutrition, Religion, and Spirituality", this volume; Salim et al. 2013);
- Pledges of sexual abstinence by adolescents have been encouraged in some Evangelical Christian denominations, with seemingly mixed impacts on sexual risk behaviors (see chapter "Maternal/Child Health, Religion, and Spirituality") this volume; Burdette et al. 2015);
- Community social engagement, which arguably differs between Christian denominations due to differences in theological emphasis: Higher mortality rates have been observed among fundamentalist groups that espouse a more insular and "otherworldly theology," arguably leading to deficits of longevity-promoting coommunity engagement (see chapter "Social and Community-Level Factors in Health Effects from Religion/Spirituality", this volume; Blanchard et al. 2008, p. 1610).

Some texts have helpfully discussed, catalogued, or occasionally even tabulated attitudes among various religious traditions regarding various types of health-related issues or behaviors, such as diet, alcohol and/or other drugs, sexual behavior, and suicide (Cobb et al. 2012; Hollins 2009; Richards 2014). Such catalogues must be used in ways that avoid stereotyping and are sensitive to individual differences, since many people do not adhere to the official teachings or practices of their denomination or tradition.

et al. 2012, pp. 607–963). Rather, as noted earlier, our reviews give the largest share of their attention to findings potentially generalizable across multiple denominations and traditions, especially findings on how health variables relate to an individual's *degree of religiousness/spirituality*. An overview of the wide range of constructs and measures that reflect degree of religiousness/spirituality is available elsewhere in this volume (see Q9 and Table 1 in chapter "Questions on Assessing the Evidence Linking Religion/Spirituality to Health").

Most Part I chapters follow a similar sequential structure:

(a) A brief conceptual introduction that also situates the subfield within public health;
(b) A half dozen or more specific topic discussions and/or literature reviews, set off by *bolded run-in headers*;
(c) Some brief suggestions for application to public health practice, which appear in a separate text box;
(d) A summary of key ideas or findings, *similar in function to an abstract*.

The suggested ideas for applications (item c above) are brief and intended to complement the in-depth discussion elsewhere in this volume (see Part II) of the relevance of R/S factors to public health practice. Several recurring themes appear in the suggested applications that are supplied in the text boxes in the various Part I review chapters. Many suggestions build on the importance of *partnerships* between health professionals and religious groups, a principle also emphasized in the Part II chapters in this volume. For successfully launching or maintaining such partnerships, it is helpful for public health professionals to start with balanced and non-stereotyped larger views of conditions in religious communities in general. For example, many health factors are favorably associated with religious/spiritual involvement, but various other health factors show mixed associations. In addition, however, those pursuing partnerships *must* maintain an open mind, recognizing that each religious community is unique. Recurring suggestions for practical public health application therefore include injunctions to become both active and oriented:

• Consider *partnering* with religious/spiritual organizations to work together on health issues (e.g., general collaboration, chapters "Health Policy and Management, Religion, and Spirituality" and "Public Health Education, Promotion, and Intervention: Relevance of Religion and Spirituality"; community environment, chapter "Environmental Health Sciences, Religion, and Spirituality"; infectious diseases, chapter "Infectious Diseases, Religion, and Spirituality");
• Be aware and acknowledge that *primarily favorable associations* with religion/spirituality are well-documented for numerous specific health factors (e.g., mortality and most types of morbidity, chapter "Religious/Spiritual Effects on Physical Morbidity and Mortality"; birthweight. maternal well-being, and most adolescent health behaviors and outcomes, chapter "Maternal/Child Health, Religion, and Spirituality"; quality of life, and psychosocial well-being, chapter "Clinical Practice, Religion, and Spirituality");

- Be aware and acknowledge that *mixed associations* with religion/spirituality are well-documented for other specific health factors, so that conditions may vary between communities (e.g., overweight status, chapter "Model of Individual Health Effects from Religion/Spirituality: Supporting Evidence"; discrimination, chapter "Social Identity and Discrimination in Religious/Spiritual Influences on Health"; environmental attitudes, chapter "Environmental Health Sciences, Religion, and Spirituality"; nutritional status, chapter "Public Health Nutrition, Religion, and Spirituality"; immunization rates, chapter "Maternal/Child Health, Religion, and Spirituality");

Health professionals should also be aware of *distinctive health-relevant processes*, such as R/S methods of coping, that are available to religious/spiritual communities and individuals:

- Support communities and individuals in drawing positively on religious and spiritual resources (e.g., religious/spiritual methods of coping with stress, chapters "Model of Individual Health Effects from Religion/Spirituality: Supporting Evidence", "Social Identity and Discrimination in Religious/Spiritual Influences on Health"; environmentally-supportive teachings, chapter "Environmental Health Sciences, Religion, and Spirituality");

Partnerships and interventions at the community or interpersonal level have also generated an empirical research base in a few areas. Additional recurring themes therefore include

- When available, draw guidance from empirical research or case reports on applications involving religion/spirituality (e.g., cultural or spiritual infusion, chapters "Public Health Nutrition, Religion, and Spirituality", "Public Health Education, Promotion, and Intervention: Relevance of Religion and Spirituality" and "Clinical Practice, Religion, and Spirituality"; meditation/mindfulness, chapters "Public Health Education, Promotion, and Intervention: Relevance of Religion and Spirituality" and "Mental Health, Religion, and Spirituality"; clergy networks, chapter "Social and Community-Level Factors in Health Effects from Religion/Spirituality"; overweight interventions, chapter "Public Health Nutrition, Religion, and Spirituality"; levels of collaboration, chapter "Public Health Education, Promotion, and Intervention: Relevance of Religion and Spirituality");

Finally, health professionals may draw upon a variety of resources for enhancing their own or their organization's competencies, or bringing their organization in compliance with best practices, regulations, and laws:

- Draw upon resources to improve individual or organizational adherence to regulations and best practices (e.g., staff training and regulatory compliance, chapters "Health Policy and Management, Religion, and Spirituality" and "Mental Health, Religion, and Spirituality"; implementing required R/S assessments, chapter "Clinical Practice, Religion, and Spirituality"; professional self-care interventions, chapter "Clinical Practice, Religion, and Spirituality").

Questions about the reviews' collective methods, limitations, coverage of ethical issues, and other recurring themes are addressed in the final Part I chapter, which is entitled "Questions on Assessing the Evidence Linking Religion/Spirituality to Health." This chapter contains much material often given in a methodological appendix. In addition, and especially for those new to studies of religion/spirituality, this final Part I chapter offers further background on the overall R/S-health field, addressing questions on the nature and multidimensionality of religion/spirituality, and the numbers of people who engage in them nationally and worldwide.

Without further ado, we encourage the reader to proceed to the empirical reviews that begin in the next chapter.

References

Blanchard, T. C., Bartkowski, J. P., Matthews, T. L., & Kerley, K. R. (2008). Faith, morality and mortality: The ecological impact of religion on population health. *Social Forces, 86*(4), 1591–1620. https://doi.org/10.2307/20430822.

Burdette, A. M., Hill, T. D., & Myers, K. (2015). Understanding religious variations in sexuality and sexual health. In J. DeLamater & R. F. Plante (Eds.), *Handbook of the sociology of sexualities* (pp. 349–370). Cham: Springer.

Burke, E.M. (5 December 2013 and 29 September 2014, personal communications), personal email communication from Emily M. Burke to Doug Oman.

Cobb, M., Puchalski, C. M., & Rumbold, B. (Eds.). (2012). *Oxford textbook of spirituality in healthcare*. New York: Oxford University Press.

Hollins, S. (2009). *Religions, culture, and healthcare: A practical handbook for use in healthcare environments*. Oxford/New York: Radcliffe Publishing.

Koenig, H. G., McCullough, M. E., & Larson, D. B. (2001). *Handbook of religion and health*. New York: Oxford University Press.

Koenig, H. G., King, D. E., & Carson, V. B. (2012). *Handbook of religion and health* (2nd ed.). Oxford/New York: Oxford University Press.

Mahoney, A., Carels, R. A., Pargament, K. I., Wachholtz, A., Leeper, L. E., Kaplar, M., et al. (2005). The sanctification of the body and behavioral health patterns of college students. *The International Journal for the Psychology of Religion, 15*(3), 221–238. https://doi.org/10.1207/s15327582ijpr1503_3

Murray-Swank, N. A., Pargament, K. I., & Mahoney, A. (2005). At the crossroads of sexuality and spirituality: The sanctification of sex by college students. *The International Journal for the Psychology of Religion, 15*(3), 199–219. https://doi.org/10.1207/s15327582ijpr1503_2

Richards, P. S. (2014). *Handbook of psychotherapy and religious diversity*. Washington, DC: American Psychological Association.

Salim, I., Al Suwaidi, J., Ghadban, W., Alkilani, H., & Salam, A. M. (2013). Impact of religious Ramadan fasting on cardiovascular disease: A systematic review of the literature. *Current Medical Research and Opinion, 29*(4), 343–354. https://doi.org/10.1185/03007995.2013.774270.

Satcher, D. (2000). Mental health: A report of the surgeon general—executive summary. *Professional Psychology: Research and Practice, 31*(1), 5–13. https://doi.org/10.1037/0735-7028.31.1.5.

Tan, M.-M., Chan, C.K.Y., & Reidpath, D.D. (2013). *Religiosity and spirituality and the intake of fruit, vegetable, and fat: A systematic review*. Evidence Based Complementary and Alternative Medicine, 2013, 146214, https://doi.org/10.1155/2013/146214.

Trinitapoli, J. A., & Weinreb, A. (2012). *Religion and AIDS in Africa*. Oxford/New York: Oxford University Press.

Model of Individual Health Effects from Religion/Spirituality: Supporting Evidence

Check for updates

Doug Oman

Abstract This chapter is the first of thirteen reviews in this volume providing a public health perspective on the empirical evidence relating religion and spirituality (R/S) to physical and mental health. This chapter emphasizes an essentially e*pidemiologic* perspective, reviewings evidence bearing on a "generic" model of how an individual's engagement in religion/spirituality may causally affect that individual's health through pathways that include health behaviors, social connections and support, ability to draw upon distinctively religious/spiritual methods of coping, and mental health. In US-based and often in international and non-Western samples, R/S factors tend to correlate with healthier profiles on social connections, health behaviors, substance abuse, mental health, and psychological well-being. R/S coping is multidimensional and adds incremental predictiveness beyond measures of secular coping. Hundreds of studies link positive R/S coping to better adjustment, and negative forms of R/S coping to worse adjustment.

R/S factors tend to correlate favorably with conscientious personality, although causal direction remains uncertain. R/S is also positively correlated with diverse health-related character strengths that include forgiveness, kindness/prosociality, and hope.

This chapter also discusses various additional constructs often suggested for interpretation of R/S-health linkages. We conceptually disaggregate empirical evidence on prayer into evidence regarding effects on the person praying (the pray-er) and effects on the prayed-for person (pray-ee). We also note evidence for health linkages of "borderline spiritual constructs" such as meditation, mindfulness, and yoga, which exist in both spiritual and non-spiritual forms. Only a small number of studies have examined linkages between R/S and mindfulness, with several reports of positive associations.

Keywords Religion · Spirituality · Public health · Health behavior · Social support · Mental health · Religious coping · Substance abuse · Personality · Prayer

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Most health research has focused on individual risk factors and outcomes. Similarly, most research on relations between religious and spiritual (R/S) factors and health outcomes has focused on individual-level measures of both R/S and health. By 2010, more than 3000 published empirical studies had examined R/S-health relations (see chapter entitled "Elephant in the Room: Why Spirituality and Religion Matter for Public Health," this volume), finding that greater engagement with religion/spirituality was most commonly, although not uniformly, tied to greater longevity, better health and less disease across most major morbidity and mortality outcomes (see Box 1 for overview/highlights).

Box 1: Overview of Empirical Findings on Relation of Religion/ Spirituality to Mortality and Physical Morbidity

More than 3000 empirical studies have examined relations between religious/ spiritual factors and health. These studies have been systematically reviewed by Koenig et al. (2012) and main findings and patterns are examined in the present volume's chapter entitled "Religious/Spiritual Effects on Physical Morbidity and Mortality." For mortality:

- Dozens of studies have examined relations between R/S and longevity, finding generally protective effects against all-cause mortality in healthy populations, and a meta-analytically estimated 18% lower risk of death for individuals who were religiously/spiritually engaged (Hazard Ratio [HR] = 0.82, 95% CI = 0.76 − 0.87, p < 0.001, based on k = 44 studies){, +}(Chida et al. 2009).

A preponderance of studies of morbidity have also reported that R/S factors are associated with lower rates of heart disease, cancer, pulmonary disease, dementia, and disability, as well as with better risk profiles on physiological measures for hypertension, cardio reactivity, inflammation, and cholesterol. Among studies with higher methodological quality ratings:

- Of 16 heart disease studies, 10 (63%) reported that R/S factors were linked to significantly less disease, 1 (6%) reported links to more disease, and other studies reported mixed or null findings (3 and 2 studies, respectively);
- Of 40 hypertension studies, 26 (65%) reported that R/S factors were linked to significantly less hypertension, 5 (13%) reported links to more hypertension, and other studies reported mixed or null findings (1 and 8 studies, respectively);
- Of 10 cancer studies, 6 (60%) reported that R/S factors were linked to significantly less disease, 0 (0%) reported links to more disease, and other studies reported mixed or null findings (0 and 5 studies, respectively).
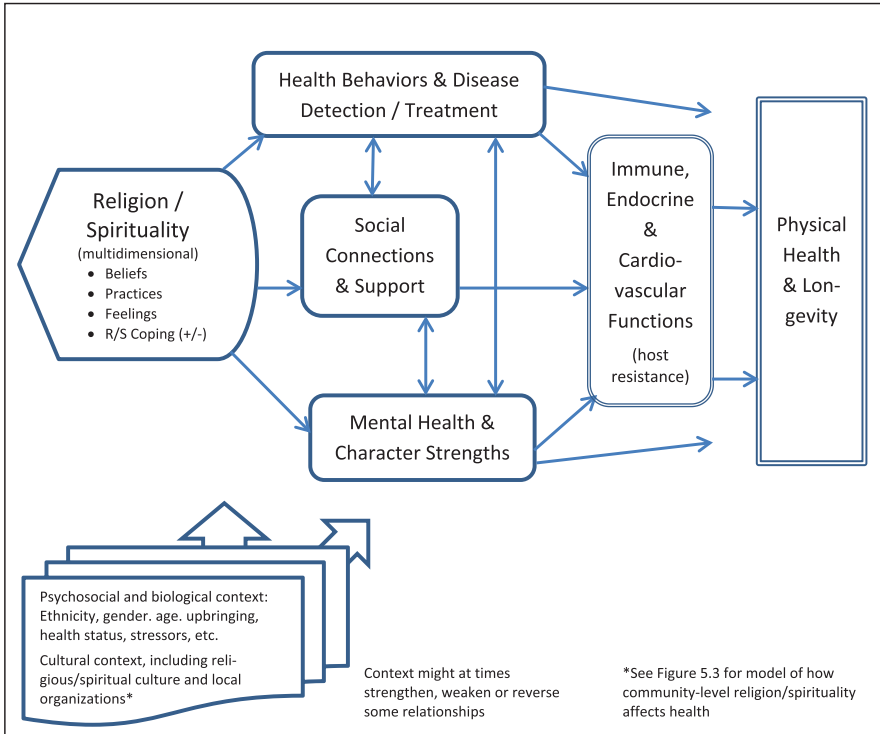
Fig. 1 Model of major causal effects of individual religion/spirituality on physical health

    Implicit in many if not most of these empirical studies has been what might be called an individual-level "generic model," which is graphically presented in Fig. 1. Similar models have been offered elsewhere for many years (e.g., Koenig et al. 2001, 2012; Oman and Thoresen 2002, 2007a).

    The mediating pathways proposed in the generic model in Fig. 1 include health behaviors, social support, and mental health. In Fig. 1, the three arrows emerging from religion/spirituality (the box on the far left) represent the theorized causal influence that R/S engagement may exert on these three theorized mediating factors. Double-headed arrows between each pair of mediators represent the fact that an individual's levels of health behaviors, social connection, and mental health, may frequently exert mutual causal influence by fostering or (less often) undermining the conditions for each other's development. The rightward-pointing arrows that emerge from these mediating factors indicate that they in turn are theorized to causally affect physical health. Such causal influence may be direct (e.g., reducing exposure to pathogens or preventing self-harming behaviors), or may be causally mediated by host resistance (e.g., box in figure representing immune, endocrine, and cardiovascular functioning), often described more technically as resilience under allostatic load (Seeman et al. 2001; see also section on "Q12: How Do Religion/Spirituality and Stress 'Get Into the Body'?" in this volume's chapter, "Questions on Assessing the Evidence Linking Religion/Spirituality to Health").

Religious and spiritual methods of coping are pictured in Fig. 1 as a component of R/S (left-hand box in figure). The use of R/S methods of coping could also be regarded as a mediator between other dimensions of R/S – such as R/S beliefs and practices – and widely acknowledged health factors such as health behaviors, social support, and mental health.[1] Contextual factors such as demographics and culture are represented in the figure's lower-left box, and could potentially either confound R/S-health relations or serve to modify (or "moderate") the magnitude or even direction of many of the causal relations shown in the model. An example of one way that this generic model has been applied in practice is presented in Box 2, which focuses on a well-known US nationally representative study of attendance at religious worship services and longevity.

This chapter reviews a wide array of key information that is needed for an *epide-miologic* approach to understanding religion and spirituality as health factors. The chapter outlines the theoretical rationale for major components of the Fig. 1 generic model. It also reviews evidence that supports major pathways, sometimes referring to other chapters in this book that supply further details. Elsewhere, the chapter on social factors ("Social and Community-Level Factors in Health Effects from Religion/Spirituality," this volume) reviews evidence and discusses theories of the health implications of community-level religious and spiritual variables, such as the degree to which a neighborhood is permeated by religious culture or populated by religious people (e.g., Dwyer et al. 1990; Jaffe et al. 2005).

While the model in Fig. 1 was developed primarily in Western cohorts, it may have some degree of cross-cultural relevance (for further discussion see chapter on "International and Global Perspectives on Spirituality, Religion, and Public Health," this volume). Accordingly, the following discussion of empirical evidence, while generally relying on previous reviews, also directs special attention to non-US and non-Western research, sometimes citing or highlighting individual examples of non-US studies, thereby facilitating inquiry and evaluation of the model's international relevance.

The evidence reviewed in the present individually-focused chapter is organized into four major sections. First, we examine how R/S as a whole has been linked to well-recognized potential mediating factors that include social connections, substance abuse, other addictive behaviors, mental health, psychological well-being, and personality traits. In the next two sections, we turn the spotlight on distinctive R/S dimensions that may be viewed as health factors: R/S coping and prayer/meditation. Finally, the fourth and final section discusses the implications and evidence base for what we call "borderline constructs" that exist in both secular and spiritual/religious forms. We argue that such borderline constructs, which include mindfulness, meditation, and yoga postures, are indeed relevant to understanding effects from spirituality/religion, but should not be viewed as inherently spiritual or religious. In each of these four sections we offer conceptual and theoreti-

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[1] To avoid excess complexity, we have omitted the graphical representation of causal influences *between* various R/S dimensions, although discussion of such causal influence is available elsewhere (e.g., Oman and Thoresen 2007b; Thoresen et al. 2005).

Box 2: Illustrative Example of Using the Generic Model in Empirical Research: National Longevity Study

A well-known study by Hummer et al. (1999) published in *Demography* illustrates how the generic model for individual health effects has been used in research. These investigators examined how frequency of attendance at religious worship services could predict mortality over 8 years in a nationally representative sample of US adults (n = 21,204). Consistent with the Fig. 1 Generic Model's concept that protective effects could be more powerful in some subgroups, the investigators noted that whereas in the overall population, more frequent attendance was linked to an additional 7.6 years of life, among African Americans, more frequent attendance was "most strikingly" linked to "nearly a 14-year [longevity] advantage" (pp. 277–278).

Next, the investigators applied a sequence of multivariate proportional hazards regression models to the entire sample to estimate the relative hazard of death associated with frequency of attending services. Their first few models adjusted for three classes of potential confounding variables, represented in Fig. 1 by the lower left box labeled "psychosocial and biological context": demographic factors (age, gender, race, region of residence), socioeconomic status (income, education), and baseline health status (activity limitations, bed days, self-rated health). After these adjustments, *never* attending services remained linked to a 72% elevated risk of mortality, compared to those who attended most frequently (hazard ratio [HR] = 1.72, $p < 0.01$).

Subsequent multivariate models probed whether various mediating factors identified in the generic model could explain this elevated risk. The hazard of death associated with never attending services remained elevated after additional adjustments for measures of social ties including marital status, social activities, friends, and relatives (HR = 1.61), measures of health behaviors including smoking, alcohol, and weight-for-height (HR = 1.57), or all of these potential mediators together (HR = 1.50, $p < 0.01$).

The investigators interpreted their estimates as indicating "that differences in mortality by religious attendance are similar in magnitude to those by sex and race," and that "inclusion of social ties and behavioral variables… illustrated that at least part of the linkage between religious involvement and mortality is due to these two sets of mediating factors." They concluded that "Nevertheless, a strong association between infrequent or no religious attendance and higher mortality risk persisted… even after we controlled for all of the independent variables. Thus, future work should explore how other mediating effects, such as stress, coping resources, and other health behaviors, may work to link religious involvement with mortality" (p. 283).

cal introductions to core constructs and summaries of key evidence, at times noting
other chapters where topics are discussed in greater detail. Readers are encouraged
to use the chapters in ways that match their needs. Novice readers seeking an initial
introduction and overview of major R/S-health concepts and findings may wish to
examine Box 1 and then concentrate on the first two sections below on established
health factors and R/S coping, as well as the concluding summary section.
Experienced readers with prior familiarity with the R/S field may wish to read the
first two sections for an up-to-date overview of the expanding evidence base, and
turn to sections on prayer and borderline constructs to obtain terminology, concep-
tual analyses, and we hope valuable clarification that is all too seldom available
elsewhere in the literature.

1 How Religiousness/Spirituality Affects Established Health Factors

Social Connections and Support One of the commonly accepted major mediators
between R/S and health is social connections (Fig. 1). The proposition that religious
involvement fosters social connections has never been controversial. One of the
founders of modern sociology, Émile Durkheim (1995/1912), viewed the forging of
social connections as a primary function of religion. Without feeling a need for
much explanation, some of the earliest studies that documented the predictiveness
of social connections for health incorporated a measure of attendance at religious
services into a summary measure of social connections (Berkman and Syme 1979).

Nonetheless, there is now an empirical research base that has documented rela-
tionships between various R/S dimensions and several dimensions of social net-
works and social support. Koenig et al. (2012, pp. 303, 306, 687–693) identified 20
studies of R/S and social support published before 2000, and at least 54 additional
studies published from 2000 to 2009, with the vast majority (61 of 74, or 82%)
showing significant positive relationships. Most of these were in the US or Western
Europe, but a small number investigated Asian populations, showing largely similar
patterns (e.g., Kuwait and Taiwan, Al-Kandari 2003; Heppner et al. 2006). Of seven
longitudinal studies since 2000, five reported that baseline R/S predicted increased
social support over time, including one study that followed participants for 29 years
(Strawbridge et al. 2001). Similarly, Koenig et al. (2012, pp. 691–693) identified 14
studies of R/S and social capital, measured as "degree of community participation,
volunteerism, social trust, reciprocity, and membership in community-based, civic,
political, or social justice organizations" (p. 306). Of these, 11 (79%) reported sig-
nificant positive associations with R/S, including one report of a seven-year pro-
spective study of adolescents (n = 15,197, Glanville et al. 2008). Of two non-Western
studies, a significant positive relation was found in Korea, and null findings were
reported in Turkey (Kim et al. 2007; Özbay 2008). Finally, Koenig et al. (2012,
pp. 256–271, 787–790) identified 40 studies since 2000 that examined R/S and

marital stability, of which 32 (80%) found R/S factors linked to greater marital stability, often viewed as a source of salutary social support.

Health Behaviors: General Considerations and Types   Much evidence links religious/spiritual engagement to better health behaviors, and there is reason to believe that this is not accidental. Most R/S traditions emphasize the ideal of a selfless love of God or of one's fellow human beings (e.g., "love thy neighbor as thyself," Matthew 22:39, KJV). From such a perspective, an individual human body possess value as an instrument of service to a person's family, community, or God. Thus, many R/S traditions have taught a stewardship perspective, in which the body is viewed as a sacred instrument for service to God, and such sacred perceptions of the body have been linked to healthier behavior (Mahoney et al. 2005; Homan and Boyatzis 2010). For such reasons, health behaviors are commonly accepted as another major mediator between individual R/S and individual physical health (Fig. 1).

At the community level, too, religious traditions have endorsed dietary and other norms that often function to foster health (e.g., kosher, halal, Tieman and Hassan 2015). By mobilizing an entire community, such norms can foster favorable synergies that offer further health benefits (e.g., herd immunity, Fine 1993). But a potential disadvantage of sanctified community norms is that even if such norms were healthy in the historical period when they were first formulated, etiologic circumstances may change, or the norms may be extrapolated by the community to circumstances in which their original salutary dynamics fail to operate. Over time, corrections may occur that realign sacred perceptions with objectively salutary behavior, but such corrections require time (see also chapters in this volume entitled "Social and Community-Level Factors in Health Effects from Religion/Spirituality" and "Social Identity and Discrimination in Religious/Spiritual Influences on Health"). Such theoretical considerations suggest that R/S involvement may most commonly be associated with better health behaviors, but unfavorable inverse associations may also at times be observed. As long as such conditions persist and are not corrected by community reinterpretations of what is sacred, religious norms can function as adverse influences on individual and community health (e.g., May and Silverman 2003).

Considerable evidence supports this model. Evidence links R/S involvement to lower rates of substance abuse and addiction-related behaviors such smoking and heavy drinking, as well as to better nutrition, greater exercise, and greater usage of preventive health services. Such salutary relations have been supported in studies of adults in the general population. Overall patterns of R/S-health behavior relations among adolescents are similar to those of adults, and the supporting evidence has been summarized elsewhere (see chapter entitled "Maternal/Child Health, Religion, and Spirituality," this volume).

On the negative side, unfavorable R/S-health behavior relations have sometimes been documented in specific religious groups with distinctive beliefs (such as avoidance of vaccines or physicians) (Grabenstein 2013; Gevitz 1991). A smaller number of health behavior indicators have frequently shown negative associations with R/S

variables. The most prominent unfavorable findings include linkages between religion and overweight/obesity (see below and chapter on "Public Health Nutrition, Religion, and Spirituality," this volume).

For purposes of this review, evidence on substance abuse and addictive behaviors will be deferred to a later subsection. Here, we summarize evidence for relations between R/S and a wide range of commonly studied health behaviors. We draw heavily on Koenig et al. (2012, pp. 532–556, 880–889, 898–905) who catalogued 198 such studies since 2000.

Nutritional research indicates that R/S shows generally favorable associations with some key behaviors, such as fruit and vegetable intake, but shows mixed associations with overweight status and eating disorders (see chapter, "Public Health Nutrition, Religion, and Spirituality," this volume; Tan et al. 2013; and see Koenig et al. 2012, pp. 883–886 for diet, 886–889 for weight).

Health services utilization research indicates that R/S shows generally favorable associations with higher rates of immunization and screening and adherence to several types of medical treatments, although unfavorable associations are sometimes found in distinctive religious or cultural groups (see chapter on "Health Policy and Management, Religion, and Spirituality," this volume; see Koenig et al. 2012, pp. 562–567, 906–911 for screening, pp. 569–572, 913–916 for adherence).

For exercise and physical activity, Koenig et al. (2012, pp. 536–538, 880–883) identified 32 post-2000 studies of R/S involvement and exercise, of which most (n = 22, 69%) reported a positive correlation, and very few (n = 5, 16%) showed a negative correlation, and even fewer (n = 2) reported mixed findings. Among physical activity studies with higher quality ratings, most (14/18) also reported positive R/S associations. Most of these studies were conducted in the US, although one study also documented a favorable trend among adults in Athens, Greece (n = 250, p = 0.09, Chliaoutakis et al. 2002). However, some studies in Israel have linked religiousness among Jews to less exercise (e.g., Baron-Epel et al. 2005, n = 5741, Odds Ratio [OR] = 1.12, p < 0.01).

For general safety behaviors, such as seat-belt usage, Koenig et al. (2012, pp. 551–552, 903) identified 2 pre-2000 and 3 post-2000 studies that examined relations of R/S engagement to safety behaviors, all of which found R/S correlated with safer behaviors. These included higher rates of seatbelt usage found statewide in Texas among community-dwelling adults (n = 1504, OR = 2.20, Hill et al. 2006), and in a national sample of high school students (n = 4052, Wallace and Forman 1998).

For sleep quality, Koenig et al. (2012, pp. 552–553, 904–905) identified 2 pre-2000 and 9 post-2000 studies that examined relations of R/S to sleep, of which about one-third (n = 4, 36%) reported favorable relations, one reported unfavorable relations, and two reported mixed findings.

For risky sexual activity, Koenig et al. (2012, pp. 547–581, 898–902) identified 57 post-2000 studies, of which most (n = 45, 79%) reported that R/S involvement was linked to less risky sexual activity, and this proportion was similar among the higher quality studies (29/36, 81%). Protective associations have been reported in US national samples of adolescents as well as adults (i.e., Atkins et al. 2001;

Nonnemaker et al. 2003; Whisman et al. 2007). Protective associations have also been reported in societies that include Australia, Slovakia, the Caribbean, Iran, Israel, Kenya, Malawi, and Nigeria (for references see Koenig et al. 2012, pp. 898–902).

Health Behaviors: Substance Abuse and Addictive Behaviors Substance abuse is a topic of ongoing interest in public health (e.g., Babor et al. 1996; Johnson et al. 2010). Much substance abuse reflects addictive behaviors that can be accompanied by various types of social or employment dysfunction. In some contexts, substance abuse is classified as a mental health problem (e.g., Koenig et al. 2012). Some types of substance-related addictive behaviors, such as tobacco smoking, although accompanied by less social dysfunction, nevertheless reflect the psychology of addiction.

Cigarette smoking is one of the most highly studied addiction-related behaviors. Koenig et al. (2012, pp. 544–547, 889–898) identified 110 post-2000 studies of the relation between degree of R/S involvement and smoking, of which the overwhelming majority (n = 98, 89%) found that R/S was related to significantly less smoking, and one reported mixed findings. Of prospective studies, most (11/16, 69%) found that greater baseline R/S predicted less likelihood of starting smoking and/or a greater likelihood of quitting. Favorable associations have been reported in many US nationally representative samples (e.g., Degenhardt et al. 2007; Nonnemaker et al. 2006). Findings linking R/S to less smoking have also been reported from all around the world, including Poland, Central America, Mexico, Iran, Israel, Lebanon, and South Africa (for references, see Koenig et al. 2012, pp. 889–898). Evidence from sub-Saharan Africa also indicates that Christians and Muslims each smoke less than a residual group that combined those with no religion and those with traditional or local religions (n = 202,001, Pampel 2008).

For alcohol use/abuse/dependence, Koenig et al. (2012, pp. 229–233, 753–769) identified 94 pre-2000 and 184 post-2000 studies examining how the level of R/S related to alcohol use. Of the post-2000 studies, 154 (85%) found R/S associated with less alcohol use/abuse, one found R/S associated with more use/abuse, and 5 (3%) reported mixed findings. Of 39 prospective studies, 33 (85%) found that baseline R/S predicted lower levels of future alcohol use/abuse, and no association was found in the other 6 studies. US nationally representative studies have reported protective associations among both adolescents and adults (Ellison et al. 2008; Harris et al. 2006; Trinkoff et al. 2000; Regnerus and Elder 2003; Wallace et al. 2007). Studies documenting favorable relations have been reported from non-US locations that include Canada, Australia, Finland, Hungary, Poland, Spain, the United Kingdom, Brazil, the Caribbean, Central America, Mexico, Israel, Lebanon, Turkey, Thailand, and South Africa (for references see Koenig et al. 2012, pp. 753–769).

Similarly, for drug use/abuse/dependence, Koenig et al. (2012, pp. 233–236, 769–780) identified 55 pre-2000 and 130 post-2000 studies of how R/S level relates to drug use. Of the post-2000 studies, 105 (81%) found R/S associated with less drug use, one found greater drug use, and 4 (3%) reported mixed findings. Of 28 prospective studies, 26 (93%) found that baseline R/S predicted lower levels of future drug use/abuse, and no association was found in the other 2 studies. US

nationally representative studies have reported protective associations among both adolescents and adults (Agrawal and Lynskey 2009; Brown et al. 2001; Regnerus and Elder 2003). A few studies documenting favorable relations have been reported from non-US locations that include Canada, Australia, Hungary, Central America, and South Africa (for references see Koenig et al. 2012, pp. 769–780).

For all age groups, Chitwood et al. (2008) systematically reviewed studies of R/S and substance abuse, finding that one or more R/S dimensions were significantly protective in 99 of the 105 identified empirical studies. Of 410 tested associations of R/S with substance use, 247 (60.2%) were protective, 158 (38.5%) were non-significant, and 5 (1.2%) were unfavorable.

For adolescents, Yeung et al. (2009) meta-analyzed 22 studies of youth substance abuse, finding an overall inverse correlation ($r = -0.16$), significant regardless of the definitions of religiosity, with significant protection against use of cigarettes ($r = -0.18$), alcohol ($r = -0.16$), marijuana ($r = -0.14$), and other drugs ($r = -0.18$) (see also chapter on "Maternal/Child Health, Religion, and Spirituality," this volume).

Finally, the efficacy of various R/S-oriented *interventions* for drug and alcohol abuse has been supported by systematic reviews. Participation in Twelve-Step Fellowships (e.g., Alcoholics Anonymous) has been linked to reduced substance abuse, although a recent meta-analyses found little evidence supporting spirituality as a mechanism of change (Kelly et al. 2009; Ferri et al. 2006). Mindfulness-oriented interventions for reducing substance abuse have also been systematically reviewed, with 24 studies, some of which employed a explicitly spiritual orientation, yielding evidence for significantly reduced consumption of alcohol, cocaine, amphetamines, marijuana, cigarettes, and opiates when compared to waitlist controls, nonspecific educational support groups, or specific control groups (Chiesa and Serretti 2014) (see also de Souza et al. 2015). Some studies found that increased measures of spirituality were associated with reduced drug use and improved motivation for abstinence, HIV prevention and adherence to medications. Earlier, emphasizing the spiritual features of Transcendental Meditation (TM), Alexander et al. (1994) meta-analyzed effects on substance abuse from 19 studies of TM, finding evidence that TM was more effective than control conditions in reducing consumption of alcohol ($d = 0.55$), tobacco ($d = 0.87$), marijuana ($d = 0.70$), and other illicit drugs ($d = 0.83$). However, TM and many modern mindfulness-based interventions are of uncertain spiritual classification (e.g., whether R/S versus secular classification – see section below on Borderline Spiritual Constructs).

The psychology of problem gambling shows similarities to the psychology of substance abuse, although problem gambling is more clearly classifiable as a mental health problem. Regardless of its precise classification, it has been recognized as a public health problem (Shaffer et al. 1999; Shaffer and Korn 2002). Koenig et al. (2012, p. 780) identified 5 post-2000 studies of gambling, all of which linked R/S to lower levels of gambling. The largest of these studies used a nationally representative sample of US adults (n = 2406), reporting that frequent attendance at religious services, but not individual religious faith, was independently associated with less likelihood of any previous gambling problems (lifetime prevalence), controlling for

gambling frequency, distance to a casino, and other factors. Findings also suggested that "social integration afforded by religious attendance is more important than intrapersonal religious salience in affecting problem forms of gambling" (Hoffmann 2000, p. 488).

Mental Health R/S factors have generally been linked to better mental health, which is commonly theorized as a third major mediator between individual R/S and physical health (Fig. 1). However, the strength and consistency of relations between R/S and mental health vary across dimensions of R/S and dimension of mental health. Most dimensions of R/S are theorized as likely to be related to better mental health through many of the same pathways theorized to link R/S to physical health, such as enhanced social networks and social support, marital stability, improved processes of coping with stress, the cultivation of salutary virtues and character strengths, and pursuit of more adaptive life goals (e.g., Koenig et al. 2001, p. 223, 2012, pp. 308–309) (see also Ellison and Levin 1998; Emmons 1999). However, negative forms of R/S coping (see below), along with related R/S dimensions such as extrinsic religiosity, are often theorized as relating to poorer mental health, an expectation that has received some cross-cultural empirical support (e.g., Dezutter et al. 2006; Watson et al. 2002). The overlapping and related category of religious/spiritual struggles – sometimes defined as "expressions of conflict, question and doubt regarding matters of faith, God and religious relationships" – has also been linked to poorer mental health (McConnell et al. 2006, p. 1470; Exline 2013). Relations of R/S with the most clinically relevant dimensions of mental health are reviewed in the chapter entitled "Mental Health, Religion, and Spirituality" (this volume), which examines R/S relations with depression, anxiety disorders, and psychoses.

Psychological Well-Being Considerable research has focused on relations of R/S to psychological well-being. A great deal of that research has focused on the psychological well-being and/or quality of life of medical patients (see reviews by Sawatzky et al. 2005; Hollywell and Walker 2009; Mouch and Sonnega 2012). These findings are reviewed in the chapter entitled "Clinical Practice, Religion, and Spirituality" (this volume), and have shown favorable relations among general groups of medical patients as well as specific groups such as cardiac, stroke, and cancer patients.

Various non-patient populations have also been subjected to extensive study for how their R/S relates to psychological well-being. An early meta-analysis of R/S and subjective well-being in adults of all types was reported by Witter et al. (1985), who found a favorable unadjusted R/S-well-being correlation of r = 0.16, based on 28 studies. More recently, studies of adolescent well-being and R/S were meta-analyzed by Yonker et al. (2012), revealing a favorable correlation with well-being of r = 0.15 from 8 studies (see chapter, "Maternal/Child Health, Religion, and Spirituality," this volume). And a systematic review of R/S and psychological well being of informal caregivers reported that 71 of 83 studies (86%) showed nonsignificant or mixed R/S-well-being relations, a pattern of modest association "in contrast to the broader literature," although out of 222 total calculated associations, 42 (19%) were favorable, and only 6 (3%) were unfavorable (Hebert et al. 2006, p. 499).

Overall, Koenig et al. (2012, pp. 130–143, 643–662) identified 224 quantitative studies since 2000 that examined R/S and psychological well-being, of which 172 (77%) found statistically significant favorable associations,, eight (4%) reported mixed associations, and only one reported significantly unfavorable relationships. Of 72 studies rated 7 or higher in methodological quality on a 1–10 scale, 54 (75%) reported favorable associations. Koenig et al. (2012, pp. 302, 662–667) also identified 65 post-2000 studies that presented data on R/S and quality of life, finding that 41 (64%) reported statistically significant favorable relations. Favorable R/S-well-being associations have been observed not only in dozens of local or regional studies in the US, but also in many US national samples (e.g., Benjamins 2006; Ferriss 2002; Krause 2004a, b). Favorable R/S-well-being associations have also been reported in other English-speaking countries such as Canada, Australia, and the United Kingdom (Uppal 2006; Flouri 2004; Miner 2009), as well as in more than a dozen European countries ranging from Germany to Greece (Chliaoutakis et al. 2002; Daig et al. 2009; Greene and Yoon 2004, on 13 Western European countries, n = 27,100), and in Israel (Vilchinsky and Kravetz 2005). Outside of the West, favorable associations have been observed in countries ranging from Uruguay to Kuwait and Pakistan, India, and Malaysia (for references see Koenig et al. 2012, pp. 643–662). Positive relations have also been found in worldwide samples, though some patterns of regional differences have also been detected (Crabtree and Pelham 2009, n ≈ 1000 in each of 143 countries, results often weaker or null for richest 31 countries; Diener and Clifton 2002, 41 societies, n = 52,624, results weak or null in communist countries; Helliwell and Purnam 2004, 49 societies, n = 83,520).

R/S, Personality Traits, and Character Strengths Major public health journals have published empirical reports documenting that personality traits such as conscientiousness can influence health and longevity (e.g., Schwartz et al. 1995). And much evidence has documented links between religion/spirituality and personality, suggesting that personality could mediate R/S-health relations. Less clear, however, is causal direction: Does personality influence religion, or does religion influence personality? Some evidence supports each possibility, suggesting that influences may be causally bidirectional. Hence, as represented in Fig. 1, character/personality may at times function in R/S-health as a confounding factor (box labeled "Psychosocial and biological context"), and on other occasions may function as a mediating factor (box labeled "Character Strengths").

Personality can be defined as an individual's distinctive and characteristic manner of thinking, feeling, and behaving, that is relatively stable across time and setting. Personality theorists have identified distinct layers or levels of personality, distinguishing between fundamental dispositional traits and characteristic adaptations (McAdams and Olson 2010). Accordingly, for purposes of this review, we will divide empirical studies of R/S and personality into two broad categories: (a) studies of fundamental personality dimensions, such as the Big Five traits (Goldberg 1993); (b) studies of character strengths and virtues emphasized by positive psychology (Peterson and Seligman 2004). To these, we will add a third, emergent category: (c) studies of R/S and mindfulness-related dispositions.

The nature of fundamental dimensions of personality has been studied through several different frameworks and corresponding empirical measures in psychology and psychiatry, with recent research most commonly employing the Big Five measurement model, which identifies primary dimensions of Conscientiousness, Agreeableness, Openness, Extraversion, and Emotional Stability (with its opposite sometimes called Neuroticism) (Goldberg 1993; Koenig et al. 2012). Until recently, many researchers viewed this level of personality as possessing such stability in adulthood that it was almost, in William James' (1923/1890) words, "set like plaster." However, meta-analyses of hundreds of longitudinal studies have demonstrated that much change does occur, supporting a *plasticity principle* that "personality traits are open systems that can be influenced by the environment at any age" (Roberts et al. 2008, p. 384; see also Roberts and DelVecchio 2000). For example, a recent 4-year longitudinal study of a nationally representative sample of German adults ($n = 14{,}718$) observed specific patterns of personality change in reaction to major life events such as starting one's first job, marriage, and having a child, finding that all factors except conscientiousness became less stable after age 60 (Specht et al. 2011).

Much research has documented links between fundamental personality dimensions and health variables, perhaps most compellingly with regard to conscientiousness and emotional stability. A meta-analysis of 19 studies from 6 European and North American countries found a favorable effect of conscientiousness on longevity (OR = 0.64, $p < 0.001$, Kern and Friedman 2008), and another meta-analysis of 194 studies concluded that "conscientiousness-related traits were negatively related to all risky health-related behaviors and positively related to all beneficial health-related behaviors" (Bogg and Roberts 2004, p. 887). Other fundamental dimensions of personality linked to better health or longevity include extroversion, agreeableness, and low neuroticism (Friedman and Kern 2014; Friedman 2007; Chapman et al. 2011).

Meta-analyses indicate that religion/spirituality is linked to some but not all of these favorable dimensions of personality. Saroglou (2010, p. 108) meta-analyzed 71 studies from 9 countries of religion and personality, finding that the correlation of religiousness with Conscientiousness and Agreeableness was "consistent across different religious dimensions, contexts (gender, age, cohort, and country), and personality measures, models, and levels," and religion correlated with low neuroticism in the US but not in Europe. Similarly, a meta-analysis of 38 studies of R/S and personality by Lodi-Smith and Roberts (2007) reported positive relations with agreeableness (95% CI = $0.04 - 0.29$ and conscientiousness (95%CI = $0.00 - 0.18$), but not emotional stability (neuroticism). And among adolescents, a meta-analysis of 9 studies by Yonker et al. (2012) reported significant positive relations of R/S with Agreeableness ($r = 0.18$), Conscientiousness ($r = 0.19$) and Openness ($r = 0.14$). Similar patterns were reported by Koenig et al. (2012, pp. 279–288, 791, 797–821), who identified more than 250 reported estimates of how R/S is related to major dimensions of personality.

Regarding causal direction, processes in both directions could potentially operate to align R/S engagement with personality traits that are viewed as virtuous. For example, if religiously endorsed virtue is viewed as closer to Conscientiousness and

Agreeableness than to their opposites,[2] then religious people would be motivated to habitually cultivate such traits, suggesting a causal influence from R/S on personality. Conversely, people higher on such traits might find it easier to become or remain religious, which suggests a causal influence from personality on religion. Saroglou (2010) noted four longitudinal studies showing that basic dimensions of personality traits could predict future R/S, although he argued that religiousness is best predicted by the interaction of personality with context. However, apart from a few small or retrospective studies (e.g., Koenig et al. 1990; see review by Paloutzian et al. 1999), few if any prospective studies have examined whether R/S events can function analogously to other life changes (e.g., those studied by Specht et al. 2011) in predicting subsequent change in basic personality traits.

In contrast to such basic personality traits, *character strengths and virtues* are the focus of an empirical literature emerging from the recent positive psychology movement. Peterson and Seligman (2004) have identified six major classes of such character strengths that possess analogues across all major human cultures: humanity, temperance, justice, courage, wisdom/knowledge, and transcendence. Among the most commonly studied in their relation to R/S are forgiveness (from the temperance category), kindness/altruism (from the humanity category), and hope/optimism (from the transcendence category). As we now discuss, systematic reviews or meta-analyses suggest that R/S is positively related to each of these three classes of personality strengths, which are in turn related to health.

Regarding forgiveness and R/S, a meta-analysis of 64 studies reported that R/S was positively related to trait forgivingness (i.e., forgiveness across relationships and situations; r = 0.29), although all R/S-forgiveness studies employed cross-sectional designs (Davis et al. 2013). Forgiveness, in turn, has been favorably linked to mental and physical health, sometimes prospectively and/or experimentally (Riek and Mania 2012; Wade et al. 2014; Bono et al. 2008).

R/S-kindness studies have not been reviewed. However, a systematic review of 100 studies of R/S and prosocial behavior and/or attitudes reported positive correlations in most studies, but that results varied between R/S dimensions, and that the prosociality was sometimes "minimal" and extended only to co-religionists (Oviedo 2016, p. 174). Conclusions were consistent with an earlier meta-analysis of 21 studies from 15 countries (Saroglou et al. 2004). Recent meta-analytic evidence from religious priming studies also supports a "small to moderate effect of religious priming on prosocial behaviors" (Shariff et al. 2016, p. 38, from k = 25 studies). Also recently, cross-national analyses of data from the 126 country Gallup World Poll found that a higher rate of (self-reported) helping of strangers was significantly and independently predicted in cross-sectional analyses by numerous R/S measures, including individual attendance at worship services, adhering to a minority religious

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[2] For example, Peterson and Seligman (2004) observed that conscientiousness has a set of "prototypical descriptive markers… which closely resembles the qualities attributed to the prudent person by Aristotle" (p. 482), and that an influential Agreeableness facet measure can be used to assess the virtue of Kindness, and consists of items that "reflect active concern for the welfare of other people" (p. 328).

tradition, living in a religiously diverse country, and living in a more devout country, suggesting that "religion plays a particularly important role in promoting the prosocial norms and values that motivate helping strangers" (Bennett and Einolf 2017, p. 323, n = 179,961). Much evidence also links a wide range of prosociality indicators, including engagement in volunteer work, to health and longevity (Okun et al. 2013; Post 2007).

R/S-hope relations have also not been meta-analyzed, but Koenig et al.'s (2012, pp. 129–130) systematic review found positive R/S associations in 26 of 32 studies of R/S and optimism (81%) and 29 of 40 studies of R/S and hope (73%). An optimism-health meta-analysis of 83 studies reported that optimism was favorably linked to longevity and diverse health outcomes and markers concerning pregnancy, pain, immune function, cardiovascular disease, and cancer (Rasmussen et al. 2009).

Research on R/S and several other virtue-related personality traits has been catalogued by Koenig et al. (2012, pp. 128–130, 581–582, 672–678, 681–683). R/S showed a favorable association with in 5 of 6 (83%) studies of moral values or ethical choices (pp. 681–682), 5 of 5 studies of gratitude (pp. 581, 682–683), 42 of 45 (93%) studies of sense of meaning and purpose in life (pp. 130, 581, 672–674), 42 of 69 (61%) of self-esteem (with only 2 or 3% unfavorable correlations, pp. 129, 581, 674–677), and 13 of 21 (62%) studies of internal locus of control (with 3 or 14% unfavorable and 4 or 18% mixed/complex, pp. 128–129, 582, 677–678). These included a study of a Hungarian nationally representative sample (n = 12,640) showing significant positive associations between meaning in life and both the importance and practice of religion (r = 0.22 and r = 0.19, after demographic adjustments, Skrabski et al. 2005; and meaning in turn positively predicts health and health behavior, Roepke et al. 2014).

Finally, dispositional mindfulness (i.e., trait mindfulness) is a third category of personality variable that has sometimes been theorized to explain relations between R/S and health. Mindfulness viewed as a personality trait must be distinguished from state mindfulness, a temporary, time-limited mental state. And mindfulness as either trait or state must in turn be distinguished from various practices indended to foster it, such as mindfulness meditation, as well as from the growing collection of so-called mindfulness-based interventions in healthcare and health promotion (Cullen 2011; Roberts and Montgomery 2015; de Souza et al. 2015). As state, trait, or practice, mindfulness is not inherently spiritual or religious (see discussion later in this chapter), but may potentially be either a causal antecedent or consequence of spirituality and/or religion. Although derived from Buddhism, the construct appears potentially relevant to all major R/S traditions, with a leading mindfulness researcher having argued that "mindfulness is ubiquitous in all wisdom traditions" (Singh 2010, p. 2).

Research on mindfulness states, traits, practices, and interventions has exploded in the past two decades, and now comprises thousands of refereed publications. The first mindfulness measurement instrument was published only in 2003, and already at least 5 unidimensional and 5 multidimensional self-report assessment scales are now available that ostensibly measure state or trait mindfulness (Park et al. 2013). However, a limitation of all present scales is their "absence of qualitative evalua-

tions and accepted external referents to support construct validity" (Park et al. 2013, p. 2639), attributable in part to continuing ambiguity and debate about how the mindfulness construct itself should be defined, with more than 30 definitions now published (Chiesa 2013; Nilsson and Kazemi 2016; Oman 2015). Rosch (2007, p. 262) suggested that the term "mindfulness" functions less as a descriptor of the contents of so-called mindfulness-based interventions than as an "umbrella justification" for inclusion of numerous features of wisdom traditions (see section below on Borderline Spiritual Constructs). Yet these ambiguities did not prevent a panel of experts from viewing mindfulness as the psychotherapeutic approach most likely to exercise increasing influence during the next decade (Norcross et al. 2013). Indeed, Offenbächer et al. (2011, p. 2434) appear to have represented the views of many researchers when they stated that "One way in which the growing interest in spirituality manifests in the scientific community is through research in mindfulness."

Empirical studies of the relation of R/S to mindfulness trait measures are still in their infancy, although a handful of positive correlations have been reported (e.g., Einolf 2013; Heaven and Ciarrochi 2007; Leigh et al. 2005). In experimental studies, gains in trait mindfulness measures have also been reported in randomized trials of spiritually-focused interventions (Shapiro et al. 2008; Bormann et al. 2014; see also qualitative perspectives in Rubinart et al. 2016). And a review by Barnby et al. (2015) reported both similarities and differences in the neural regions activated by spirituality and mindfulness. Thus, mindfulness represents a plausible potential mediator of R/S-health relations, but for such purposes it presently possesses neither a solid empirical base nor a firm conceptual formulation.

2 How R/S Coping Affects Health Factors and Outcomes

As noted earlier, using religious/spiritual methods of coping with stress may be viewed as a dimension of R/S engagement (see Fig. 1) that causally affects health, and may partially mediate between other R/S dimensions and health. A substantial empirical literature supports the theorized health effects. Koenig et al. (2012, pp. 94–120, 610–628, 635–643) identified 313 studies since 2000 that examined R/S and psychological coping, and another 76 that examined R/S and stress or stress-buffering (pp. 629–635). Religious coping, sometimes also called spiritual coping, or R/S coping, may be defined as "the use of religious beliefs or behaviors to facilitate problem-solving to prevent or alleviate the negative emotional consequences of stressful life circumstances" (Koenig et al. 1998, p. 513), or more inclusively as "a search for significance in times of stress in ways related to the sacred" (Mahoney et al. 2006, p. 342; see also Pargament 1997, pp. 43, 90).

Several studies suggest that R/S coping adds additional predictiveness, beyond secular forms of coping, although this literature does not appear to have been systematically reviewed (Pargament 2011). Examples of studies include those by Tix and Frazier (1998), and others (Gall 2006; Mickley et al. 1998; Pargament et al. 1999). Other studies have shown similar surplus benefit of religious over non-religious social support (e.g., Krause 2006).

Empirical studies of R/S coping have been conducted at least since the early 1970s (Koenig et al. 2001). Several key advances were contributed by psychologist Kenneth Pargament (1997), culminating psychometrically in Pargament et al.'s (2000) 105 item (21-dimensional) measure of religious coping. Examples of dimensions include "collaborative religious coping," "passive religious deferral," and "self-directing religious coping" (pp. 522–523). Evidence suggests that the ways that people use religion and spirituality to cope may be divided into two broad classes, "positive" methods of R/S coping that tend to be linked to favorable mental health, and "negative" methods with utilization that tends to be linked to worse mental health. Examples are "tried to put my plans into action together with God" (positive) and "Wondered what I did for God to punish me" (negative) (Pargament et al. 2011, p. 57). The large and growing empirical literature on R/S coping has been reviewed to date by one meta-analysis, one meta-synthesis, and two systematic reviews .

Ano and Vasconcelles (2005) meta-analyzed 49 studies of religious coping, examining how the overall dimensions of positive and negative religious coping related to positive adjustment outcomes, such as life satisfaction or personal growth, versus negative adjustment outcomes, such as depression, guilt, or hostility. Consistent with their theoretical framework, they found that in most cases, constructs with like valence were positively correlated, and constructs with unlike valence were inversely correlated. More specifically, they found that positive coping was correlated with positive adjustment ($r = 0.32$, $p < 0.05$), negative coping with negative adjustment ($r = 0.22$, $p < 0.05$), and positive coping was inversely related to negative adjustment ($r = -0.12$, $p < 0.05$). However, negative coping was uncorrelated rather than inversely correlated with positive adjustment ($r = 0.02$, ns), suggesting to the investigators that perhaps "some forms of negative religious coping may represent spiritual struggles that are actually pathways on the road towards growth" (p. 474).

Turning to R/S to cope with bereavement has been the focus of two systematic reviews. Wortmann and Park (2008) conducted a systematic review of 73 studies of adjustment following bereavement, finding that R/S has had a generally positive, but sometimes sporadic, relationship with adjustment to bereavement. Unfortunately, causal inferences were frequently undermined by correlational designs and failure to control potential confounders, such as demographics and non-religious social support. Only 25 reports were longitudinal, and only five studies with non-bereaved controls. Yet nine out of ten R/S dimensions showed favorable relations with adjustment in majorities of studies. The investigators argued that "the question, 'Is religion-spirituality related to adjustment to bereavement?' is too simplistic a question" (p. 727), asserting instead that answers depend on multiple factors including R/S dimension, adjustment outcome, timeframe, and nature of the loss. Similar patterns were encountered by Becker et al.'s (2007) systematic review of 32 studies of R/S influences on bereavement coping, which reported that 94% of studies showed some positive effects of R/S on bereavement, but that methodological weaknesses precluded definitive conclusions.

R/S has also been studied for its contributions to coping with other difficulties. For example, Adedoyin et al. (2016) identified nine studies documenting the substantial perceived value of R/S coping among African refugees. R/S also contributes

to coping and adjustment by domestic violence survivors, as documented in six studies qualitatively meta-synthesized by Yick (2008). Narratives of ethnically diverse samples of Christian, Muslim, and Buddhist women (n = 62) from Korea and the US revealed roles of R/S among domestic violence survivors. Across all studies, strength and resilience for coping with abuse and violence was derived from R/S though channels that included prayer and meditation, an enhanced capacity for discernment, and receipt of R/S social support. Other cross-culturally recurring themes included tensions from religious definitions of gender role expectations, experience of a spiritual vacuum during abuse, reconstructed senses of self, faith and "submission," sometimes involving a sense that "the context of scriptures needed to be taken into account" (p. 1301), or of "not relying solely on the church's or others' interpretations of scripture." (p. 1300).

3   Effects from Prayer

Prayer is an important or central feature of most traditions of spiritual and religious practice. Indeed, prayer has been affirmed as "the very soul and essence of religion" by figures ranging from William James to Mahatma Gandhi (James 1961/1902, p. 361; Gandhi, quoted in Zaleski and Zaleski 2005, p. 294). Prayer is often suggested as a factor that may mediate (help explain) why religious/spiritual involvement correlates with better health. Indeed, people often turn to prayer as a means of coping with illness and other difficulties (Levin 2016). Prayer and belief in its benefits is also very common in the US population and worldwide. Large majorities of US adults who pray report that prayer is "very helpful" for many conditions (McCaffrey et al. 2004, p. 860), and among US adult users of 20 stress management techniques, prayer was viewed as the most effective (American Psychological Association 2008) (see also Ladd and Spilka 2013). But even apart from its use in responding to identifiable stressors, prayer suffuses much religious ritual, and is often central to disciplined and proactive R/S strivings, such as for spiritual realization and the cultivation of character strengths and virtues (Ellison and Taylor 1996; Emmons 1999). Prayer may therefore potentially serve not only to foster recovery, but additionally to prevent the occurrence of illness.

Yet prayer is a very multifaceted phenomenon. Theologians as well as social scientists identify diverse types of prayer, and psychologists have developed measurement instruments for assessing a wide range of "dimensions" or forms of prayer that include petitionary prayer, intercessory prayer, prayers of thanksgiving, contemplative/meditative prayers, and many others (Hood et al. 2009). There is no reason to believe that all types of prayer should influence health equally, or that prayer should be equally beneficial for all people in all situations. Indeed, various lines of empirical research have explored relations between prayer and health, finding mixed results (Hood et al. 2009). Levin (1996, p. 72) has pointed out a strength of traditional religious explanations for positive prayer-health relations, noting that "the most parsimonious explanation for why people are healed after praying to what they

believe is a transcendent God for a supernatural healing is that there is in fact a transcendent God who supernaturally heals." Yet such explanations are extremely difficult if not impossible to test scientifically, and other more mainstream and testable potential explanations have been suggested (Breslin and Lewis 2008).

In conceptualizing how prayer might affect health, it is important to distinguish effects on the pray-er (the person praying) from effects on the pray-ee (the person being prayed for) (Breslin and Lewis 2008). Often the pray-er and the pray-ee are not the same person, and the relevant bodies of scientific theory and empirical evidence differ greatly.

Effects on the Person Praying (Pray-er) A recent national survey of US adults reported that nearly four-fifths (79%) had prayed for healing of themselves (Levin 2016, lifetime prevalence). Scientifically proposed pathways for health effects on the pray-er include activating positive frameworks for interpreting life events, fostering improved health behaviors by the pray-er, stimulating the pray-er's psycho-neuroimmunologic pathways, and influencing the subconscious of the pray-er in ways that beneficially direct subsequent behavior (Breslin and Lewis 2008). Such pathways could operate whether the pray-er is praying for others or for himself/herself. Figure 1 could easily be refined to represent each of these proposed explanations as a causal pathway: When the pray-er is praying for his or her own welfare or healing, prayer could be represented as a dimension of R/S itself – for example, devotional prayers pursued for spiritual growth may be conceptualized as simply an R/S practice, whereas prayers for one's own healing may be regarded as a form of R/S coping. Note that, consistent with other coping activities and treatments that are viewed favorably, prayer may also activate placebo effects and other expectancy-related phenomena (Birch 2006; Price et al. 2008). (In an effort to set aside misleading negative connotations, Benson and Friedman 1996 have argued that the placebo effect might be renamed effects of "remembered wellness").

Such theories suggest that prayers may causally benefit the pray-er's health, which, all else being equal, would generate positive prayer-health relations in the population. But as Meisenhelder and Chandler (2001) pointed out, it is also "a generally accepted axiom … that people turn to God in their hour of need. Thus, if physical health impacted frequency of prayer, the results would likely show frequency of prayer related to poorer health, not better perceived general health" (p. 327). This possibility for bidirectional causality suggests that in cross-sectional studies, the frequency of prayer – or at least the frequencies of the types of prayer that people turn to when distressed – might be either favorably or unfavorably associated with health, depending upon which direction of causal influence is more powerful. It also underscores the benefits of using multidimensional conception and measurement of prayer: Not only might various forms of prayer differentially affect health, various forms of prayer might also be differently influenced by reverse causal influence from poorer health.

Unfortunately, many studies of prayer-health relations have used single-item measures of prayer frequency without specifying type of prayer, and the vast majority of prayer-health studies have employed cross-sectional designs. Perhaps unsur-

prisingly, therefore, empiricall findings on relations of prayer with health and well-being have indeed been complex and difficult to interpret (Park 2012; McCullough and Larson 1999; Thoresen et al. 2005; Ladd and Spilka 2013; Hood et al. 2009). Consistent with a possible predominance of reverse causality, one of the few multi-national prayer studies reported that single-item measures of prayer frequency were consistently correlated with *poorer* health and well-being across nine European countries (Hank and Schaan 2008). The comparatively few studies that have employed multimensional approaches have also often reported different correlates for different dimensions. For example in multiple regression analyses, Paloma and Gallup (1991) found that meditative prayer, but not other forms of prayer, predicted higher levels of forgiveness. Cox (2000) found that when compared to conversational prayer, meditative prayer was more strongly correlated with several measures of well-being.

One of the few systematic reviews of how non-intercessory prayer is related to physical health and well-being was conducted by Hollywell and Walker (2009), who identified 26 studies of Western adults, of which five were prospective. These findings revealed generally favorable associations between prayer and subsequent health, including better recovery from cardiac surgery, less time spent in long-term care, and reduced risk of mortality. More recent studies have yielded similar findings (e.g., Ai et al. 2010). Clearly, however, much work still remains to obtain a fuller scientific understanding of how different forms of prayer in different situations affect one's own health over time.

Effects on the Prayed-for person (Pray-ee) Prayer for the welfare of another person is often called intercessory prayer. A recent nationally representative survey of US adults reported that nearly seven-eighths (87%) had prayed for the healing of other people (Levin 2016, lifetime prevalence). For the purpose of scientific study, it is important to distinguish between (i) non-distant or *non-distal* intercesory prayers offered when the pray-er can socially or physically interact with the pray-ee, and (ii) cases in which the pray-ee is insulated from most or all social influences from the pray-er, usually called distant or *distal* intercessory prayer.

In cases of non-distal intercessory prayer, engaging in prayer may alter or improve the pray-er's own behaviors, perhaps enhancing the pray-er's compassion for the pray-ee, the pray-er's determination to assist the pray-ee, or the pray-er's optimism and confidence in beneficial healing outcomes. Such effects could arise through several processes mentioned earlier concerning effects on a pray-er's own health. For example, engaging in prayer might plausibly affect the pray-er's behavior through activating conscious or subconscious positive interpretive frameworks or enhancing health-related behaviors by the pray-er (Breslin and Lewis 2008). Similarly, the pray-er's enhanced optimism, compassion, or other feelings, attitudes or behaviors could be transmitted to benefit the pray-ee through social or physical interaction, and could be viewed as a form of social support. Such pathways could be incorporated in Fig. 1 as a more detailed representation of the nature and influence of social support. Viewed in this way, the proposition that non-distal prayer can beneficially affect health is a fairly straightforward consequence of scientifically

plausible and supportable claims that (i) engaging in prayer can enhance a pray-er's capacity to offer social support, and (ii) enhanced social support for the pray-ee will lead to health benefits for the pray-ee.

Effects of such non-distal intercessory prayer appear largely unreviewed as a distinct topic. Yet empirical studies exist. One recent example is a study of Mozambiquan adults (n = 24) who suffered from hearing impairment (n = 14) and/or vision impairment (n = 11). The investigators studied effects from "direct-contact prayer, frequently involving touch," which they called proximal intercessory prayer (Brown et al. 2010, p. 864). Results showed statistically significant improvements in both audition ($p < 0.003$) and visual acuity ($p < 0.02$).

Much more controversial are studies of health effects from distal intercessory prayer, a recurring topic when R/S-health relations are discussed in popular media. Scientifically the topic has remained comparatively marginal, despite early scientific attention from Galton (1872), and an ongoing series of randomized trials beginning in the late twentieth century, most prominent by Byrd (1988) and Benson et al. (2006). In the present century, Koenig et al. (2012, pp. 961–963) identified 17 clinical trials conducted between 2000 and 2009, in locations that included the US (k = 10), the UK (k = 2), Germany (k = 2), Israel (k = 1), Australia (k = 1), and South Korea (k = 1). such trials have continued to be published worldwide (e.g., Hoşrik et al. 2017; Olver and Dutney 2012; Rosa et al. 2013; Struve et al. 2016).

In the absence of any scientifically mainstream causal pathways through which distal intercessory prayers could influence health, experimental studies of such prayers are controversial, both scientifically and theologically (e.g., Chibnall et al. 2001). Myers (1997), a prominent psychologist and scientist who is also a religious believer, went so far as to publish a dated and notarized letter predicting that null findings would result from a prominent and widely publicized intercessory prayer study, a prediction that several years later proved accurate (Benson et al. 2006). Myers (1997, p. 1) advanced several arguments from a believer's perspective for why null effects should occur, including that "God works not in the gaps of what we don't yet understand, but in and through nature, including the healing ministries that led people of faith to spread medicine and hospitals worldwide." Cadge (2012) has described some of the intellectual debate and controversy that has been generated by these studies. Some advocates of research in this area have called for moratoria to facilitate improved conceptualization (Levin 2009).

Ladd and Spilka (2013, p. 299) characterise conclusions from several recent reviews of experimental distal intercessory prayer studies as "becoming a consensus [that] there is little, if any, empirical evidence" for demonstrable effects. Reviews or meta-analyses reporting small or null effects from distal intercessory prayer include Masters and Spielmans (2007), as well as Roberts et al. (2009) and Hodge (2007). It is noteworthy that almost all studies of the effects of intercessory prayer have been experimental, perhaps because well-designed observational studies seem precluded by the severe challenge if not impossibility of measuring a study participant's *total exposure* to intercessory prayer from all friends, family, acquaintances, and strangers (Oman and Thoresen 2002) (although Galton's 1872 study was observational).

Despite these unpromising reviews and calls for moratoria, however, intercessory prayer studies continue to be published. Furthermore, reviews do report significant findings concerning other distant-action phenomena that lack mainstream scientific explanations (e.g., Roe et al. 2015). Such findings suggest the possibility that experimental studies of intercessory prayer, notwithstanding the diverse philosophical objections noted earlier, might ultimately identify a feasible approach (or "paradigm") that yields replicable positive findings. But this has not yet occurred. In sum, then, current evidence does not offer any clear support for including distant intercessory prayer as a causal pathway in models of relations between R/S and public health.

4   Borderline Spiritual Constructs

Some practices are widely acknowledged as inherently religious or spiritual: Examples include prayer and devotional reading of religious scriptures. However, both secular and spiritual forms exist for several other health-related practices of great contemporary interest (Harris et al. 1999, p. 416). These dual-form practices include mindfulness, meditation, and yoga postures, each of which has generated substantial research linking it with better physical and/or mental health (Bussing et al. 2012; Desveaux et al. 2015; Eberth and Sedlmeier 2012; Khoury et al. 2015; Sedlmeier et al. 2012). Unfortunately, published reports of empirical research on these practices are often ambiguous about the presence, absence, or nature of any components related to spirituality or religion (Seeman et al. 2003). The historical origins of many of these practices within religious traditions suggests that they may contribute to favorable health impacts from engagement in religion or spirituality. But the heterogeneity and ambiguity of the research literature on these practices renders implications for R/S-health relations less interpretable. Because these practices exist in multiple forms that are not always easy to disentangle, we refer to them as *borderline practices* or *borderline constructs*.

The challenge of understanding the spiritual relevance of borderline constructs is compounded by the absence of universally accepted definitions of spirituality and religion. In Pargament's influential approach, spirituality and religion are defined in relation to the sacred, especially in relation to three qualities recognized in this approach as prototypically sacred: transcendence, boundlessness, and ultimacy. Others have questioned whether one might add to this list a fourth quality, "interconnectedness," in which case many modern and otherwise secular mindfulness interventions may be regarded as incorporating prototypically spiritual elements (Bergemann et al. 2013, p. 207).

Recent work, however, has highlighted the possibility that constructs such as religion, spirituality, and the sacred may be impossible to satisfactorily characterize through necessary and sufficient elements, but may instead best be characterized through a list of commonly occurring "typicality features" (Saler 2008, p. 222; Oman 2013, p. 31). From this definitional perspective, rather than regarding mindfulness and other borderline practices as existing in merely two forms – secular and spiritual – it may be more accurate to conceive of a *spectrum* of possible forms

ranging from the fully secular to the fully spiritual. At the secular end of this spectrum are versions of each practice that are presented and understood independently of any tradition, and whose content is devoid of any "typicality features" of spirituality/religion, such as representations of the sacred. Carrington's (1987) Clinically Standardized Meditation may be near this secular end of the spectrum. At the other end of the spectrum would be practices presented with reference to one or more R/S traditions, with content infused with a maximal set of "typicality features" related to spirituality and religion. An example would be scripturally-based meditation conducted with reference to a particular tradition, lineage, or belief system (or, for a more inclusive approach, see Oman and Bormann in press).

In view of these considerations, it seems most appropriate to regard each of the previously mentioned borderline practices – mindfulness, meditation, and yoga postures – as not *inherently* spiritual or religious, but regard them instead as activities that possess a core that is R/S-neutral. But this R/S-neutral core is readily combinable and frequently combined with diverse additional elements that reflect religion/spirituality. This summarizes the conceptual approach adopted in this book. In this approach, engaging in core mindfulness, meditation, or yoga postures might be schematically represented in Fig. 1 as health behaviors, whereas any intertwined R/S features might be represented as dimensions of religion/spirituality. This leaves open the empirically testable possibility that religious/spiritual involvement affects health in part through enhanced engagement with borderline practices such as mindfulness, meditation, and yoga postures. It is also consistent with scholarship that has documented the presence of meditation and yoga practices in multiple religious traditions, and has documented gains in mindfulness from practices not drawn from Buddhism (Goleman 1988; Nicholson 2013; Bormann et al. 2014; Shapiro et al. 2008).

Empirical studies relating R/S to borderline practices Unfortunately, relations to spirituality and religion have rarely been investigated in the voluminous research on mindfulness, meditation, and yoga postures. Among the few existing findings are intriguing empirical results from three randomized trials that compared spiritual and non-spiritual forms of meditation. In these trials, participants randomized to a spiritual meditation condition were taught to meditate on a spiritual phrase (e.g., "God is joy," or "God is good") whereas participants randomized to secular meditation conditions were taught to meditate on a similar secular phrase (e.g., "I am joyful," "I am good"). Findings from trials among people suffering frequent migraine headaches (migraineurs) showed significantly fewer headaches among participants in the spiritual meditation condition, perhaps because spiritual meditation supported viewing life through a "spiritual lens," facilitating salutary processes such as R/S coping (Wachholtz and Pargament 2005, p. 380, 2008; Wachholtz et al. 2017).

Unfortunately, few if any empirical studies have tested the simple proposition that higher levels of religion and/or spirituality predict participation in any of these borderline practices. The lack of such studies may be due to the rarity or difficulty in measuring these borderline constructs in non-experimental population samples.[3]

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[3] Burke et al. (2017) used improved measures to investigate predictors of spiritual meditation in a US nationally representative National Health Interview Survey, that unfortunately "did not ask specifically about religious identity or use of other religious/spiritual practices, such as prayer" (p, 3).

One rare example of such a population study measured only R/S forms of medita-
tion, using a single self-report question, "Within your religious or spiritual tradition,
how often do you meditate?" (Shahabi et al. 2002, p. 61). After demographic adjust-
ment, frequency of such R/S meditation was independently positively correlated
with both self-reported degree of spirituality (r = 0.28) and self-reported degree
religiousness (r = 0.09) (p < 0.01, n = 1422, Shahabi et al. 2002).

Some randomized evidence also suggests that enhanced spirituality – not only
enhanced spiritual well-being – may emerge from receiving modernized mindful-
ness interventions (e.g., Astin 1997; Crescentini et al. 2014), as well as other forms
of meditation (Oman et al. 2007). Evidence from meta-analyses also indicates that
yoga may foster enhanced spiritual well-being, although it is unclear whether such
gains were accompanied by gains in spirituality independent of gains in well-being
(Cramer et al. 2012; Garssen et al. 2016).

A neglected but potentially important possibility is that gains in spiritual engage-
ment might mediate some benefits from mindfulness, meditation, and yoga inter-
ventions (Kristeller 2010). This possibility is consistent with evidence that many
Western converts to Buddhism were meditating before they became Buddhist (e.g.,
Lomas et al. 2014). This has led to suggestions that a substantial portion of long-
term benefits from currently popular secularized mindfulness meditation programs
might be attributable to subsequent engagement with more conventional forms of
Buddhism (Oman 2015). Clearly a great deal more research is needed on the rela-
tion between R/S, health, and practices such as mindfulness, meditation, and yoga
postures.

**Box 3: Ideas for Application to Public Health Practice: Model of
Individual Health Effects**
Foundational individual-level theories and evidence on religion/spirituality
and health can beneficially inform public health professionals' partnering and
relationship-building with religious/spiritual communities or individuals by
supporting basic awareness:

✓ Be aware and acknowledge that R/S is usually favorably associated with
  numerous health factors, including most health behaviors, social connec-
  tions/support, quality of life, psychological well-being, and some salutary
  personality traits such as conscientiousness;
✓ Be aware of and acknowledge variables that show associations with R/S
  that are more mixed (e.g., overweight status) or often null (certain person-
  ality traits, such as emotional stability);
✓ Be aware that many people use R/S methods of coping with stress, and that
  different people draw on R/S using different "coping orientations" (e.g.,
  positive, negative, collaborative, deferring, self-directed) which have
  shown different patterns of relations with health.

Please see chapters in Part II of this volume for in-depth discussion of the
relevance of religion and spirituality to applied public health work. See Part
I's first chapter for an overview of major application themes.

5   Summary: Generic Model

Several ideas for application to public health practice are provided in Box 3. In summary, evidence on pathways identified in the Generic Model of R/S-health relations (Fig. 1) reveals that

- Social connections and support: R/S factors have been positively associated with social connections or support in more than 80 cross-sectional studies, some non-Western, and have usually predicted longitudinal gains in social connections/support.
- Health behaviors, general: In most studies, R/S factors have correlated with better nutrition, more physical exercise, better sleep, and better general and sexual safety behaviors;
- Health behaviors, substance abuse and addiction: R/S factors have correlated with less cigarette smoking, less alcohol and drug abuse, and less gambling, with better risk profiles also linked to participation in R/S-oriented Twelve-Step Fellowships, mindfulness, and meditation interventions.
- Mental health: R/S factors have generally been linked to better mental health, although the strength and consistency of these relations varies across dimensions of R/S and dimension of mental health (see chapter, "Mental Health, Religion, and Spirituality," this volume).
- Psychological well-being: R/S has shown patterns of favorable relations with well-being and quality of life among adolescents, medical patients, and many other populations;
- Many countries outside of the US and Europe have also generated studies showing favorable relations of R/S with greater well-being and less cigarette smoking, alcohol abuse, and drug abuse;
- R/S, personality traits, and character strengths: R/S does not tend to correlate with emotional stability but is positively associated with the health-predictive fundamental personality trait of conscientiousness, although causal direction remains uncertain; R/S is also positively correlated with diverse health-related character strengths that include forgiveness, kindness/prosociality, and hope.
- Links between R/S and mindfulness are largely unexplored, although a handful of positive associations have been reported.
- Religious/spiritual coping is multidimensional and adds incremental predictiveness beyond measures of secular coping. R/S forms of coping can be broadly classified as positive or as negative, with hundreds of studies linking positive R/S coping to better adjustment, and negative forms to worse adjustment.
- Effects on person praying: Empirical associations of praying and the health of the pray-er have been generally favorable but mixed, perhaps because people engage in multiple types of prayer which may be different in how they causally influence health and are influenced by health.
- Effects on prayed-for person: When a pray-er and pray-ee are socially connected, improved social support is a plausible pathway by which non-distal intercessory prayer could benefit the pray-ee's health. In contrast, meta-analyses fail to

demonstrate clear effects of distal intercessory prayer on the health of the pray-ee, and such studies remain scientifically and theologically controversial.

• Borderline spiritual constructs: Practices such as meditation, yoga postures, and cultivating mindfulness exist in both religious and nonreligious forms, and for most purposes should be classified as not inherently religious/spiritual, and as possessing a core meaning that is R/S-neutral.

References

Adedoyin, A. C., Bobbie, C., Griffin, M., Adedoyin, O. O., Ahmad, M., Nobles, C., et al. (2016). Religious coping strategies among traumatized African refugees in the United States: A systematic review. *Social Work and Christianity, 43*(1), 95–107.

Agrawal, A., & Lynskey, M. T. (2009). Correlates of later-onset cannabis use in the National Epidemiological Survey on Alcohol and Related Conditions (NESARC). *Drug and Alcohol Dependence, 105*(1–2), 71–75. https://doi.org/10.1016/j.drugalcdep.2009.06.017.

Ai, A. L., Ladd, K. L., Peterson, C., Cook, C. A., Shearer, M., & Koenig, H. G. (2010). Long-term adjustment after surviving open heart surgery: The effect of using prayer for coping replicated in a prospective design. *The Gerontologist, 50*(6), 798–809. https://doi.org/10.1093/geront/gnq046.

Alexander, C. N., Robinson, P., & Rainforth, M. (1994). Treating and preventing alcohol, nicotine, and drug abuse through transcendental meditation: A review and statistical meta-analysis. *Alcoholism Treatment Quarterly, 11*(1–2), 13–87. https://doi.org/10.1300/J020v11n01_02.

Al-Kandari, Y. Y. (2003). Religiosity and its relation to blood pressure among selected Kuwaitis. *Journal of Biosocial Science, 35*(3), 463–472. https://doi.org/10.1017/S0021932003004632.

American Psychological Association. (2008). *Stress in America* (Report).

Ano, G. G., & Vasconcelles, E. B. (2005). Religious coping and psychological adjustment to stress: A meta-analysis. *Journal of Clinical Psychology, 61*(4), 461–480. https://doi.org/10.1002/jclp.20049.

Astin, J. A. (1997). Stress reduction through mindfulness meditation: Effects on psychological symptomatology, sense of control, and spiritual experiences. *Psychotherapy and Psychosomatics, 66*(2), 97–106. https://doi.org/10.1159/000289116.

Atkins, D. C., Baucom, D. H., & Jacobson, N. S. (2001). Understanding infidelity: Correlates in a national random sample. *Journal of Family Psychology, 15*(4), 735–749. https://doi.org/10.1037/0893-3200.15.4.735.

Babor, T. F., Acuda, W., Campillo, C., Delboca, F. K., et al. (1996). A cross-national trial of brief interventions with heavy drinkers. WHO Brief Intervention Study Group. *American Journal of Public Health, 86*(7), 948–955. https://doi.org/10.2105/AJPH.86.7.948.

Barnby, J. M., Bailey, N. W., Chambers, R., & Fitzgerald, P. B. (2015). How similar are the changes in neural activity resulting from mindfulness practice in contrast to spiritual practice? *Consciousness and Cognition, 36*, 219–232. https://doi.org/10.1016/j.concog.2015.07.002.

Baron-Epel, O., Haviv, A., Garty, N., Tamir, D., & Green, M. S. (2005). Who are the sedentary people in Israel? A public health indicator. *The Israel Medical Association Journal, 7*(11), 694–699.

Becker, G., Xander, C. J., Blum, H. E., Lutterbach, J., Momm, F., Gysels, M., et al. (2007). Do religious or spiritual beliefs influence bereavement? A systematic review. *Palliative Medicine, 21*(3), 207–217. https://doi.org/10.1177/0269216307077327.

Benjamins, M. R. (2006). Does religion influence patient satisfaction? *American Journal of Health Behavior, 30*(1), 85–91. https://doi.org/10.5993/AJHB.30.1.8.

Bennett, M. R., & Einolf, C. J. (2017). Religion, altruism, and helping strangers: A multilevel analysis of 126 countries. *Journal for the Scientific Study of Religion, 56*(2), 323–341. https://doi.org/10.1111/jssr.12328.

Benson, H., & Friedman, R. (1996). Harnessing the power of the placebo effect and renaming it "remembered wellness". *Annual Review of Medicine, 47*(12), 193–199. https://doi.org/10.1146/annurev.med.47.1.193.

Benson, H., Dusek, J. A., Sherwood, J. B., Lam, P., Bethea, C. F., Carpenter, W., et al. (2006). Study of the Therapeutic Effects of Intercessory Prayer (STEP) in cardiac bypass patients: A multicenter randomized trial of uncertainty and certainty of receiving intercessory prayer. *American Heart Journal, 151*(4), 934–942. https://doi.org/10.1016/j.ahj.2005.05.028.

Bergemann, E. R., Siegel, M. W., Belzer, M. G., Siegel, D. J., & Feuille, M. (2013). Mindful awareness, spirituality, and psychotherapy. In K. I. Pargament, A. Mahoney, & E. P. Shafranske (Eds.), *APA handbook of psychology, religion, and spirituality (Vol. 2): An applied psychology of religion and spirituality* (pp. 207–222). Washington, DC: American Psychological Association. https://doi.org/10.1037/14046-010.

Berkman, L. F., & Syme, S. L. (1979). Social networks, host resistance, and mortality: A nine-year follow-up study of Alameda County residents. *American Journal of Epidemiology, 109*(2), 186–204. https://doi.org/10.1093/oxfordjournals.aje.a112674.

Birch, S. (2006). A review and analysis of placebo treatments, placebo effects, and placebo controls in trials of medical procedures when sham is not inert. *Journal of Alternative and Complementary Medicine, 12*(3), 303–310. https://doi.org/10.1089/acm.2006.12.303.

Bogg, T., & Roberts, B. W. (2004). Conscientiousness and health-related behaviors: A meta-analysis of the leading behavioral contributors to mortality. *Psychological Bulletin, 130*(6), 887–919. https://doi.org/10.1037/0033-2909.130.6.887.

Bono, G., McCullough, M. E., & Root, L. M. (2008). Forgiveness, feeling connected to others, and well-being: Two longitudinal studies. *Personality & Social Psychology Bulletin, 34*(2), 182–195. https://doi.org/10.1177/0146167207310025.

Bormann, J. E., Oman, D., Walter, K. H., & Johnson, B. D. (2014). Mindful attention increases and mediates psychological outcomes following mantram repetition practice in veterans with posttraumatic stress disorder. *Medical Care, 52*(12 Suppl 5), S13–S18. https://doi.org/10.1097/MLR.0000000000000200.

Breslin, M. J., & Lewis, C. A. (2008). Theoretical models of the nature of prayer and health: A review. *Mental Health, Religion & Culture, 11*(1), 9–21. https://doi.org/10.1080/13674670701491449.

Brown, T. N., Schulenberg, J., Bachman, J. G., O'Malley, P. M., & Johnston, L. D. (2001). Are risk and protective factors for substance use consistent across historical time?: National data from the high school classes of 1976 through 1997. *Prevention Science, 2*(1), 29–43. https://doi.org/10.1023/A:1010034912070.

Brown, C. G., Mory, S. C., Williams, R., & McClymond, M. J. (2010). Study of the Therapeutic Effects of Proximal Intercessory Prayer (STEPP) on auditory and visual impairments in rural Mozambique. *Southern Medical Journal, 103*(9), 864–869. https://doi.org/10.1097/SMJ.0b013e3181e73fea.

Burke, A., Lam, C. N., Stussman, B., & Yang, H. (2017). Prevalence and patterns of use of mantra, mindfulness and spiritual meditation among adults in the United States. *BMC Complementary and Alternative Medicine, 17*(1), Article 316. https://doi.org/10.1186/s12906-017-1827-8.

Bussing, A., Michalsen, A., Khalsa, S. B. S., Telles, S., & Sherman, K. J. (2012). Effects of yoga on mental and physical health: A short summary of reviews. *Evidence-Based Complementary and Alternative Medicine, 2012*, 165410. https://doi.org/10.1155/2012/165410.

Byrd, R. C. (1988). Positive therapeutic effects of intercessory prayer in a coronary care unit population. *Southern Medical Journal, 81*(7), 826–829.

Cadge, W. (2012). Possibilities and limits of medical science: Debates over double-blind clinical trials of intercessory prayer. *Zygon: Journal of Religion and Science, 47*(1), 43–64. https://doi.org/10.1111/j.1467-9744.2011.01239.x.

Carrington, P. (1987). Managing meditation in clinical practice. In M. A. West (Ed.), *The psychology of meditation* (pp. 150–172). Oxford: Oxford University Press.

Chapman, B. P., Roberts, B., & Duberstein, P. (2011). Personality and longevity: Knowns, unknowns, and implications for public health and personalized medicine. *Journal of Aging Research, 2011*, 759170. https://doi.org/10.4061/2011/759170.

Chibnall, J. T., Jeral, J. M., & Cerullo, M. A. (2001). Experiments on distant intercessory prayer: God, science, and the lesson of Massah. *Archives of Internal Medicine, 161*(21), 2529–2536. https://doi.org/10.1001/archinte.161.21.2529.

Chida, Y., Steptoe, A., & Powell, L. H. (2009). Religiosity/spirituality and mortality. *Psychotherapy and Psychosomatics, 78*(2), 81–90. https://doi.org/10.1159/000190791.

Chiesa, A. (2013). The difficulty of defining mindfulness: current thought and critical issues. *Mindfulness, 4*(3), 255–268. https://doi.org/10.1007/s12671-012-0123-4.

Chiesa, A., & Serretti, A. (2014). Are mindfulness-based interventions effective for substance use disorders? A systematic review of the evidence. *Substance Use & Misuse, 49*(5), 492–512. https://doi.org/10.3109/10826084.2013.770027.

Chitwood, D. D., Weiss, M. L., & Leukefeld, C. G. (2008). A systematic review of recent literature on religiosity and substance use. *Journal of Drug Issues, 38*(3), 653–688. https://doi.org/10.1177/002204260803800302.

Chliaoutakis, J. E., Drakou, I., Gnardellis, C., Galariotou, S., Carra, H., & Chliaoutaki, M. (2002). Greek Christian orthodox ecclesiastical lifestyle: could it become a pattern of health-related behavior? *Preventive Medicine, 34*(4), 428–435. https://doi.org/10.1006/pmed.2001.1001.

Cox, R. J. (2000). *Relating different types of Christian prayer to religious and psychological measures of well-being* (Unpublished doctoral dissertation). Boston: Boston University.

Crabtree, S., & Pelham, B. (2009, March 6). *Religion provides emotional boost to world's poor*. http://www.gallup.com/poll/116449/religion-provides-emotional-boost-world-poor.aspx. Accessed 18 June 2016.

Cramer, H., Lange, S., Klose, P., Paul, A., & Dobos, G. (2012). Yoga for breast cancer patients and survivors: A systematic review and meta-analysis. *BMC Cancer, 12*, 412. https://doi.org/10.1186/1471-2407-12-412.

Crescentini, C., Urgesi, C., Campanella, F., Eleopra, R., & Fabbro, F. (2014). Effects of an 8-week meditation program on the implicit and explicit attitudes toward religious/spiritual self-representations. *Consciousness and Cognition, 30*, 266–280. https://doi.org/10.1016/j.concog.2014.09.013.

Cullen, M. (2011). Mindfulness-based interventions: An emerging phenomenon. *Mindfulness, 2*(3), 186–193. https://doi.org/10.1007/s12671-011-0058-1.

Daig, I., Herschbach, P., Lehmann, A., Knoll, N., & Decker, O. (2009). Gender and age differences in domain-specific life satisfaction and the impact of depressive and anxiety symptoms: A general population survey from Germany. *Quality of Life Research: An International Journal of Quality of Life Aspects of Treatment, Care & Rehabilitation, 18*(6), 669–678. https://doi.org/10.1007/s11136-009-9481-3.

Davis, D. E., Worthington, E. L., Jr., Hook, J. N., & Hill, P. C. (2013). Research on religion/spirituality and forgiveness: A meta-analytic review. *Psychology of Religion and Spirituality, 5*(4), 233–241. https://doi.org/10.1037/a0033637.

de Souza, I. C. W., de Barros, V. V., Gomide, H. P., Mendes Miranda, T. C., de Paula Menezes, V., Kozasa, E. H., et al. (2015). Mindfulness-based interventions for the treatment of smoking: A systematic literature review. *The Journal of Alternative and Complementary Medicine, 21*(3), 129–140. https://doi.org/10.1089/acm.2013.0471.

Degenhardt, L., Chiu, W. T., Sampson, N., Kessler, R. C., & Anthony, J. C. (2007). Epidemiological patterns of extra-medical drug use in the United States: Evidence from the National Comorbidity Survey Replication, 2001–2003. *Drug and Alcohol Dependence, 90*(2–3), 210–223. https://doi.org/10.1016/j.drugalcdep.2007.03.007.

Desveaux, L., Lee, A., Goldstein, R., & Brooks, D. (2015). Yoga in the management of chronic disease: A systematic review and meta-analysis. *Medical Care, 53*(7), 653–661. https://doi.org/10.1097/MLR.0000000000000372.

Dezutter, J., Soenens, B., & Hutsebaut, D. (2006). Religiosity and mental health: A further exploration of the relative importance of religious behaviors vs. religious attitudes. *Personality and Individual Differences, 40*(4), 807–818. https://doi.org/10.1016/j.paid.2005.08.014.

Diener, E., & Clifton, D. (2002). Life satisfaction and religiosity in broad probability samples. *Psychological Inquiry, 13*(3), 206–209.

Durkheim, E. (1995/1912). *The elementary forms of religious life* (K. E. Fields, Trans.). New York: Free Press. (originally published in 1912 in French as Les formes élémentaires de la vie religieuse).

Dwyer, J. W., Clarke, L. L., & Miller, M. K. (1990). The effect of religious concentration and affiliation on county cancer mortality rates. *Journal of Health and Social Behavior, 31*(2), 185–202.

Eberth, J., & Sedlmeier, P. (2012). The effects of mindfulness meditation: A meta-analysis. *Mindfulness, 3*(3), 174–189. https://doi.org/10.1007/s12671-012-0101-x.

Einolf, C. J. (2013). Daily spiritual experiences and prosocial behavior. *Social Indicators Research, 110*(1), 71–87. https://doi.org/10.1007/s11205-011-9917-3.

Ellison, C. G., & Levin, J. S. (1998). The religion-health connection: Evidence, theory, and future directions. *Health Education and Behavior, 25*(6), 700–720. https://doi.org/10.1177/109019819802500603.

Ellison, C. G., & Taylor, R. J. (1996). Turning to prayer – Social and situational antecedents of religious coping among African Americans. *Review of Religious Research, 38*(2), 111–131.

Ellison, C. G., Barrett, J. B., & Moulton, B. E. (2008). Gender, marital status, and alcohol behavior: The neglected role of religion. *Journal for the Scientific Study of Religion, 47*(4), 660–677. https://doi.org/10.1111/j.1468-5906.2008.00434.x.

Emmons, R. A. (1999). *The psychology of ultimate concerns: motivation and spirituality in personality*. New York: Guilford.

Exline, J. J. (2013). Religious and spiritual struggles. In K. I. Pargament, J. J. Exline, & J. W. Jones (Eds.), *APA handbook of psychology, religion, and spirituality (Vol. 1): Context, theory, and research* (pp. 459–475). Washington, DC: American Psychological Association. https://doi.org/10.1037/14045-025.

Ferri, M., Amato, L., & Davoli, M. (2006). Alcoholics anonymous and other 12-step programmes for alcohol dependence. *The Cochrane Database of Systematic Reviews, 2006*(3), 1–26. https://doi.org/10.1002/14651858.CD005032.pub2.

Ferriss, A. L. (2002). Religion and the quality of life. *Journal of Happiness Studies, 3*(3), 199–215. https://doi.org/10.1023/A:1020684404438.

Fine, P. E. (1993). Herd immunity: History, theory, practice. *Epidemiologic Reviews, 15*(2), 265–302. https://doi.org/10.1093/oxfordjournals.epirev.a036121.

Flouri, E. (2004). Subjective well-being in midlife: The role of involvement of and closeness to parents in childhood. *Journal of Happiness Studies, 5*(4), 335–358. https://doi.org/10.1023/b:johs.0000048461.21694.92.

Friedman, H. S. (2007). Personality, disease, and self-healing. In H. S. Friedman & R. C. Silver (Eds.), *Foundations of health psychology* (pp. 172–199). New York: Oxford University Press.

Friedman, H. S., & Kern, M. L. (2014). Personality, well-being, and health. *Annual Review of Psychology, 65*, 719–742. https://doi.org/10.1146/annurev-psych-010213-115123.

Gall, T. L. (2006). Spirituality and coping with life stress among adult survivors of childhood sexual abuse. *Child Abuse & Neglect, 30*(7), 829–844. https://doi.org/10.1016/j.chiabu.2006.01.003.

Galton, F. (1872). Statistical inquiries into the efficacy of prayer. *Fortnightly Review, 18*, 125–135.

Garssen, B., Visser, A., & de Jager Meezenbroek, E. (2016). Examining whether spirituality predicts subjective well-being: How to avoid tautology. *Psychology of Religion and Spirituality, 8*(2), 141–148. https://doi.org/10.1037/rel0000025.

Gevitz, N. (1991). Christian science healing and the health care of children. *Perspectives in Biology and Medicine, 34*(3), 421–438. https://doi.org/10.1353/pbm.1991.0059.

Glanville, J. L., Sikkink, D., & Hernandez, E. I. (2008). Religious involvement and educational outcomes: The role of social capital and extracurricular participation. *The Sociological Quarterly, 49*(1), 105–137. https://doi.org/10.1111/j.1533-8525.2007.00108.x.

Goldberg, L. R. (1993). The structure of phenotypic personality traits. *American Psychologist, 48*(1), 26–34. https://doi.org/10.1037/0003-066X.48.1.26.

Goleman, D. (1988). *The meditative mind: The varieties of meditative experience*. New York: Tarcher.

Grabenstein, J. D. (2013). What the World's religions teach, applied to vaccines and immune globulins. *Vaccine, 31*(16), 2011–2023. https://doi.org/10.1016/j.vaccine.2013.02.026.

Greene, K. V., & Yoon, B. J. (2004). Religiosity, economics and life satisfaction. *Review of Social Economy, 62*(2), 245–261. https://doi.org/10.1080/00346760410001684460.

Hank, K., & Schaan, B. (2008). Cross-national variations in the correlation between frequency of prayer and health among older Europeans. *Research on Aging, 30*(1), 36–54. https://doi.org/10.1177/0164027507307923.

Harris, A. H. S., Thoresen, C. E., McCullough, M. E., & Larson, D. B. (1999). Spiritually and religiously oriented health interventions. *Journal of Health Psychology, 4*(3), 413–433. https://doi.org/10.1177/135910539900400309.

Harris, A. H. S., McKellar, J. D., Moos, R. H., Schaefer, J. A., & Cronkite, R. C. (2006). Predictors of engagement in continuing care following residential substance use disorder treatment. *Drug and Alcohol Dependence, 84*(1), 93–101. https://doi.org/10.1016/j.drugalcdep.2005.12.010.

Heaven, P. C. L., & Ciarrochi, J. (2007). Personality and religious values among adolescents: A three-wave longitudinal analysis. *British Journal of Psychology, 98*(4), 681–694. https://doi.org/10.1348/000712607X187777.

Hebert, R. S., Weinstein, E., Martire, L. M., & Schulz, R. (2006). Religion, spirituality and the well-being of informal caregivers: A review, critique, and research prospectus. *Aging & Mental Health, 10*(5), 497–520. https://doi.org/10.1080/13607860600638131.

Helliwell, J. F., & Purnam, R. D. (2004). The social context of well–being. *Philosophical Transactions of the Royal Society of London B: Biological Sciences, 359*(1449), 1435–1446. https://doi.org/10.1098/rstb.2004.1522.

Heppner, P. P., Heppner, M. J., Lee, D.-G., Wang, Y.-W., Park, H.-J., & Wang, L.-F. (2006). Development and validation of a collectivist coping styles inventory. *Journal of Counseling Psychology, 53*(1), 107–125. https://doi.org/10.1037/0022-0167.53.1.107.

Hill, T. D., Burdette, A. M., Ellison, C. G., & Musick, M. A. (2006). Religious attendance and the health behaviors of Texas adults. *Preventive Medicine, 42*(4), 309–312. https://doi.org/10.1016/j.ypmed.2005.12.005.

Hodge, D. R. (2007). A systematic review of the empirical literature on intercessory prayer. *Research on Social Work Practice, 17*(2), 174–187. https://doi.org/10.1177/1049731506296170.

Hoffmann, J. P. (2000). Religion and problem gambling in the U.S. *Review of Religious Research, 41*(4), 488–509.

Hollywell, C., & Walker, J. (2009). Private prayer as a suitable intervention for hospitalised patients: A critical review of the literature. *Journal of Clinical Nursing, 18*(5), 637–651. https://doi.org/10.1111/j.1365-2702.2008.02510.x.

Homan, K. J., & Boyatzis, C. J. (2010). Religiosity, sense of meaning, and health behavior in older adults. *The International Journal for the Psychology of Religion, 20*(3), 173–186. https://doi.org/10.1080/10508619.2010.481225.

Hood, R. W., Hill, P. C., & Spilka, B. (2009). *The psychology of religion: An empirical approach* (4th ed.). New York: Guilford.

Hoşrik, E. M., Cüceloğlu, A. E., & Erpolat, S. (2017). Therapeutic effects of Islamic intercessory prayer on warts. *Journal of Religion and Health, 56*(6), 2053–2060. https://doi.org/10.1007/s10943-014-9837-z.

Hummer, R. A., Rogers, R. G., Nam, C. B., & Ellison, C. G. (1999). Religious involvement and U.S. adult mortality. *Demography, 36*(2), 273–285. https://doi.org/10.2307/2648114.

Jaffe, D. H., Eisenbach, Z., Neumark, Y. D., & Manor, O. (2005). Does living in a religiously affiliated neighborhood lower mortality? *Annals of Epidemiology, 15*(10), 804–810. https://doi.org/10.1016/j.annepidem.2004.09.014.

James, W. (1923/1890). *The principles of psychology*. New York: Henry Holt. (originally published in 1890).

James, W. (1961/1902). *The varieties of religious experience: A study in human nature*. New York: Collier. (originally published in 1902).

Johnson, B. T., Scott-Sheldon, L. A. J., & Carey, M. P. (2010). Meta-synthesis of health behavior change: Meta-analyses. *American Journal of Public Health, 100*(11), 2193–2198. https://doi.org/10.2105/AJPH.2008.155200.

Kelly, J. F., Magill, M., & Stout, R. L. (2009). How do people recover from alcohol dependence? A systematic review of the research on mechanisms of behavior change in alcoholics anonymous. *Addiction Research & Theory, 17*(3), 236–259. https://doi.org/10.1080/16066350902770458.

Kern, M. L., & Friedman, H. S. (2008). Do conscientious individuals live longer? A quantitative review. *Health Psychology, 27*(5), 505–512. https://doi.org/10.1037/0278-6133.27.5.505.

Khoury, B., Sharma, M., Rush, S. E., & Fournier, C. (2015). Mindfulness-based stress reduction for healthy individuals: A meta-analysis. *Journal of Psychosomatic Research, 78*(6), 519–528. https://doi.org/10.1016/j.jpsychores.2015.03.009.

Kim, J., Kang, J.-H., Lee, M.-A., & Lee, Y. (2007). Volunteering among older people in Korea. *The Journals of Gerontology: Series B: Psychological Sciences and Social Sciences, 62B*(1), S69–S73. https://doi.org/10.1093/geronb/62.1.S69.

Koenig, H. G., Siegler, I. C., Meador, K. G., & George, L. K. (1990). Religious coping and personality in later life. *International Journal of Geriatric Psychiatry, 5*(2), 123–131. https://doi.org/10.1002/gps.930050210.

Koenig, H. G., Pargament, K. I., & Nielsen, J. (1998). Religious coping and health status in medically ill hospitalized older adults. *Journal of Nervous and Mental Disease, 186*(9), 513–521. https://doi.org/10.1097/00005053-199809000-00001.

Koenig, H. G., McCullough, M. E., & Larson, D. B. (2001). *Handbook of religion and health*. New York: Oxford University Press.

Koenig, H. G., King, D. E., & Carson, V. B. (2012). *Handbook of religion and health* (2nd ed.). Oxford/New York: Oxford University Press.

Krause, N. (2004a). Assessing the relationships among prayer expectancies, race, and self-esteem in late life. *Journal for the Scientific Study of Religion, 43*(3), 395–408. https://doi.org/10.1111/j.1468-5906.2004.00242.x.

Krause, N. (2004b). Common facets of religion, unique facets of religion, and life satisfaction among older African Americans. *Journals of Gerontology. Series B, Psychological Sciences and Social Sciences, 59*(2), S109–S117.

Krause, N. (2006). Exploring the stress-buffering effects of church-based and secular social support on self-rated health in late life. *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences, 61*(1), S35–S43. https://doi.org/10.1093/geronb/61.1.S35.

Kristeller, J. L. (2010). Spiritual engagement as a mechanism of change in mindfulness- and acceptance-based therapies. In R. A. Baer & K. G. Wilson (Eds.), *Assessing mindfulness and acceptance processes in clients: Illuminating the theory and practice of change* (pp. 152–184). Oakland: New Harbinger Publications.

Ladd, K. L., & Spilka, B. (2013). Prayer: A review of the empirical literature. In K. I. Pargament, J. J. Exline, & J. W. Jones (Eds.), *APA handbook of psychology, religion, and spirituality (Vol. 1): Context, theory, and research* (pp. 293–310). Washington, DC: American Psychological Association. https://doi.org/10.1037/14045-016.

Leigh, J., Bowen, S., & Marlatt, G. A. (2005). Spirituality, mindfulness and substance abuse. *Addictive Behaviors, 30*(7), 1335–1341. https://doi.org/10.1016/j.addbeh.2005.01.010.

Levin, J. S. (1996). How prayer heals: A theoretical model. *Alternative Therapies in Health and Medicine, 2*(1), 66–73.

Levin, J. (2009). "And let us make us a name": Reflections on the future of the religion and health field. *Journal of Religion and Health, 48*(2), 125–145. https://doi.org/10.1007/s10943-009-9243-0.

Levin, J. (2016). Prevalence and religious predictors of healing prayer use in the usa: Findings from the baylor religion survey. *Journal of Religion and Health, 55*(4), 1136–1158. https://doi.org/10.1007/s10943-016-0240-9.

Lodi-Smith, J., & Roberts, B. W. (2007). Social investment and personality: A meta-analysis of the relationship of personality traits to investment in work, family, religion, and volunteerism. *Personality and Social Psychology Review, 11*(1), 1–19. https://doi.org/10.1177/1088868306294590.

Lomas, T., Cartwright, T., Edginton, T., & Ridge, D. (2014). A religion of wellbeing? The appeal of Buddhism to men in London, United Kingdom. *Psychology of Religion and Spirituality, 6*(3), 198–207. https://doi.org/10.1037/a0036420.

Mahoney, A., Carels, R. A., Pargament, K. I., Wachholtz, A., Leeper, L. E., Kaplar, M., et al. (2005). The sanctification of the body and behavioral health patterns of college students. *The International Journal for the Psychology of Religion, 15*(3), 221–238. https://doi.org/10.1207/s15327582ijpr1503_3.

Mahoney, A., Pendleton, S., & Ihrke, H. (2006). Religious coping by children and adolescents: Unexplored territory in the realm of spiritual development. In E. C. Roehlkepartain, P. E. King, L. Wagener, & P. L. Benson (Eds.), *The handbook of spiritual development in childhood and adolescence* (pp. 341–354). Thousand Oaks: Sage.

Masters, K. S., & Spielmans, G. I. (2007). Prayer and health: Review, meta-analysis, and research agenda. *Journal of Behavioral Medicine, 30*(4), 329–338. https://doi.org/10.1007/s10865-007-9106-7.

May, T., & Silverman, R. D. (2003). 'Clustering of exemptions' as a collective action threat to herd immunity. *Vaccine, 21*(11–12), 1048–1051. https://doi.org/10.1016/S0264-410X(02)00627-8.

McAdams, D. P., & Olson, B. D. (2010). Personality development: Continuity and change over the life course. *Annual Review of Psychology, 61*, 517–542. https://doi.org/10.1146/annurev.psych.093008.100507.

McCaffrey, A. M., Eisenberg, D. M., Legedza, A. R., Davis, R. B., & Phillips, R. S. (2004). Prayer for health concerns: Results of a national survey on prevalence and patterns of use. *Archives of Internal Medicine, 164*(8), 858–862. https://doi.org/10.1001/archinte.164.8.858.

McConnell, K. M., Pargament, K. I., Ellison, C. G., & Flannelly, K. J. (2006). Examining the links between spiritual struggles and symptoms of psychopathology in a national sample. *Journal of Clinical Psychology, 62*(12), 1469–1484. https://doi.org/10.1002/jclp.20325.

McCullough, M. E., & Larson, D. B. (1999). Prayer. In W. R. Miller (Ed.), *Integrating spirituality into treatment: Resources for practitioners* (pp. 85–110). Washington, DC: American Psychological Association.

Meisenhelder, J. B., & Chandler, E. N. (2001). Frequency of prayer and functional health in presbyterian pastors. *Journal for the Scientific Study of Religion, 40*(2), 323–329.

Mickley, J. R., Pargament, K. I., Brant, C. R., & Hipp, K. M. (1998). God and the search for meaning among hospice caregivers. *Hospice Journal, 13*(4), 1–17. https://doi.org/10.1300/J011v13n04_01.

Miner, M. (2009). The impact of child-parent attachment, attachment to God and religious orientation on psychological adjustment. *Journal of Psychology and Theology, 37*(2), 114–124.

Mouch, C. A., & Sonnega, A. J. (2012). Spirituality and recovery from cardiac surgery: A review. *Journal of Religion and Health, 51*(4), 1042–1060. https://doi.org/10.1007/s10943-012-9612-y.

Myers, D. G. (1997). *Why people of faith can predict null effects in the Harvard prayer experiment [notarized and signed letter]*. http://www.davidmyers.org/davidmyers/assets/prayer-letter.pdf. Accessed 3 March 2014.

Nicholson, A. J. (2013). Is yoga Hindu?: On the fuzziness of religious boundaries. *Common Knowledge, 19*(3), 490–505. https://doi.org/10.1215/0961754x-2281792.

Nilsson, H., & Kazemi, A. (2016). Reconciling and thematizing definitions of mindfulness: The big five of mindfulness. *Review of General Psychology, 20*(2), 183–193. https://doi.org/10.1037/gpr0000074.

Nonnemaker, J. M., McNeely, C. A., & Blum, R. W. (2003). Public and private domains of reli-giosity and adolescent health risk behaviors: Evidence from the national longitudinal study of adolescent health. *Social Science and Medicine, 57*(11), 2049–2054. https://doi.org/10.1016/S0277-9536(03)00096-0.

Nonnemaker, J., McNeely, C. A., & Blum, R. W. (2006). Public and private domains of religiosity and adolescent smoking transitions. *Social Science and Medicine, 62*(12), 3084–3095. https://doi.org/10.1016/j.socscimed.2005.11.052.

Norcross, J. C., Pfund, R. A., & Prochaska, J. O. (2013). Psychotherapy in 2022: A Delphi poll on its future. *Professional Psychology: Research and Practice, 44*(5), 363–370. https://doi.org/10.1037/a0034633.

Offenbächer, M., Sauer, S., Hieblinger, R., Hufford, D. J., Walach, H., & Kohls, N. (2011). Spirituality and the international classification of functioning, disability and health: Content comparison of questionnaires measuring mindfulness based on the International Classification of Functioning. *Disability and Rehabilitation: An International, Multidisciplinary Journal, 33*(25–26), 2434–2445. https://doi.org/10.3109/09638288.2011.573902.

Okun, M. A., Yeung, E. W., & Brown, S. (2013). Volunteering by older adults and risk of mortality: A meta-analysis. *Psychology and Aging, 28*(2), 564–577. https://doi.org/10.1037/a0031519.

Olver, I. N., & Dutney, A. (2012). A randomized, blinded study of the impact of intercessory prayer on spiritual well-being in patients with cancer. *Alternative Therapies in Health and Medicine, 18*(5), 18–27.

Oman, D. (2013). Defining religion and spirituality. In R. F. Paloutzian & C. L. Park (Eds.), *Handbook of the psychology of religion and spirituality* (2nd ed., pp. 23–47). New York: Guilford.

Oman, D. (2015). Cultivating compassion through holistic mindfulness: Evidence for effective intervention. In T. G. Plante (Ed.), *The psychology of compassion and cruelty: Understanding the emotional, spiritual, and religious influences* (pp. 35–57). Santa Barbara: Praeger.

Oman, D., & Bormann, J. E. (in press). Eknath Easwaran's mantram and passage meditation as applied Indian psychology: Psycho-spiritual and health effects. *Psychological Studies*. https://doi.org/10.1007/s12646-018-0448-8.

Oman, D., & Thoresen, C. E. (2002). "Does religion cause health?" Differing interpretations and diverse meanings. *Journal of Health Psychology, 7*(4), 365–380. https://doi.org/10.1177/1359105302007004326.

Oman, D., & Thoresen, C. E. (2007a). Does religion cause health? In A. Eisen & G. Laderman (Eds.), *Science, religion, and society: An encyclopedia of history, culture, and controversy* (Vol. 2, pp. 685–695). Armonk: ME Sharpe.

Oman, D., & Thoresen, C. E. (2007b). How does one learn to be spiritual? The neglected role of spiritual modeling in health. In T. G. Plante & C. E. Thoresen (Eds.), *Spirit, science and health: How the spiritual mind fuels physical wellness* (pp. 39–54). Westport: Praeger.

Oman, D., Shapiro, S. L., Thoresen, C. E., Flinders, T., Driskill, J. D., & Plante, T. G. (2007). Learning from spiritual models and meditation: A randomized evaluation of a college course. *Pastoral Psychology, 55*(4), 473–493. https://doi.org/10.1007/s11089-006-0062-x.

Oviedo, L. (2016). Religious attitudes and prosocial behavior: a systematic review of published research. *Religion, Brain & Behavior, 6*(2), 169–184. https://doi.org/10.1080/2153599X.2014.992803.

Özbay, Ö. (2008). Does social capital deter youth from cheating, alcohol use, and violence in Turkey?: Bringing torpil in. *Journal of Criminal Justice, 36*(5), 403–415. https://doi.org/10.1016/j.jcrimjus.2008.07.006.

Paloutzian, R. F., Richardson, J. T., & Rambo, L. R. (1999). Religious conversion and personality change. *Journal of Personality, 67*(6), 1047–1079. https://doi.org/10.1111/1467-6494.00082.

Pampel, F. (2008). Tobacco use in sub-Sahara Africa: Estimates from the demographic health surveys. *Social Science and Medicine, 66*(8), 1772–1783. https://doi.org/10.1016/j.socscimed.2007.12.003.

Pargament, K. I. (1997). *The psychology of religion and coping: Theory, research, practice*. New York: Guilford.

Pargament, K. I. (2011). Religion and coping: The current state of knowledge. In S. Folkman (Ed.), *The Oxford handbook of stress, health, and coping* (pp. 269–288). New York: Oxford University Press.

Pargament, K. I., Cole, B., Vandecreek, L., Belavich, T., Brant, C., & Perez, L. (1999). The vigil: Religion and the search for control in the hospital waiting room. *Journal of Health Psychology, 4*(3), 327–341. https://doi.org/10.1177/135910539900400303.

Pargament, K. I., Koenig, H. G., & Perez, L. M. (2000). The many methods of religious coping: Development and initial validation of the RCOPE. *Journal of Clinical Psychology, 56*(4), 519–543. https://doi.org/10.1002/(SICI)1097-4679(200004)56:4<519::AID-JCLP6>3.0.CO;2-1.

Pargament, K., Feuille, M., & Burdzy, D. (2011). The brief RCOPE: Current psychometric status of a short measure of religious coping. *Religions, 2*(1), 51–76. https://doi.org/10.3390/rel2010051.

Park, C. L. (2012). Meaning, spirituality, and growth: Protective and resilience factors in health and illness. In A. Baum, T. A. Revenson, & J. E. Singer (Eds.), *Handbook of health psychology* (2nd ed., pp. 405–429). New York: Psychology Press.

Park, T., Reilly-Spong, M., & Gross, C. (2013). Mindfulness: A systematic review of instruments to measure an emergent patient-reported outcome (PRO). *Quality of Life Research, 22*(10), 2639–2659. https://doi.org/10.1007/s11136-013-0395-8.

Peterson, C., & Seligman, M. E. P. (2004). *Character strengths and virtues: A handbook and classification*. Washington, DC/New York: American Psychological Association/Oxford University Press.

Poloma, M. M., & Gallup, G. H. (1991). Unless you forgive others: prayer and forgiveness. In *Varieties of prayer* (pp. 85–106). Philadelphia: Trinity Press.

Post, S. G. (2007). *Altruism and health: Perspectives from empirical research*. Oxford/New York: Oxford University Press.

Price, D. D., Finniss, D. G., & Benedetti, F. (2008). A comprehensive review of the placebo effect: Recent advances and current thought. *Annual Review of Psychology, 59*, 565–590. https://doi.org/10.1146/annurev.psych.59.113006.095941.

Rasmussen, H. N., Scheier, M. F., & Greenhouse, J. B. (2009). Optimism and physical health: A meta-analytic review. *Annals of Behavioral Medicine, 37*(3), 239–256. https://doi.org/10.1007/s12160-009-9111-x.

Regnerus, M. D., & Elder, G. H. (2003). Religion and vulnerability among low-risk adolescents. *Social Science Research, 32*(4), 633–658. https://doi.org/10.1016/S0049-089X(03)00027-9.

Riek, B. M., & Mania, E. W. (2012). The antecedents and consequences of interpersonal forgiveness: A meta-analytic review. *Personal Relationships, 19*(2), 304–325. https://doi.org/10.1111/j.1475-6811.2011.01363.x.

Roberts, B. W., & DelVecchio, W. F. (2000). The rank-order consistency of personality traits from childhood to old age: A quantitative review of longitudinal studies. *Psychological Bulletin, 126*(1), 3–25. https://doi.org/10.1037/0033-2909.126.1.3.

Roberts, L. R., & Montgomery, S. B. (2015). Mindfulness-based intervention for perinatal grief after stillbirth in rural India. *Issues in Mental Health Nursing, 36*(3), 222–230. https://doi.org/10.3109/01612840.2014.962676.

Roberts, B. W., Wood, D., & Caspi, A. (2008). The development of personality traits in adulthood. In *Handbook of personality: Theory and research* (3rd ed., pp. 375–398). New York: Guilford Press.

Roberts, L., Ahmed, I., & Davison, A. (2009). Intercessory prayer for the alleviation of ill health. *Cochrane Database of Systematic Reviews, 2009*(2), 1–73. https://doi.org/10.1002/14651858.CD000368.pub3.

Roe, C. A., Sonnex, C., & Roxburgh, E. C. (2015). Two meta-analyses of noncontact healing studies. *Explore: The Journal of Science and Healing, 11*(1), 11–23. https://doi.org/10.1016/j.explore.2014.10.001.

Roepke, A. M., Jayawickreme, E., & Riffle, O. M. (2014). Meaning and health: A systematic review. *Applied Research in Quality of Life, 9*(4), 1055–1079. https://doi.org/10.1007/s11482-013-9288-9.

Rosa, M. I. D., Silva, F. R., Silva, B. R., Costa, L. C., Bergamo, A. M., Silva, N. C., et al. (2013). A randomized clinical trial on the effects of remote intercessory prayer in the adverse outcomes of pregnancies. *Ciência & Saúde Coletiva, 18*, 2379–2384. https://doi.org/10.1590/S1413-81232013000800022.

Rosch, E. (2007). More than mindfulness: When you have a tiger by the tail, let it eat you. *Psychological Inquiry, 18*(4), 258–264. https://doi.org/10.1080/10478400701598371.

Rubinart, M., Moynihan, T., & Deus, J. (2016). Using the collaborative inquiry method to explore the Jesus prayer. *Spirituality in Clinical Practice*. https://doi.org/10.1037/scp0000104.

Saler, B. (2008). Conceptualizing religion: Some recent reflections. *Religion, 38*(3), 219–225. https://doi.org/10.1016/j.religion.2008.03.008.

Saroglou, V. (2010). Religiousness as a cultural adaptation of basic traits: A five-factor model perspective. *Personality and Social Psychology Review, 14*(1), 108–125. https://doi.org/10.1177/1088868309352322.

Saroglou, V., Delpierre, V., & Dernelle, R. (2004). Values and religiosity: A meta-analysis of studies using Schwartz's model. *Personality and Individual Differences, 37*(4), 721–734. https://doi.org/10.1016/j.paid.2003.10.005.

Sawatzky, R., Ratner, P. A., & Chiu, L. (2005). A meta-analysis of the relationship between spirituality and quality of life. *Social Indicators Research, 72*(2), 153–188. https://doi.org/10.1007/s11205-004-5577-x.

Schwartz, J. E., Friedman, H. S., Tucker, J. S., Tomlinson-Keasey, C., Wingard, D. L., & Criqui, M. H. (1995). Sociodemographic and psychosocial factors in childhood as predictors of adult mortality. *American Journal of Public Health, 85*(9), 1237–1245. https://doi.org/10.2105/AJPH.85.9.1237.

Sedlmeier, P., Eberth, J., Schwarz, M., Zimmermann, D., Haarig, F., Jaeger, S., et al. (2012). The psychological effects of meditation: A meta-analysis. *Psychological Bulletin, 138*(6), 1139–1171. https://doi.org/10.1037/a0028168.

Seeman, T. E., McEwen, B. S., Rowe, J. W., & Singer, B. H. (2001). Allostatic load as a marker of cumulative biological risk: MacArthur studies of successful aging. *Proceedings of the National Academy of Sciences of the United States of America, 98*(8), 4770–4775. https://doi.org/10.1073/pnas.081072698.

Seeman, T. E., Dubin, L. F., & Seeman, M. (2003). Religiosity/spirituality and health: A critical review of the evidence for biological pathways. *American Psychologist, 58*(1), 53–63. https://doi.org/10.1037/0003-066X.58.1.53.

Shaffer, H. J., & Korn, D. A. (2002). Gambling and related mental disorders: A public health analysis. *Annual Review of Public Health, 23*, 171–212. https://doi.org/10.1146/annurev.publhealth.23.100901.140532.

Shaffer, H. J., Hall, M. N., & Vander Bilt, J. (1999). Estimating the prevalence of disordered gambling behavior in the United States and Canada: A research synthesis. *American Journal of Public Health, 89*(9), 1369–1376. https://doi.org/10.2105/AJPH.89.9.1369.

Shahabi, L., Powell, L. H., Musick, M. A., Pargament, K. I., Thoresen, C. E., Williams, D., et al. (2002). Correlates of self-perceptions of spirituality in American adults. *Annals of Behavioral Medicine, 24*(1), 59–68. https://doi.org/10.1207/S15324796ABM2401_07.

Shapiro, S. L., Oman, D., Thoresen, C. E., Plante, T. G., & Flinders, T. (2008). Cultivating mindfulness: Effects on well-being. *Journal of Clinical Psychology, 64*(7), 840–862. https://doi.org/10.1002/jclp.20491.

Shariff, A. F., Willard, A. K., Andersen, T., & Norenzayan, A. (2016). Religious priming: A meta-analysis with a focus on prosociality. *Personality and Social Psychology Review, 20*(1), 27–48. https://doi.org/10.1177/1088868314568811.

Singh, N. N. (2010). Mindfulness: A finger pointing to the Moon. *Mindfulness, 1*(1), 1–3. https://doi.org/10.1007/s12671-010-0009-2.

Skrabski, Á., Kopp, M., Rózsa, S., Réthelyi, J., & Rahe, R. H. (2005). Life meaning: An important correlate of health in the hungarian population. *International Journal of Behavioral Medicine, 12*(2), 78–85. https://doi.org/10.1207/s15327558ijbm1202_5.

Specht, J., Egloff, B., & Schmukle, S. C. (2011). Stability and change of personality across the life course: The impact of age and major life events on mean-level and rank-order stability of the Big Five. *Journal of Personality and Social Psychology, 101*(4), 862–882. https://doi.org/10.1037/a0024950.

Strawbridge, W. J., Shema, S. J., Cohen, R. D., & Kaplan, G. A. (2001). Religious attendance increases survival by improving and maintaining good health practices, mental health, and stable marriages. *Annals of Behavioral Medicine, 23*(1), 68–74. https://doi.org/10.1207/S15324796ABM2301_10.

Struve, A. R., Lu, D.-F., Hart, L. K., & Keller, T. (2016). The use of intercessory prayer to reduce disruptive behaviors of patients with Dementia: A pilot feasibility study. *Journal of Holistic Nursing, 34*(2), 135–145. https://doi.org/10.1177/0898010115587400.

Tan, M.-M., Chan, C. K. Y., & Reidpath, D. D. (2013). Religiosity and spirituality and the intake of fruit, vegetable, and fat: A systematic review. *Evidence Based Complementary and Alternative Medicine*, 146214. https://doi.org/10.1155/2013/146214.

Thoresen, C. E., Oman, D., & Harris, A. H. S. (2005). The effects of religious practices: A focus on health. In W. R. Miller & H. D. Delaney (Eds.), *Judeo-Christian perspectives on psychology: Human nature, motivation, and change* (pp. 205–226). Washington, DC: American Psychological Association. https://doi.org/10.1037/10859-011.

Tieman, M., & Hassan, F. H. (2015). Convergence of food systems: Kosher, Christian and Halal. *British Food Journal, 117*(9), 2313–2327. https://doi.org/10.1108/bfj-02-2015-0058.

Tix, A. P., & Frazier, P. A. (1998). The use of religious coping during stressful life events: Main effects, moderation, and mediation. *Journal of Consulting and Clinical Psychology, 66*(2), 411–422. https://doi.org/10.1037/0022-006X.66.2.411.

Trinkoff, A. M., Zhou, Q., Storr, C. L., & Soeken, K. L. (2000). Workplace access, negative proscriptions, job strain, and substance use in registered nurses. *Nursing Research, 49*(2), 83–90. https://doi.org/10.1097/00006199-200003000-00004.

Uppal, S. (2006). Impact of the timing, type and severity of disability on the subjective well-being of individuals with disabilities. *Social Science and Medicine, 63*(2), 525–539. https://doi.org/10.1016/j.socscimed.2006.01.016.

Vilchinsky, N., & Kravetz, S. (2005). How are religious belief and behavior good for you? An investigation of mediators relating religion to mental health in a sample of Israeli Jewish students. *Journal for the Scientific Study of Religion, 44*(4), 459–471. https://doi.org/10.1111/j.1468-5906.2005.00297.x.

Wachholtz, A. B., & Pargament, K. I. (2005). Is spirituality a critical ingredient of meditation? Comparing the effects of spiritual meditation, secular meditation, and relaxation on spiritual, psychological, cardiac, and pain outcomes. *Journal of Behavioral Medicine, 28*(4), 369–384. https://doi.org/10.1007/s10865-005-9008-5.

Wachholtz, A. B., & Pargament, K. I. (2008). Migraines and meditation: Does spirituality matter? *Journal of Behavioral Medicine, 31*(4), 351–366. https://doi.org/10.1007/s10865-008-9159-2.

Wachholtz, A. B., Malone, C. D., & Pargament, K. I. (2017). Effect of different meditation types on migraine headache medication use. *Behavioral Medicine, 43*(1), 1–8. https://doi.org/10.1080/08964289.2015.1024601.

Wade, N. G., Hoyt, W. T., Kidwell, J. E. M., & Worthington, E. L., Jr. (2014). Efficacy of psychotherapeutic interventions to promote forgiveness: A meta-analysis. *Journal of Consulting and Clinical Psychology, 82*(1), 154–170. https://doi.org/10.1037/a0035268.

Wallace, J. M., Jr., & Forman, T. A. (1998). Religion's role in promoting health and reducing risk among American youth. *Health Education and Behavior, 25*(6), 721–741. https://doi.org/10.1177/109019819802500604.

Wallace, J. M., Jr., Yamaguchi, R., Bachman, J. G., O'Malley, P. M., Schulenberg, J. E., & Johnston, L. D. (2007). Religiosity and adolescent substance use: The role of individual and contextual influences. *Social Problems, 54*(2), 308–327. https://doi.org/10.1525/sp.2007.54.2.308.

Watson, P. J., Ghorbani, N., Davison, H. K., Bing, M. N., Hood, R. W., Jr., & Ghramaleki, A. F. (2002). Negatively reinforcing personal extrinsic motivations: Religious orientation, inner

awareness, and mental health in Iran and the United States. *International Journal for the Psychology of Religion, 12*(4), 255–276. https://doi.org/10.1207/S15327582IJPR1204_04.

Whisman, M. A., Gordon, K. C., & Chatav, Y. (2007). Predicting sexual infidelity in a population-based sample of married individuals. *Journal of Family Psychology, 21*(2), 320–324. https://doi.org/10.1037/0893-3200.21.2.320.

Witter, R. A., Stock, W. A., Okun, M. A., & Haring, M. J. (1985). Religion and subjective well-being in adulthood: A quantitative synthesis. *Review of Religious Research, 26*(4), 332–342.

Wortmann, J. H., & Park, C. L. (2008). Religion and spirituality in adjustment following bereavement: An integrative review. *Death Studies, 32*(8), 703–736. https://doi.org/10.1080/07481180802289507.

Yeung, J. W. K., Chan, Y.-C., & Lee, B. L. K. (2009). Youth religiosity and substance use: A meta-analysis from 1995 to 2007. *Psychological Reports, 105*(1), 255–266. https://doi.org/10.2466/PR0.105.1.255-266.

Yick, A. G. (2008). A metasynthesis of qualitative findings on the role of spirituality and religiosity among culturally diverse domestic violence survivors. *Qualitative Health Research, 18*(9), 1289–1306. https://doi.org/10.1177/1049732308321772.

Yonker, J. E., Schnabelrauch, C. A., & DeHaan, L. G. (2012). The relationship between spirituality and religiosity on psychological outcomes in adolescents and emerging adults: A meta-analytic review. *Journal of Adolescence, 35*(2), 299–314. https://doi.org/10.1016/j.adolescence.2011.08.010.

Zaleski, P., & Zaleski, C. (2005). *Prayer: A history*. Boston/New York: Houghton Mifflin.

Religious/Spiritual Effects on Physical Morbidity and Mortality

Doug Oman

Abstract This chapter reviews theories and empirical evidence on relations between individually measured religion and/or spirituality (R/S), and mortality, physical morbidity, and disability. Most studies have relied on frameworks that recognize a potential causative influence of R/S on health that is mediated through factors such as health behaviors, social support, mental health, and distinctively religious/spiritual methods of coping with stress.

Dozens of empirical studies have examined relations between R/S and longevity, finding generally protective relations against all-cause mortality, with some evidence also suggesting reduced rates of cardiovascular, gastrointestinal, and respiratory mortality. A preponderance of recently systematically reviewed studies have also reported that R/S involvement is associated with morbidity, including lower rates of cardiovascular diseases, cancer, pulmonary disease, dementia, and disability, as well as with better risk profiles on physiological measures that include cardio reactivity, inflammation, and cholesterol. R/S has also been linked to better self-rated health in numerous high-quality studies, although the association may vary somewhat cross-culturally. Most studies of R/S and physical health outcomes have been conducted in the US, but the number of non-US and non-Western studies is growing, and their findings suggest that many favorable R/S-health relations are not confined to the US or Western society.

This chapter is one of thirteen reviews in this volume providing a public health perspective on the empirical evidence relating R/S to physical and mental health.

Keywords Religion · Spirituality · Health · Public health · Epidemiology · Mortality · Morbidity · Disability · Self-rated health · Cross-cultural

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One of the most central questions about religious and spiritual (R/S) factors and health concerns their causal effects on mortality and morbidity. That is, do people who are more highly spiritual and/or religious experience different and perhaps lower risk of mortality, and different or lower rates of morbidity? And are such relations causal in nature?

Such questions pertain especially to the public health subfield of epidemiology, where about one-sixth of public health students are enrolled (see Table 1 in chapter "Reviewing Religion/Spirituality Evidence from a Public Health Perspective: Introduction," this volume). The purpose of the present chapter is to present a brief overview of the considerable body of empirical research that has probed these questions. The available evidence reveals R/S factors are predictive, with varying degrees of consistency, of mortality, many types of morbidity, disability, and measures of overall self-perceived health.

The majority of this research has measured R/S at the level of the individual[1] and has relied on conceptual frameworks much like the generic model presented in the previous chapter, "Model of Individual Health Effects from Religion/Spirituality: Supporting Evidence" (this volume). That is, most studies have postulated that any causal effects of R/S on physical health outcomes may be substantially if not fully mediated by factors such as health behaviors, social connections and support, mental health, and religious/spiritual methods of coping. Measures of many of these potential mediating constructs are commonly present in large epidemiologic data sets. Many studies, and most higher-quality studies of R/S-health, have also controlled for potential confounding factors that might affect both religious/spiritual engagement and physical health. Demographic factors such as age, gender, and ethnicity, are commonly controlled as potential confounders. Pre-existing health status is also commonly controlled, since illness might reduce people's ability or likelihood of attending religious worship services, or might tend to elevate the frequency of their prayers, especially for health.

1 R/S and Mortality: Core Findings

R/S-mortality relations have been the focus of numerous empirical studies, perhaps more than for R/S and any other aspect of physical health. As a "hard" outcome that is free from confounding by reverse causality, all-cause mortality offers particular advantages for investigating R/S-health relations. Findings from R/S-mortality studies have been examined in multiple meta-analytic reviews. The first meta-analysis by McCullough et al. (2000) synthesized 42 independent effect estimates from 29 separate studies, reporting significant overall reductions in mortality for participants who were more engaged in religion (odds ratio [OR] = 1.29; 95%

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[1] See chapter "Social and Community-Level Factors in Health Effects from Religion/Spirituality" (this volume) for a review of the small number of R/S-mortality studies that have employed collective-level R/S measures, such as county counts of congregations (e.g., Blanchard et al. 2008).

confidence interval: 1.20–1.39). Nine years later, a more comprehensive meta-analysis was provided by Chida et al. (2009), who synthesized 69 estimates (from 28 publications) among healthy populations, and 22 estimates (from 11 publications) among diseased populations. They reported that R/S was associated with significantly lower mortality among healthy populations (18% lower risk of death, Hazard Ratio [HR] = 0.82, 95% CI = 0.76–0.87), but not among diseased populations (HR = 0.98, 95% CI = 0.94–1.01). Protective effects remained significant when analyses were restricted to higher quality healthy population studies (18% lower risk, HR = 0.82, 95% CI = 0.76–0.88). Among healthy population studies that controlled for covariates such as health behaviors, negative affect, or social support, the protective effect of religiosity/spirituality also remained significant (13–16% reduced risk of death, with HR of studies that controlled for behavioral factors = 0.85, 95% CI = 0.79–0.92; HR controlled for negative affect = 0.87, 95% CI = 0.81–0.93; HR controlled for social support = 0.84, 95% CI = 0.78–0.91). The protective effect in healthy population studies was somewhat stronger for organizational measures of R/S (e.g., frequency of attendance at worship services, HR = 0.77, CI = 0.71–0.83) and indices that aggregated multiple R/S dimensions (HR = 0.55, CI = 0.38–0.80) than for other R/S dimensions. While most studies synthesized by Chida et al. (2009) were US-based, they also incorporated studies conducted in Denmark, Finland, Israel, and Taiwan. In these non-US studies, apart from mixed findings in two Israeli studies, only favorable R/S-mortality relations were observed.

R/S mortality studies have continued to be published. Koenig et al. (2012) identified an additional eight studies of community-dwelling adults published in April 2008 or later, revealing protective relations similar to those documented by Chida et al. (2009). Among the most striking new publications was a study by Schnall et al. (2008) of more than 90,000 US women. The study reported protective effects against all-cause mortality associated with three R/S measures: attendance at worship services, strength/comfort from religion, and affiliation with a religion (yes/no), controlling for demographics, socioeconomic status, and prior health status. Newer reports have also come from outside the US, documenting favorable R/S-mortality relations in locations ranging from Taiwan to Mozambique (Cau et al. 2013; Zhang 2008). And among diseased populations, Koenig et al. (2012) noted post-2008 studies of medical patients that each reported – somewhat in contradiction to the null findings by Chida et al. (2009) – significantly favorable associations between spirituality and longevity (Ironson and Kremer 2009; Pereira et al. 2010).

2   R/S and Mortality: Interactive and Cause-Specific

Social connections are a component of several dimensions of R/S involvement, perhaps most prominently of attendance at worship services. This has led some social scientists to argue reductively that benefits of religious involvement are entirely attributable to the effects of social support, and that religious social support is "equally substitutable" by other forms of social support (Oman and Reed 1998,

p. 1469). While it certainly makes sense to regard religious and other forms of social support as sharing important features, the notion of fully equivalent functions is not well-supported by theory (e.g., it ignores evidence-based theory for the benefits of R/S coping beyond secular forms of coping – see chapter "Model of Individual Health Effects from Religion/Spirituality: Supporting Evidence", this volume). Empirical studies also suggest that different forms of social support and connection are not equally substitutable for each other. In particular, some meta-analytic evidence now suggests that religious and some other forms of social participation may complement each other in protecting against all-cause mortality. In a recent meta-analysis of 14 volunteering studies, of which two tested religion by volunteering interactions, Okun et al. (2013) concluded that "religious involvement appears to amplify the association between volunteering and mortality risk. Consistent with the complementary hypothesis, the greater resources derived from religious involvement enhance the health related benefits of volunteering" (p. 574).[2]

Finally, R/S measures have also been empirically predictive of lower rates of some cause-specific forms of mortality. Chida et al. (2009) reported R/S was associated with lower rates of cardiovascular mortality (HR = 0.72, 95%CI = 0.58–0.89), based on 6 studies of healthy populations. However, their meta-analysis did not find an association of R/S with cancer mortality in either healthy populations (5 studies, HR = 0.76, 95%CI = 0.55–1.06) or diseased populations (4 studies, HR = 1.01, 95%CI = 0.89–1.15). Through 2010, relations between R/S and gastrointestinal and respiratory mortality have been investigated in two large population-based studies which both reported that attendance at worship services predicted significantly reduced rates of each type of death (Hummer et al. 1999; Oman et al. 2002; Koenig et al. 2012).

3   R/S and Morbidity Overview

Like other psychosocial factors, many of the causal pathways by which religion and spirituality are believed to affect health involve stress responses, sometimes described more technically as allostatic load (Seeman et al. 2001; see also section on Q12 in this volume's chapter, "Questions on Assessing the Evidence Linking Religion/Spirituality to Health"). Variability in such processes translates into raised or lowered susceptibility to many major classes of diseases, but seldom translates into highly specific forms of vulnerability or resistance to narrow classes of disease. Perhaps for this reason, most meta-analyses of psychosocial drivers of health have

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[2] Another recent publication identified a total of 17 studies that contained distinct measures of both R/S-based social participation and other forms of social participation, suggesting the possibility of further analyses of how R/S and other forms of social support may interact (see Table 1 in Shor and Roelfs 2013). These investigators did not report any focused investigation within these 17 studies of within-sample relations of benefits from R/S versus other social supports or their interactions, instead pursuing arguably less powerful and less valid meta-regressions that depended on multiple untested assumptions.

focused either on non-specific outcomes such as all-cause mortality, on fairly broad classes of disease, such as cardiovascular disease, or even on umbrella categories such as "health" (e.g., Backholer et al. 2016; Kondo et al. 2009; Pascoe and Smart Richman 2009; Jim et al. 2015). Only rarely, and most commonly in studies of socioeconomic gradients, have meta-analyses of psychosocial factors examined narrower classes of disease outcomes, such as specific cancers (e.g., Sidorchuk et al. 2009; Yu et al. 2014).

Systematic reviews of R/S factors and physical morbidity outcomes have followed a similar pattern. A refereed systematic review by Powell et al. (2003) examined evidence pertaining to both morbidity and mortality. The authors developed several hypotheses based on assertions in available literature, and then examined evidence using pre-established criteria for study quality and strength of evidence, emphasizing better-quality studies. Regarding hypotheses pertaining to incidence or recovery from physical illness, they found some evidence that religion protects against cardiovascular disease (4 studies), but consistent failures to show that R/S involvement protects against the progression of cancer (5 of 6 studies), and some evidence that certain dimensions of R/S, especially negative forms of R/S coping, may impede recovery from acute illness (3 of 5 studies; see also discussion of R/S struggle in chapter "Model of Individual Health Effects from Religion/Spirituality: Supporting Evidence", this volume).

More recently, a meta-analysis by Jim et al. (2015) focused on a very specific population: Cancer patients. They examined relations of cancer patient R/S to physical symptoms such as fatigue, pain, or problems with cognition or sleep. Based on 242 estimates (effect sizes) derived from 62 samples, they found that R/S measures overall (all types combined) predicted favorable symptom outcomes ($z = 0.154$, $p < 0.001$). As discussed below in the section on disability, Jim et al. (2015) also found salutary relations between R/S and physical functioning.

Perhaps surprisingly, refereed systematic reviews of R/S and physical morbidity outcomes appear to be lacking beyond Powell et al. (2003) and Jim et al. (2015). However, the *Handbook* by Koenig et al. (2012) offers systematic reviews for the most consequential major classes of morbidity, including cardiovascular diseases, cancer, and several others. To generate their reviews, Koenig et al. systematically searched major databases for studies on R/S in each of these classes that were published between 2000 and 2010. Using procedures similar to those employed in the first edition of the *Handbook* (Koenig et al. 2001), Koenig et al. (2012) then systematically classified the design, R/S measures, findings, study location, and overall methodological quality of each empirical study. Information for each study is tabulated in the *Handbook*'s extensive appendices. The *Handbook*'s first edition contains similar information about earlier studies (published before 2000) for a subset of the outcomes covered in the second edition. Aggregate information that corresponds to the 2012 second edition's categories has been summarized in Tables 1, 2, 3, and 4, with totals that also include pre-2000 information from the 2001 first edition whenever the first edition used similar categories (see table notes). Consistent with the present volume's focus on degree of religious/spiritual engagement rather than on denominational differences, the tables only count studies that reported

Table 1 All studies of degree of religion/spirituality and cardiovascular morbidity (through 2010): findings and locations

All studies[a]					
N	+	−	±	∅	Non-US study locations and results (all studies)[a]
					Heart disease[b]
25	15	1	3	6	Albania (+[c]), Italy (+), Israel (+[cd]; +[c]; +), Saudi Arabia (∅), India (+[c]; ∅)
					Cardio reactivity
12	7	1	2	2	Switzerland (+[cd]), India (+[d])
					Cholesterol
23	12	3	0	8	Greece (+[cd]), Italy (−), UK (∅[c]), Algeria (−[d]), Egypt (+[d]), Israel (+[cd]), Middle East (+; +), Turkey (+[d]; +[d]; ∅), India (+[cd])
					Hypertension[b]
61	37	7	2	15	Greece (∅[d]), Italy (+[cd]; +[cd]), Netherlands (∅[cd]), UK (+[cd]; +[cd]; −[c]), West Indies (+), Egypt (+), Israel (∅[d]; ∅[cd]), Kuwait (+[c]), Turkey (−; ±[d]), South Africa (+[c]), India (+[d]), Japan (±[cd]), Taiwan (+; +[cd]), Thailand (+[cd])
					Stroke
16	5	4	1	6	UK (−; ∅[c]), Turkey (∅), Qatar (∅), Japan (±[c])
					Inflammation
10	6	0	0	4	Turkey (+[d]; +[d]; ∅)

Note: Based on counts of studies tabulated in Koenig et al. (2012), or in both *Handbook* editions when tables are available in both (i.e., for heart disease, cholesterol, hypertension, stroke)
[a]Number of studies, N = total, + = favorable relation with R/S was reported, − = unfavorable, ± = mixed, ∅ = null (non-significant) relation with R/S was reported
[b]Counts do not include Alexander et al. (duplicate), McCullagh et al. (no test or comparison), or Burell et al. or Oxman et al. (correspond to 2012 surgery category)
[c]Non-US study of high quality
[d]Non-US prospective study

Table 2 High quality studies of degree of religion/spirituality and cardiovascular morbidity (through 2010): overview of findings

	High quality studies[a]					High quality prospective studies[a]				
	N	+	−	±	∅	N	+	−	±	∅
Condition		(%)[b]	(%)[b]				(%)[b]	(%)[b]		
Heart disease[c]	16	10	1	3	2	8	3	1	2	2
		(63)	(6)				(38)	(13)		
Cardio reactivity	7	3	1	2	1	6	2	1	2	1
		(43)	(14)				(33)	(17)		
Cholesterol	9	5	1	0	3	4	3	0	0	1
		(56)	(11)				(75)	(0)		
Hypertension	40	26	5	1	8	22	16	1	1	4
		(65)	(13)				(73)	(5)		
Stroke	8		1	1	2	2	2	0	0	0
		(50)	(13)				(100)	(0)		
Inflammation	5	4	0	0	1	0	0	0	0	0
		(80)	(0)				−	−		

Table 2 (continued)

Note: Based on counts of high quality studies scoring 7/10 or higher on a quality rating scale as tabulated in Koenig et al.'s (2012) *Handbook*, or in both *Handbook* editions when tables are available in both (i.e., for heart disease, cholesterol, hypertension, stroke)

[a]Number of studies, N = total, + = favorable relation with R/S was reported, − = unfavorable, ± = mixed, ∅ = null (non-significant) relation with R/S was reported

[b]Parentheses show percents of studies reporting relations that were favorable (left) and unfavorable (right)

[c]Counts do not include Burell et al. or Oxman et al. (correspond to 2012 surgery category)

Table 3 All studies of degree of religion/spirituality and major non-caridiovascular morbidity, disability, and self-rated health (2001–2010): findings and locations

N	+	−	±	∅	Non-US study locations and results (all studies)[a]
					Cancer
15	8	1	1	5	Germany (±[b]), Italy (+[b]; +[b]), Taiwan (+[c])
					Diabetes
16	5	4	1	6	Algeria (+), Israel (+[bc]), 13 Muslim countries (−[b]), Morocco (+[b]), India (+[bc])
					Pulmonary diseases
4	3	0	0	1	Sweden (∅[b]), India (+[b])
					Dementia and cognitive function
22	11	3	2	6	Canada (+; +[bc]), Greece (∅), Mexico (−[c]), Israel (∅; −[bc]), Taiwan (±[bc]; ∅[bc])
					Disability[d]
62	22	15	7	18	Canada (±[c]), Australia (−; +), Denmark (∅), Germany (∅), Greece (+), Netherlands (−; ∅[c]), Switzerland (∅), Scotland (+), Latin America (∅[c]), Israel (−[c]), Turkey (−[c]), Afghanistan (+[c]), India (+[bc]), South Korea (∅), Taiwan (∅[bc])
					Self-rated health[d]
10	6	0	0	4	Canada (+), Bosnia (+[c]), Denmark (∅), Finland (+[c]), Italy (+), Poland (∅[c]), Scotland(−), Caribbean (∅[c]), Latin America (+[c]), Mexico (−[c]), Israel (∅[c]), Taiwan (∅[bc]), worldwide (±[c])

The table above is headed "All studies[a]".

Note: Based on counts of studies tabulated in Koenig et al. (2012), or in both *Handbook* editions when tables are available in both (i.e., for cancer, disability, self-rated health)

[a]Number of studies, N = total, + = favorable relation with R/S was reported, − = unfavorable, ± = mixed, ∅ = null (non-significant) relation with R/S was reported

[b]Non-US prospective study

[c]Non-US study of high quality

[d]Musick et al. counted only for self-rated health, but Krause (1998) counted for both disability (∅) and self-rated health (+)

results for an R/S dimension possessing a straightforward interpretation of greater or lesser engagement in R/S belief or practice.[3]

When interpreting findings of how R/S factors relate to morbidity outcomes, it is important to remember that people may turn to religion/spirituality when they expe-

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[3]However, since the category of being Jewish can refer to ethnic identity rather than religious engagement or belief, the tables *do* include studies that compared religious and "secular" Jewish populations.

Table 4 High quality studies of degree of religion/spirituality and major non-caridiovascular morbidity, disability, and self-rated health (2001–2010): overview of findings

Condition	High quality studies[a]					High quality prospective studies[a]				
	N	+ (%)[b]	− (%)[b]	±	∅	N	+ (%)[b]	− (%)[b]	±	∅
Cancer	10	6 (60)	0 (0)	0	5	4	1 (25)	0 (0)	0	2
Diabetes	11	3 (27)	4 (36)	0	4	3	3 (100)	0 (0)	0	0
Pulmonary diseases	2	2 (100)	0 (0)	0	0	1	1 (100)	0 (0)	0	0
Dementia and cognitive function	13	7 (54)	3 (23)	2	1	8	5 (63)	1 (13)	1	1
Disability[c]	34	13 (38)	7 (21)	5	9	14	7 (50)	1 (7)	3	3
Self-rated health[c]	37	21 (57)	3 (8)	6	7	14	7 (50)	1 (7)	3	3

Note: Based on counts of high quality studies scoring 7/10 or higher on a quality rating scale as tabulated in Koenig et al.'s (2012) *Handbook*, or in both *Handbook* editions when tables are available in both (i.e., for heart disease, cholesterol, hypertension, stroke)

[a]Number of studies, N = total, + = favorable relation with R/S was reported, − = unfavorable, ± = mixed, ∅ = null (non-significant) relation with R/S was reported

[b]Parentheses show percents of studies reporting relations that were favorable (left) and unfavorable (right)

[c]Musick et al. counted only for self-rated health, but Krause (1998) counted for both disability (∅) and self-rated health (+)

rience health problems and/or symptoms – either before or after a disease is formally diagnosed. Such possibilities of reverse causality – which may vary in intensity between different conditions and R/S dimensions – place an extra premium on employing high-quality study designs that can reduce confounding by reverse causality. For this reason, we not only summarize the patterns of findings from all published empirical studies (Tables 1 and 3), as well as from only high-quality studies (left-hand set of columns of Tables 2 and 4), but we also summarize findings from high-quality studies that were *prospective* (right-hand columns of Tables 2 and 4). Regardless of which quality/design stratum is examined, reports of favorable relations outnumber reports of unfavorable relations, apart from two exceptions noted below.

4   R/S and Cardiovascular Morbidity

Tables 1 and 2 summarize findings from Koenig et al.'s (2001, 2012) catalogues of results from studies of cardiovascular diseases and related physiological measures. Their analyses focused on reports published from through 2010 that were tabulated

in the *Handbooks*. Table 1 shows that out of 25 total published studies of heart disease outcomes, 15 reported a favorable relation with R/S (i.e., higher levels of R/S were associated with less heart disease). In addition, one study reported an unfavorable association, three studies reported mixed associations, and six studies reported null associations. All but eight of these studies were conducted in the US, with the table indicating that three studies were conducted in Israel, two in India, and one study each in Albania, Italy, and Saudi Arabia. Table 2 focuses on higher quality cardiovascular disease studies that Koenig et al. rated as 7 or better out of 10 on a quality scale. The left-hand columns of Table 2 show that out of the 16 higher quality studies of R/S and heart disease, 63%, or 10 studies reported favorable R/S-heart disease associations (i.e., with less heart disease). Only one high-quality study (6%) reported unfavorable associations (with three reported associations mixed and two null). Two of these higher-quality studies were conducted in Israel and one study each in Albania and India (see Table 1, top right cell, table footnote c).

Finally, examining only R/S-cardiovascular disease studies that were both high quality and *prospective* continues to show favorable results outnumbering the unfavorable: Table 2's right-hand columns show that among eight high-quality prospective studies of R/S and heart disease published through 2010, three studies reported only favorable associations, one reported only unfavorable associations, and two each reported mixed and null associations.

Other results in Table 2 show that favorable findings outnumber unfavorable findings in high-quality studies of how R/S factors relate to stroke, hypertension, and various other physiological risk factors or indicators of cardiovascular disease, including cardio reactivity, inflammation, and cholesterol. Table 1 indicates that majorities of these studies were US-based, but it is noteworthy that several outcomes have received considerable international study, especially hypertension and cholesterol, with international studies also yielding more favorable than unfavorable outcomes (see also chapter "International and Global Perspectives on Spirituality, Religion, and Public Health," this volume).

Such "vote counts" of study findings are merely suggestive, and are offered here for that purpose. Unfavorable results appear much more common than if R/S factors were *always* causally beneficial to a clinically significant degree. More penetrating analyses are needed that can identify and explain the conditions likely to generate favorable versus unfavorable associations, and that test theoretical explanations for the observed patterns. Some initial steps in this direction were taken by Koenig et al. (2012), who offered narrative reviews of how cardiovascular outcomes relate to different R/S dimensions, such as frequency of attendance at worship services, private religious activities, and subjective religiousness/spirituality, although they did not generate specific testable hypotheses. Koenig et al. (2012) concluded that "both past and recent research suggest that there is a weak to moderate inverse relationship between R/S involvement and CHD" (p. 339).

A final cardiovascular topic concerns the relation between R/S factors and outcomes from cardiac surgery. Koenig et al. (2012) identified three post-2000 studies in this area, all high-quality and prospective, with one reporting null results and two reporting that R/S predicted favorable outcomes (e.g., better recovery). Two other pre-2000 studies of cardiac surgery, each high-quality, prospective, and linking R/S

to favorable outcomes, were reported in the *Handbook*'s first edition (Koenig et al. 2001, pp. 555–556, studies by Burrell and Oxman). Such findings are consistent with assertions in the generic model (chapter "Model of Individual Health Effects from Religion/Spirituality: Supporting Evidence", this volume) that religion/spirituality can contribute added coping resources beyond secular coping (see also Mouch and Sonnega 2012, for a conceptual model and broader empirical review).

5   R/S and Other Morbidity

The top four sections of Tables 3 and 4 summarize studies published during or before 2010 about degree of R/S and other major physical disease outcomes that include cancer, diabetes, pulmonary disease, and dementia. Table 4 shows that apart from diabetes, for each outcome, favorable associations with R/S outnumber unfavorable associations among high-quality studies. The small set of international studies, listed in Table 3, also shows a preponderance of favorable findings, offering further confirmation that favorable patterns are not limited to the US. Koenig et al. (2012) note that the preponderance of favorable associations with cancer is consistent with findings from the pre-2000 studies in the *Handbook*'s first edition, as well as with what "would be predicted based on religion's relationship to risk factors for cancer and its progression" (p. 462). For diabetes, it seems plausible that the comparatively large number of unfavorable relations in non-prospective studies may be connected to the less favorable R/S profiles on overweight status, when compared to R/S profiles on other major behavior-related risk factors (see chapter "Model of Individual Health Effects from Religion/Spirituality: Supporting Evidence," this volume; chapter, "Public Health Nutrition, Religion, and Spirituality," this volume). Further investigation is clearly necessary. For dementia and cognitive decline, Koenig et al. (2012) view evidence as suggesting that "R/S involvement may help forestall the development of cognitive decline in later life" (p. 301), although they also noted several complexities in patterns of findings.

6   R/S and Disability

Physical disabilities, such as lack of mobility and the inability to accomplish other activities of daily living, are predicted and believed to be causally influenced by a variety of potential mediating factors that are in turn plausibly influenced by religion/spirituality. These plausible mediating factors include many medical illnesses as well as the risk factors for these illnesses, and therefore include most of the R/S-influenced components of what we have called the generic model for R/S-health relations (Koenig et al. 2012; Stuck et al. 1999). Most relations between R/S and predictors of disability are generally favorable, although exceptions exist (e.g., R/S linkages to higher rates of overweight). But the onset of disability, like the onset of morbidity, may potentially catalyze a "turn to religion." Therefore, as with

morbidity outcomes, studies of the effects of R/S factors on disability must take into account possible confounding due to opposite associations generated by reverse causality.

Notwithstanding possible reverse causality, favorable overall R/S-disability relations appear to prevail among at least one population: cancer patients. Jim et al.'s (2015) meta-analysis examined relations of R/S among cancer patients to functional well-being, that is, abilities to fulfill roles at home, at work, or in the community. Based on 136 effect sizes from 44 samples, they found that R/S measures overall (all types combined) predicted better functional well-being ($z = 0.154$, $p < 0.001$). Similarly, based on 119 effect sizes from 50 samples, Jim et al. also found that R/S measures predicted physical well-being, "an ability to perform activities of daily living ranging from basic self-care to more strenuous physical activities" (p. 3761) ($z = 0.098$, $p < 0.001$).

Similarly, Tables 3 and 4 show that in studies published in 2010 or earlier, favorable R/S-disability associations outnumber unfavorable associations, especially in high quality prospective studies, where favorable studies ounumber unfavorable studies seven to one. Among specific R/S dimensions, Koenig et al. (2012) noted that frequency of attendance at worship services was consistently associated with favorable changes (7 of 7 studies), whereas other dimensions showed more mixed associations. Several international studies also showed favorable associations, including one high-quality prospective study from India, suggesting that such favorable relations are not confined to the US (Tekur et al. 2008). More recently, a prospective Taiwanese study reported a favorable relation between R/S and disability-free life years (Hidajat et al. 2013).

7   R/S and Overall Health

Finally, numerous studies have examined relations between R/S and various overall indicators of physical health, most notably self-rated health, which may represent in part a "condensed summary of information about bodily conditions" (Jylhä 2009, p. 311). Self-rated health has gained increasing epidemiologic attention since a review by Idler and Benyamini (1997) uncovered dozens of studies showing that self-rated health was very often a predictor of mortality that was independent of other well-established factors, such as specific health status indicators.

Tables 3 and 4, in their bottom rows, show that, indeed, studies of R/S and self-rated health are much more likely to report favorable results than unfavorable results (57% versus 8% of high quality studies). Most studies have been US-based, but high-quality studies have also reported favorable findings from several European countries and Latin America, suggesting these relations are not confined to the US. Recently, additional international insight was provided by a cross-national study that employed World Values Survey data from 59 countries (Stavrova 2015, total n = 85,748). Country-specific regressions of self-rated health on a 4-item index of R/S, controlling for sociodemographic variables, yielded coefficients that varied

significantly between countries, suggesting cultural variability in links between R/S and self-rated health. Yet only two regression coefficients were significantly negative (for Albania and Moldova). Coefficients were small but significantly positive and favorable in 20 of the remaining 57 countries. Correlations tended to be more favorable in countries scoring higher on a measure of pro-religious cultural norms – countries that included Indonesia, Iran, Ghana, and Trinidad and Tobago. But significantly favorable associations were also observed in countries with mid-level cultural norm scores such as the United States, Ukraine, and India, as well as in countries with relatively secular public norms, such as Australia, Japan and Viet Nam. Such findings suggest that the phenomenon of favorable R/S-self-rated health associations is culturally widespread, although seemingly not universal.

8   Summary: Effects on Mortality and Morbidity

Several ideas for application to public health practice are provided in Box 1. In summary, reviews of research on R/S as a predictor of mortality and morbidity reveal that:

Box 1: Ideas for Application to Public Health Practice: Effects on Physical Morbidity and Mortality
Evidence on how morbidity and mortality relate to religion/spirituality can inform partnering and relationship-building with religious/spiritual communities and individuals by supporting basic awareness:

- ✓ Be aware and acknowledge the generally favorable associations between R/S engagement and mortality by all causes combined, as well as evidence indicating lower rates of mortality due to cardiovascular, gastro-intestinal, and respiratory causes;
- ✓ Be aware and acknowledge generally favorable associations of R/S factors with higher self-rated health as well as lower rates of disability, cardiovascular disease, cancer, pulmonary disease, and dementia;
- ✓ Remember and acknowledge that not all forms of social engagement and connection may be "equally substitutable" for each other – for example, evidence suggests that engagement in volunteering may *complement* religious involvement, rather than be a substitute for it.

Please see chapters in Part II of this volume for in-depth discussion of the relevance of religion and spirituality to applied public health work. See Part I's first chapter for an overview of major application themes.

- Dozens of studies have examined relations between R/S and longevity, finding generally protective relations against all-cause mortality, with some evidence also for reduced rates of cardiovascular, gastrointestinal, and respiratory mortality (Chida et al. 2009; Oman et al. 2002).
- Theory and evidence suggest that R/S sources of social interaction may at times complement other forms of social engagement, yielding longevity benefits greater than those from either source alone (Okun et al. 2013);
- A preponderance of recently systematically reviewed studies have reported that R/S factors are associated with lower rates of cardiovascular diseases, cancer, pulmonary disease, dementia, and disability, as well as with better risk profiles on physiological measures that include cardio reactivity, inflammation, and cholesterol (Koenig et al. 2012).
- R/S has been linked to better self-rated health in numerous high-quality studies, including some prospective studies, although the strength of this association may vary somewhat cross- culturally (Koenig et al. 2012).
- Most studies of R/S and health outcomes have been conducted in the US, but the number of non-US and non-Western studies is growing, and their findings suggest that many favorable R/S-health relations are not confined to the US or Western society (e.g., Zhang 2008).

References

Backholer, K., Peters, S. A. E., Bots, S. H., Peeters, A., Huxley, R. R., & Woodward, M. (2016). Sex differences in the relationship between socioeconomic status and cardiovascular disease: A systematic review and meta-analysis. *Journal of Epidemiology and Community Health, 71*, 550. https://doi.org/10.1136/jech-2016-207890.

Blanchard, T. C., Bartkowski, J. P., Matthews, T. L., & Kerley, K. R. (2008). Faith, morality and mortality: The ecological impact of religion on population health. *Social Forces, 86*(4), 1591–1620. https://doi.org/10.2307/20430822.

Cau, B. M., Sevoyan, A., & Agadjanian, V. (2013). Religious affiliation and under-five mortality in Mozambique. *Journal of Biosocial Science, 45*(3), 415–429. https://doi.org/10.1017/S0021932012000454.

Chida, Y., Steptoe, A., & Powell, L. H. (2009). Religiosity/spirituality and mortality. *Psychotherapy and Psychosomatics, 78*(2), 81–90. https://doi.org/10.1159/000190791.

Hidajat, M., Zimmer, Z., Saito, Y., & Lin, H.-S. (2013). Religious activity, life expectancy, and disability-free life expectancy in Taiwan. *European Journal of Ageing, 10*(3), 229–236. https://doi.org/10.1007/s10433-013-0273-9.

Hummer, R. A., Rogers, R. G., Nam, C. B., & Ellison, C. G. (1999). Religious involvement and U.S. adult mortality. *Demography, 36*(2), 273–285. https://doi.org/10.2307/2648114.

Idler, E. L., & Benyamini, Y. (1997). Self-rated health and mortality: A review of twenty-seven community studies. *Journal of Health and Social Behavior, 38*(1), 21–37.

Ironson, G., & Kremer, H. (2009). Spiritual transformation, psychological well-being, health, and survival in people with HIV. *International Journal of Psychiatry in Medicine, 39*(3), 263–281. https://doi.org/10.2190/PM.39.3.d.

Jim, H. S. L., Pustejovsky, J. E., Park, C. L., Danhauer, S. C., Sherman, A. C., Fitchett, G., et al. (2015). Religion, spirituality, and physical health in cancer patients: A meta-analysis. *Cancer, 121*(21), 3760–3768. https://doi.org/10.1002/cncr.29353.

Jylhä, M. (2009). What is self-rated health and why does it predict mortality? Towards a unified conceptual model. *Social Science and Medicine, 69*(3), 307–316. https://doi.org/10.1016/j.socscimed.2009.05.013.

Koenig, H. G., King, D. E., & Carson, V. B. (2012). *Handbook of religion and health* (2nd ed.). Oxford/New York: Oxford University Press.

Koenig, H. G., McCullough, M. E., & Larson, D. B. (2001). *Handbook of religion and health*. New York: Oxford University Press.

Kondo, N., Sembajwe, G., Kawachi, I., van Dam, R. M., Subramanian, S. V., & Yamagata, Z. (2009). Income inequality, mortality, and self rated health: Meta-analysis of multilevel studies. *British Medical Journal, 339*, b4471. https://doi.org/10.1136/bmj.b4471.

Krause, N. (1998). Neighborhood deterioration, religious coping, and changes in health during late life. *The Gerontologist, 38*(6), 653–664. https://doi.org/10.1093/geront/38.6.653.

McCullough, M. E., Hoyt, W. T., Larson, D. B., Koenig, H. G., & Thoresen, C. (2000). Religious involvement and mortality: A meta-analytic review. *Health Psychology, 19*(3), 211–222. https://doi.org/10.1037/0278-6133.19.3.211.

Mouch, C. A., & Sonnega, A. J. (2012). Spirituality and recovery from cardiac surgery: A review. *Journal of Religion and Health, 51*(4), 1042–1060. https://doi.org/10.1007/s10943-012-9612-y.

Okun, M. A., Yeung, E. W., & Brown, S. (2013). Volunteering by older adults and risk of mortality: A meta-analysis. *Psychology and Aging, 28*(2), 564–577. https://doi.org/10.1037/a0031519.

Oman, D., Kurata, J. H., Strawbridge, W. J., & Cohen, R. D. (2002). Religious attendance and cause of death over 31 years. *International Journal of Psychiatry in Medicine, 32*(1), 69–89. https://doi.org/10.2190/RJY7-CRR1-HCW5-XVEG.

Oman, D., & Reed, D. (1998). Religion and mortality among the community-dwelling elderly. *American Journal of Public Health, 88*(10), 1469–1475. https://doi.org/10.2105/AJPH.88.10.1469.

Pascoe, E. A., & Smart Richman, L. (2009). Perceived discrimination and health: A meta-analytic review. *Psychological Bulletin, 135*(4), 531–554. https://doi.org/10.1037/a0016059.

Pereira, D. B., Christian, L. M., Patidar, S., Bishop, M. M., Dodd, S. M., Athanason, R., et al. (2010). Spiritual absence and 1-year mortality after hematopoietic stem cell transplant. *Biology of Blood and Marrow Transplantation, 16*(8), 1171–1179. https://doi.org/10.1016/j.bbmt.2010.03.003.

Powell, L. H., Shahabi, L., & Thoresen, C. E. (2003). Religion and spirituality: Linkages to physical health. *American Psychologist, 58*(1), 36–52. https://doi.org/10.1037/0003-066X.58.1.36.

Schnall, E., Wassertheil-Smoller, S., Swencionis, C., Zemon, V., Tinker, L., O'Sullivan, M. J., et al. (2008). The relationship between religion and cardiovascular outcomes and all-cause mortality in the women's health initiative observational study. *Psychology & Health, 25*(2), 249–263. https://doi.org/10.1080/08870440802311322.

Seeman, T. E., McEwen, B. S., Rowe, J. W., & Singer, B. H. (2001). Allostatic load as a marker of cumulative biological risk: MacArthur studies of successful aging. *Proceedings of the National Academy of Sciences of the United States of America, 98*(8), 4770–4775. https://doi.org/10.1073/pnas.081072698

Shor, E., & Roelfs, D. J. (2013). The longevity effects of religious and nonreligious participation: A meta-analysis and meta-regression. *Journal for the Scientific Study of Religion, 52*(1), 120–145. https://doi.org/10.1111/jssr.12006.

Sidorchuk, A., Agardh, E. E., Aremu, O., Hallqvist, J., Allebeck, P., & Moradi, T. (2009). Socioeconomic differences in lung cancer incidence: A systematic review and meta-analysis. *Cancer Causes & Control, 20*(4), 459. https://doi.org/10.1007/s10552-009-9300-8.

Stavrova, O. (2015). Religion, self-rated health, and mortality. *Social Psychological and Personality Science, 6*(8), 911–922. https://doi.org/10.1177/1948550615593149.

Stuck, A. E., Walthert, J. M., Nikolaus, T., Büla, C. J., Hohmann, C., & Beck, J. C. (1999). Risk factors for functional status decline in community-living elderly people: A systematic literature review. *Social Science and Medicine, 48*(4), 445–469. https://doi.org/10.1016/S0277-9536(98)00370-0.

Tekur, P., Singphow, C., Nagendra, H. R., & Raghuram, N. (2008). Effect of short-term intensive yoga program on pain, functional disability and spinal flexibility in chronic low back pain: A randomized control study. *Journal of Alternative & Complementary Medicine, 14*(6), 637–644. https://doi.org/10.1089/acm.2007.0815.

Yu, D., Feng, Y., Yang, L., Da, M., Fan, C., Wang, S., et al. (2014). Maternal socioeconomic status and the risk of congenital heart defects in offspring: A meta-analysis of 33 studies. *PLoS One, 9*(10), e111056. https://doi.org/10.1371/journal.pone.0111056.

Zhang, W. (2008). Religious participation and mortality risk among the oldest old in China. *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences, 63*(5), S293–S297. https://doi.org/10.1093/geronb/63.5.S293.

Social and Community-Level Factors in Health Effects from Religion/Spirituality

Doug Oman and S. Leonard Syme

Abstract This chapter reviews theories and empirical evidence on relations between religion and spirituality (R/S) and social factors. Religion and spirituality are conceived as evolving over time and residing at both collective and individual levels.

We first examine how community-level measures of R/S have predicted health outcomes, finding evidence in diverse ethnic groups for largely favorable effects on longevity, suicide, depression, psychological well-being, and/or self-rated health. Religious involvement is an enormous source of social capital, but different R/S dimensions and traditions are linked to different forms of social capital with different implications. Studies link R/S to higher US adolescent educational attainment, but R/S relations with socioeconomic status vary considerably across nations and cultures. Income inequality appears to spur religiousness, but R/S measures correlate little with economic attitudes. Evidence links community and individual R/S to lower crime and violence and buffering against diverse community-level stressors. Religion/spirituality also serve as resources for responding to disasters. We conclude by discussing the bases and promise of multi-level interventions that address R/S factors, and potential benefits from more broadly salutogenic approaches.

This chapter is one of thirteen reviews in this volume providing a public health perspective on the empirical evidence relating R/S to physical and mental health; with the next chapter ("Social Identity and Discrimination in Religious/Spiritual Influences on Health"), this is one of two reviews emphasizing factors of interest to social epidemiology.

Keywords Social capital · Socioeconomic status · Income inequality · Crime · Religion · Spirituality · Health · Public health · Social epidemiology · Spiritual intervention

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Social factors have emerged as a major topic of study in public health in recent decades. Widespread recognition of the importance of social factors has been reflected in the emergence of public health courses with titles such as "Health and Social Behavior" (Berkeley) or "Social Factors in Health" (Johns Hopkins), as well as the publication of many recent textbooks in social epidemiology (Berkman and Kawachi 2000; Berkman et al. 2014; Oakes and Kaufman 2006; Cwikel 2006; O'Campo and Dunn 2012).

Social factors are conceived as facets or features of the human environment, in contrast to physical factors (e.g., lead paint), and biological factors present in the natural environment (e.g., mosquitos). These three facets of the environment may mutually influence each other, as people shape their physical and natural environments, which in turn inform and constrain human culture and behavior. The local human, physical, and biological environments are three primary components of what may be called the community environment. Within the human environment, we may in turn identify social, economic and cultural components that partly overlap with each other.

This is the first of two chapters that review theory and evidence on the roles that social and other community-level factors play in the relations between religion/spirituality (R/S) and health. This volume's next chapter, entitled "Social Identity and Discrimination in Religious/Spiritual Influences on Health", represents a continuation of the present chapter's focus on social factors. The conceptual framework underlying each of these chapters is represented in Fig. 1. Community-level factors are represented in the top row (Boxes A and B), and individual-level factors are represented in the middle row (e.g., Boxes C, D). Religion and spirituality are conceived as multidimensional and partly overlapping with each other, and as residing at both the community level (Box A) and the individual level (Box C) (for discussion of definitions and overlapping meanings of "religion" and "spirituality," see chapters "Elephant in the Room: Why Spirituality and Religion Matter for Public Health" and "Questions on Assessing the Evidence Linking Religion/Spirituality to Health", this volume).

The present chapter's focus on factors conceptualized and/or measured at the community level complements the individual-level focus of this volume's earlier chapter entitled "Model of Individual Health Effects from Religion/Spirituality: Supporting Evidence". Examples of social and community-level factors that have drawn considerable attention and empirical documentation in public health research include socioeconomic status, social capital, social networks and support, society-wide income inequality, and ethnicity (Berkman and Kawachi 2000; Braveman et al. 2011; Schneider 2011). Race has been studied as both a social factor, where it predicts many health outcomes, and as a marker for genetic factors, where evidence suggests that genetic illnesses are only rarely linked to specific racial groups (Frank 2007; Collins 2004).

Including religion in the list of important social factors would seem a straightforward and obvious consequence of definitions of social factors such as "the circumstances in which people are born, grow up, live, work, and age" (Idler 2014a,
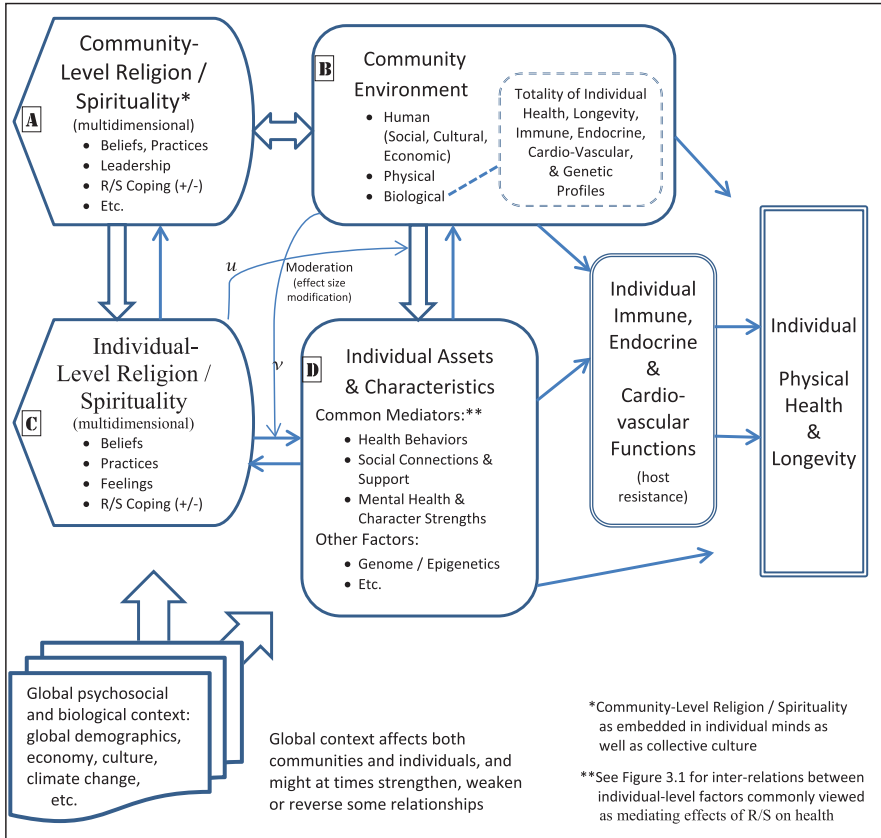
Fig. 1   Model of how community-level religion/spirituality causally affects physical health

p. 8).[1] Indeed, religion is widely admitted as perhaps the single largest source of social capital in the US (Smidt 2003a; Putnam 2000). Religion is also widely understood as socioculturally shaped, influenced, and perhaps constituted. One might expect, therefore, that the field of social epidemiology would long ago have incorporated the study of R/S factors as one of its major recognized subfields. Indeed, an array of articles has appeared in public health journals that emphasize R/S as a social epidemiologic topic (Levin 1996; Maselko et al. 2011; Chatters 2000). However, widespread recognition has been lacking. R/S factors are seldom mentioned in most social epidemiology textbooks, and only recently have books emerged about religion and health that highlight an explicit social epidemiology

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[1] Idler (2014a) is quoting the World Health Organization's Commission on the Social Determinants of Health, but she notes that religion was "notably… not mentioned among the 'wider set of forces'…. A blind spot in nearly all of the current work on social determinants" (pp. 8–9) (see also chapter "Elephant in the Room: Why Spirituality and Religion Matter for Public Health" this volume).

approach (i.e., Idler 2014b). Perhaps it is ironic that the R/S-health topic has been so highly marginalized in a field with a major focus on overcoming inequality and marginalization.

1   A Dynamic and Evolving Conception

Importantly, as we outline below, theory suggests that community-level R/S factors, like individual-level R/S factors, may potentially exert either beneficial or detrimental influence on health. For example, R/S traditions espouse values and behaviors that oppose crime, a social factor that is detrimental to health. And as Idler (2014a) has discussed in detail, religion is clearly relevant to economic inequality, one of the most important and highly studied social determinants of public health. Research in diverse societies worldwide documents an adverse and probably causal association between greater inequality and worse health (e.g., Kondo et al. 2009; Pickett and Wilkinson 2015; Wilkinson and Pickett 2006). Idler (2014a) notes that religion may act to reduce inequality itself, to buffer the adverse impact of inequality, or, in a negative manner, to exacerbate inequality.

Pro-equity influences from religion, when they occur, are consistent with the universality of *justice* as a central value in human culture and in much religion. Human *strength for enacting justice* is one of six major classes of virtues that positive psychologists Peterson and Seligman (2004) have identified as universally recognized across all human cultures, and most if not all R/S traditions teach the importance of enacting justice. For example, Idler (2014a) notes that "religious narratives about overcoming slavery and injustice, as in the exodus of the people of Israel from Egypt or the cries of the Old Testament prophets for social reform, provide models for a moral response to power and hope for peace and justice in the future for those who are oppressed in the present" (p. 15). Similarly, the Roman Catholic Church has published encyclicals about the dignity of labor, affirming that "Justice is the primary way of love… the constant and firm will to give to each what is due" (Melé 2011, p. 122) (see also Francis 2015).[2]

But human perceptions of the requirements of justice have changed a great deal over time, as reflected in the de-legitimation and then abolition of slavery, and the promulgation of numerous types of universal human rights. Religious traditions have taught the sanctity of justice as an abstract principle, but have also sanctified various specific principles or customs viewed as fostering the conditions of justice (e.g., jubilee as debt forgiveness, Donnelly 2007). The sanctification of what Pargament (1997, p. 60) calls "religious means," in addition to justice *per se* as a

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[2] For example, the recent Roman Catholic papal encyclical on the environment states that "we have to realize that a true ecological approach *always* becomes a social approach; it must integrate questions of justice in debates on the environment, so as to hear *both the cry of the earth and the cry of the poor*" (Francis 2015, p. 30, paragraph 49, emphasis in original).

more abstract "religious end," enhances the ability of the R/S concern for justice to produce beneficial practical behavior that effectively fosters justice in society.

But the sanctification of religious means, such as codes of behavior within specific relational contexts, also opens various risks. On the one hand, sanctified codes can become too highly aligned with powerful vested interests (e.g., in the middle ages, sales of indulgences by the Roman Catholic Church). On the other hand, codes may potentially become antiquated by progressive cultural and spiritual evolution before they lose their official sanction (e.g., churches that resisted abolition of slavery). Changing and evolving views of justice are affected by diverse social, cultural, economic, and spiritual factors. Religious teachings about justice may evolve at correspondingly different rates in different communities, leading at times to profound disagreements between religious communities, as has happened on the abolition of slavery (Hammond 1974; McKivigan 1984; Budros 2005). In recent decades, widespread disagreements between religious communities as well as between religious individuals have been evident on justice-related issues that include the obligations of male and female spouses within a marriage and the legitimacy of same-sex marriage. Religious groups also show diverse attitudes towards the contemporary market-centered economic philosophies. Whereas sociologist Max Weber famously documented how certain forms of Protestant Christianity contributed to the rise of capitalism, the Roman Catholic social teachings are usually viewed as more ambivalent – a recent papal encyclical, for example, objects to the "deified market" (Francis 2015, p. 35, paragraph 56). One major tradition, Islam, has recently inspired an "interest-free" system of banking (Khan 2011, p. 142) that now manages more than $700 billion in assets across 75 countries (Khan and Bhatti 2008; Reed 1995; Weber 1992).

Thus, through such processes, community-level R/S may causally generate either favorable or unfavorable effects on justice and health. Yet reverse causality is also a possibility. It is well known that individuals as well as communities may turn to religion for strength and comfort in times of distress.[3] For example, after the attacks of September 11, 2001, levels of religious observance were elevated for a few weeks, but then reverted to normal (Hood et al. 2009; Walsh 2002). Such processes can generate easily misinterpreted associations between R/S observance and *greater* distress at both individual and community levels. Conversely, when life circumstances become less distressing and coping is easier, some people may attenuate or discard their previous coping practices, including religious and spiritual practices (although, consistent with R/S teachings, other people may intentionally seek and enduringly succeed in viewing their success through a spiritual lens that motivates continued intensity of R/S practice). At the community level, the tendency to relax suggests the possibility that community affluence could causally lead

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[3] For example, consistent with such widely accepted perspectives, one cross-national European study found that religiousness was independently predicted by both economic and existential insecurity, measured at both individual levels (e.g., unemployment, loss of partner) and collective levels (unemployment rate, experience of war) (Immerzeel and van Tubergen 2013, European Values Study, 26 countries, n = 65,266).

to reduced religiousness, which would be observable as an inverse (negative) relation between *community-level* R/S and health.

From a theoretical standpoint, therefore, R/S factors may be expected to exhibit complex patterns of relations to social factors through several types of causality, both direct and reversed. As described in the following subsections, such complexity and bivalent relations are indeed apparent in the available empirical literature. The design and delivery of spiritually-infused multi-level interventions must be considered in light of these complex and evolving relations (Smedley and Syme 2000; Oman 2013).

2   Topic Reviews

In the following subsections, we review empirical evidence on the relation of religion/spirituality to several social and community-level factors of interest to public health. After examining how community-level measures of R/S have shown predictive power for longevity and health, we examine evidence related to social capital, socio-economic status and inequality, violence and crime, and coping with community stressors such as disasters. We also describe evidence that individual-level R/S factors can moderate the impact of community-level factors, and conclude by discussing salutogenic approaches and the bases and promise of multi-level interventions that address R/S factors. Social identity and discrimination are examined in the following chapter, entitled "Social Identity and Discrimination in Religious/ Spiritual Influences on Health" (this volume).

Social support, another topic of major social epidemiologic interest has seldom if ever been measured at the community level, and its relation to R/S is reviewed at greater length in the chapter "Model of Individual Health Effects from Religion/ Spirituality: Supporting Evidence". As noted there, the proposition that religious involvement fosters social connections has never been controversial: More than five dozen studies, most conducted in Europe or North America, as well as a small number conducted elsewhere, have documented significant positive realtions between R/S factors and measures of social support (see Koenig et al. 2012, pp. 303, 306, 687–693; non-Western studies include Al-Kandari 2003; Heppner et al. 2006).

Published studies that we review in the following sections have employed community-level units of analysis that have ranged from census tracts to nations. Two main strategies for measuring community-level R/S factors have been to use counts of religious organizations, or, much more commonly, averages of individual survey responses to a census or, not infrequently, to the researchers' own survey. Much of the international evidence cited in the following subsections is derived from major multi-wave international surveys, such as the World Values Survey (WVS), the European Values Study (EVS), and the European Social Survey (ESS).

Importantly, community-level and individual-level factors do not operate in isolation. Factors such as social networks have long been measured and studied on multiple levels. Therefore, although the following sections give special emphasis to

community-level measures, they also describe many relevant findings based on corresponding individual-level measures. And with only a few partial exceptions (e.g., Haynes et al. 2017; Joshanloo and Weijers 2016a), the overwhelming majority of reviewed evidence pertains to religion rather than spirituality, perhaps in part because of more options to measure religion at a community level[4] (for relation between religion and spirituality, see chapter "Elephant in the Room: Why Spirituality and Religion Matter for Public Health" this volume).

2.1 Community Level Religious Effects on Longevity and Health

A variety of studies have examined health and/or longevity outcomes from religion measured at the level of the community environment. In one of the more ambitious recent studies, Blanchard et al. (2008) investigated how 1998–2002 standardized mortality rates in 3068 contiguous US counties were predicted by county-level variables that included the religious composition of each county (operationalized by counts of congregations), as well as control variables that included ethnic minority concentration, an indicator of health infrastructure, metropolitan status, population size, average income, and income inequality (Gini coefficient). Findings strongly supported hypotheses that lower mortality would be associated with greater concentration of Catholic, mainline Protestant, and Evangelical congregations, perhaps because these groups tend to be more externally and socially engaged, which may foster collective efficacy as well as encourage helping the needy, efforts to promote social justice, and support for public health infrastructure. In contrast, the presence of Pentecostal and fundamentalist Protestantism, which are more insular and espouse an "otherworldly theology" (p. 1610), were each associated with higher standardized mortality rates. Similar patterns were observed for specific causes of death that included curculatory diseases, cancer, and respiratory diseases (Blanchard et al. 2008). More recently, similarly constructed religious measures for 1900 US counties were also found to predict infant mortality rates, with largely similar patterns of advantage and disadvantage (Bartkowski et al. 2011). A higher state-level average *importance* of religion, however, has been linked to higher infant mortality rates and teen birth rate (Kimball and Wissner 2015).

These longevity findings were consistent with an earlier and more narrowly focused study by Dwyer et al. (1990), who used 1968–1980 data to examine how US county denominational composition was related to county mortality rates for various types of cancer. These investigators reasoned that the different content and

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[4] Counts of religious congregations have been used to measure community-level religion, but no analogous strategy seems possible for measuring community-level spirituality, which possesses non-organizational connotations. More feasible is to measure community-level spirituality as the mean of individual-level spirituality assessments of community members, although it is unclear if any studies have done so (see also chapter in this volume entitled "Social Identity and Discrimination in Religious/Spiritual Influences on Health").

intensity of denominational teachings about health behaviors would result in different risks for various types of cancers. The investigators found that even when controlling well-established group-level predictors that included demographic, environmental, and regional factors, religious denominational composition independently predicted mortality rates from respiratory, digestive, and all malignancies combined (Dwyer et al. 1990).

Outside of the US, some Israeli studies have also measured religion at the community level. For example, as noted in this volume's chapter entitled "Environmental Health Sciences, Religion, and Spirituality", an Israeli study reported that lower neighborhood-level mortality rates were significantly and favorably related to neighborhood-level religiousness, perhaps because R/S promoted "healthy behaviors and attitudes, reduction of stress, and the formation of strong social bonds" (Jaffe et al. 2005, p. 807). Earlier studies by Kark and colleagues had compared religious versus secular kibbutzim (n = 22), finding greater longevity in religious kibbutzim despite similarities in ethnicity, education, occupation, standard of living, and apparently only small and unexplanatory differences in social support, health behaviors and various physical, physiologic and biochemical measures (Kark et al. 1996a, b). Members of religious kibbutzim displayed lower levels of hostility and a higher sense of coherence, "consistent with an interpretation that Jewish religious observance may enhance the formation of certain protective personality characteristics [and thereby] increase host resistance to stressors" (Kark et al. 1996a, p. 185).

Aggregate group-level religious variables were perhaps most famously employed in Durkheim's (1951/1897) classic analyses of suicide, which argued that Catholic versus Protestant differences in religious culture could affect suicide rates. While Durkheim's original ideas have often required "rethinking and adaptation" when applied to new contexts, subsequent suicide research has confirmed that suicide rates often show religious patterning (Wray et al. 2011, p. 513). A range of recent studies have examined R/S-suicide relations using aggregate- or mixed-level analyses for grouping units ranging from municipalities to countries. For example, a study of 870 Dutch municipalities from 1936 to 1973 found that higher proportions of religious people in a community were associated with lower suicide rates among both religious and nonreligious individuals, results that "confirm the notion that religious communities have a general protective effect" (Van Tubergen et al. 2005, p. 797). A US study of 296 Standardized Metropolitan Statistical Areas (SMSAs) found that greater religious homogeneity predicted lower suicide rates from 1979 to 1981, especially in the Northeastern US, an effect that persisted despite controls for well-established predictors (Ellison et al. 1997). More recently, proportions of religious adherents in 920 US counties have been found to predict US Latino suicide rates (Barranco 2016). And Moore (2015) reported that religious heterogeneity predicted higher national suicide rates in 41 countries across 4 continents, even after adjusting for urbanism, population density, degrees of development and democracy, and income inequality (Gini coefficient).

Some studies have examined impacts of community R/S on various self-reported or psychosocially assessed outcomes, finding generally favorable effects. For example, better self-rated health was found to be predicted by a country's average

national levels of the importance of God or religion (Helliwell and Purnam 2004, 49 countries, n = 83,520). Similarly, better self-rated health in Canada was positively predicted by average census-level importance of God or religion (Helliwell and Purnam 2004, n = 7483). And lower rates of elderly female depression were found in European countries with higher rates of regular church attendance (Braam et al. 2001, 11 countries, n = 17,739). However, another country-level study reported that psychological well-being correlated positively with beliefs in heaven and negatively with beliefs in hell (Shariff and Aknin 2014, 68 countries). Finally, a much more locally-oriented US-based study discovered that closures of religious congregations, especially Roman Catholic congregations, predicted declines in neighborhood indices of well-being and vitality (Kinney and Combs 2016, census tracts in Saint Louis County, n ≈ 200). Thus, in several different nations, community-level R/S measures have been found to predict, often favorably, outcomes ranging from reduced all-cause mortality, suicide, and depression to enhanced psychological well-being.

2.2   Social Capital and Social Cohension

The concept of social cohesion, stemming from the work of Durkheim (1951/1897), refers to two intertwined features of a group: strong bonds and absence of latent conflict (Kawachi and Berkman 2000). It is closely related to one of the important connotations of a currently popular term, "social capital," which may refer either to an individual-level or to a group-level attribute (Portes 2000). As initially developed by sociologists Pierre Bourdieu and James Coleman, social capital was an individual-level construct that referred to an individual's social relationships and the resources to which they gave access (Fig. 1, Box D). In the 1990s, political scientist Robert Putnam (1993, p. 36) extended the term to refer to a group's, community's, or even nation's "stock" of relationships that facilitate activity and access to resources, yielding a group-level construct referring to important features of the community environment (Fig. 1, Box B).

Some early public health writings defined social capital as inherently a "public good" (Kawachi and Berkman 2000, p. 177). Yet as Portes (1998, p. 18) pointed out, "sociability cuts both ways. While it can be the source of public goods… [social capital] can also lead to public 'bads'" such as exclusion of outsiders, excess claims on group members, restrictions on individual freedom, and downward levelling norms. More generally, concerns were soon expressed that the social capital construct was ambiguous and undertheorized (Wakefield and Poland 2005), and it has been recurrently described as an "umbrella concept" that possesses an urgent need to be parsed into coherent components (Brunie 2009, p. 252).

Thus, several different *types* of social capital have been identified, including *bonding* with "people similar to oneself," *bridging* with people who are different but at similar status levels, and *linking* between people at different levels in social hierarchies (Ferlander 2007, p. 119). It has been said that bonding social capital is most vital for "getting by," whereas bridging social capital is most important for

"getting ahead" (Ferlander 2007, p. 119, quoting X. S. Briggs). The literature also distinguishes between ties that are *strong* versus *weak* in emotional closeness, and *formal* versus *informal* ties, such as those reflecting organizational versus ad-hoc individual contexts and motivations. Families commonly represent networks of strong ties that are bridging with regard to age and gender. An additional distinction is between *cognitive* components of social capital (e.g., social trust) and *structural* components (e.g., group memberships) (Story 2013). Finally, while the social capital construct was preceded by the notion of "human capital" used by economists to designate productive skills, these two concepts have in turn inspired more recent and sometimes controversial extensions, still contested and not yet in widespread use, that include religious capital and spiritual capital[5] (Baker and Miles-Watson 2010; Montemaggi 2011).[6]

Community-level social capital and social cohesion have generated ongoing public health interest (e.g., Ferlander 2007; Kawachi and Berkman 2000). A recent meta-analysis reported that compared to measures of individual-level social capital, measures of social capital at an ecological (group) level showed a stronger overall favorable relation to physical health (k = 16, OR = 1.36, Gilbert et al. 2013). However, a mixture of favorable and unfavorable associations has been found between ecological level social capital and mental illness (k = 7, De Silva et al. 2005). Only a very small number of studies have examined collective-level social capital in lesser-developed countries, also yielding mixed results (Story 2013).

Religious involvement is an enormous source of group-level social capital – in the US, the single largest source, according to Putnam (2000). Smidt's (2003b, p. 217) edited book examined much of the early theory and research on how social capital is related to religion, suggesting that religious social capital may be distinctive in terms of quantity, durability, and range, partly because "religions often encourage their adherents to deal positively with others, regardless of the particular benefits that may or may not be derived from such relationships." Similarly, Putnam (2000) noted that compared to other voluntary associations, membership in religious groups is "most closely associated with other forms of civic involvement, like voting, jury service, community projects, talking with neighbors, and giving to charity" (p. 67).

A handful of studies have examined how community-level religious measures (Fig. 1, Box A) are related to other measures of social capital. Consistent with Portes (1998, p. 18), and the cultural evolutionary perspective presented earlier in this chapter, linkages have been observed to both "goods" and to "bads." One of the rare US-based aggregate-level studies of religion and social capital investigated crime rates in 3157 counties (Beyerlein and Hipp 2005). The investigators drew on prior

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[5] Reviewing multiple academic definitions, Baker and Miles-Watson (2010, p. 63) note that "religious and spiritual capital are contested terms [while] the public space into which they are placed is increasingly complex and fluid."

[6] Even leaving aside its emerging derivatives, the "umbrella" notion of social capital encompasses a wide array of other constructs ranging from social trust to network ties, most of which were the focus of pre-existing empirical literatures. Such conceptual breadth and terminological diversity pose obstacles to comprehensive reviews. Hence the present subsection will emphasize primarily literature that explicitly self-identifies as about social capital.

research documenting that due to contrasting theological orientations "adherents of the major U.S. religious traditions behave in ways that give rise to very different network structures in communities" (p. 998). More specifically, mainline Protestants and Catholics tend to develop bridging capital supporting "broad network structures that allow communities to mobilize effectively to protect collective interests" (p. 997), whereas Evangelical Protestant communities are more inwardly-focused and disproportionately foster bonding capital. Consistent with expectations, even after numerous adjustments, proportions in each county of Evangelicals correlated with higher crime rates, whereas proportions of mainline Protestants and Catholics correlated with lower crime rates.

Community-level R/S-social capital studies are slightly more plentiful in Europe, where EVS responses have been aggregated to produce country-level R/S measures. One study used this method and found that volunteering rates were negatively predicted by country-level religious attendance, but positively predicted by individual-level religious attendance (Prouteau and Sardinha 2015, 27 countries, n = 37,232). Another recent European study reported that countries higher in religiosity and religious diversity possessed higher levels of structural social capital, whereas countries with more adherents to "hierarchical" religions (Catholicism, Orthodoxy, Islam) tended to possess lower levels of cognitive social capital (Kaasa 2013, p. 581, based on 29 countries). A recent study of 109 countries worldwide and 43 U.S. states reported negative correlations between community-level importance of religion and social trust, an indicator of cognitive social capital, although some previous studies using other designs have in contrast reported positive social trust associations with some R/S dimensions (Berggren and Bjørnskov 2011).

Religious culture may also matter at the local level. In the US, Wood (2002) documented coherent patterns linking different denominational religious cultures to greater or lesser capacity to mobilize effective collective democratic action. Similarly, evidence from eastern India suggests that the capacity of women's microcredit organizations to engage in collective action may be moderated by their predominant religious composition (Sanyal 2015 found greater capacity among Hindu than among Muslim organizations).

Although lacking community-level measures, a much larger number of studies, many based in the US, have shed light on how various *individual-level* dimensions of social capital are related to R/S factors (see Koenig et al. 2012, pp. 691–693). Such findings help to illuminate how religion may affect community-level social capital, often suggesting dynamics or hypotheses meriting exploration at the community level. For example, a study using a US nationally representative sample reported that some R/S dimensions (e.g., membership in a congregation) were related to greater chance of linking ("status-bridging") network ties (Wuthnow 2002, p. 669). Another study reported that religious observance, religious worldview identification, and participation in a religious student organization were significantly related to cross-racial interaction, "a form of bridging social capital" (Park and Bowman 2015, p. 21). However, a small study of US adults reported that "bridging trust" with those outside of one's congregation was lower among frequent attenders (Maselko et al. 2011, n = 104). Another study found support that religious involve-

ment fosters *intergenerational closure*, "the extent to which parents know the friends of their children and know the parents of their children's friends," a factor believed to support better developmental outcomes (Glanville et al. 2008, p. 108).

Some of these individual-level studies have probed relations with health. For example, findings from a nationally representative sample of US adults (n = 10,828) showed that social capital partially mediated the relationship between a religiosity and self-rated health (Yeary et al. 2012). And a US nationally representative study of African Americans (n = 803) reported that among women but not men, religious capital ("capital generated by religious groups") predicted better functioning above and beyond benefits associated with other forms of social capital (Holt et al. 2012, p. 347).

2.3   Socio-Economic Status

Socioeconomic status (SES), typically understood as encompassing income, education, and occupational status, represents perhaps "the most important predictor of health" among all psychosocial factors (Schneider 2011, 226). SES has been linked to gradients in health and longevity, so that the poor tend to be less healthy than the middle class, who are less healthy than the rich, who are less healthy than the very rich (Adler et al. 1994). SES is also a plausible "fundamental cause" of health that tends to "maintain an association with disease even when intervening mechanisms change" (Link and Phelan 1995, p. 80).[7] Evidence indicates that these SES gradients are attributable to causal influences of SES on health, rather than selection due to health status (Kröger et al. 2015).

In many European countries, poorer people tend to be more religious, and the US, which often exhibits a positive correlation between income and religiousness, represents a "curious outlier" (De La O and Rodden 2008, p. 469). Consistent with this European background, classical Marxist-inspired theories have viewed religion as an "opiate" that gives comfort to lower SES groups while inducing passivity. Yet this classical view is too simplistic, as religion has often been observed to function as a disruptive social force (Smith 1996). Evidence reviewed in the following subsection on social inequality indicates more complex and bidirectional associations (see also Schwadel 2016).

Studies focusing on R/S-to-SES relations, and how these two sets of factors are related to health and well-being, have yielded complex and varying findings, including much evidence for statistical moderation. Such findings, we suggest, underscore the importance of investigating R/S phenomena through flexible frameworks such

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[7] It has been proposed that religion/spirituality may also be a fundamental cause of health in the sense that it will "maintain an [inverse] association with disease even when intervening mechanisms change" (Link and Phelan 1995, p. 80) (see Hummer et al. 1999). If such a relationship holds, it is unclear whether the fundamentally causative agent should best be viewed as R/S as a whole, or one or more specific R/S dimensions, especially more cross-culturally generalizable dimensions (Oman 2009). Additional discussion of R/S as a fundamental cause occurs in the chapter entitled "Weighing the Evidence: What is Revealed by 100+ Meta-Analyses and Systematic Reviews of Religion/Spirituality and Health?" (this volume).

as the *dynamic and evolving* conception articulated earlier in this chapter, which can accommodate variations in both the circumstances and the local meaning of religion/spirituality.

Studies on an individual level, for example, have repeatedly found that engagement with R/S is positively linked to educational outcomes and attainment in US nationally representative samples of adolescents, perhaps due to processes such as friendship networks, extra-curricular activities, and norms, with benefits sometimes greatest among lower-SES adolescents (Erickson and Phillips 2012; Glanville et al. 2008; Kim 2015). Koenig et al. (2012, pp. 786) identified 11 studies of R/S and school grades or performance, all US-based and all showing positive relations. Favorable R/S-educational attainment relations have also been observed among adults (Brown and Gary 1991). Among immigrants, especially second-generation immigrants, attendance at worship services has been linked to higher occupational attainment (Connor and Koenig 2013). However, adult-focused US studies suggest that educational attainment may either attenuate or enhance a person's level of R/S, with effects that vary between traditions (McFarland et al. 2011). And worldwide, educational attainment often varies greatly between denominations and sometimes within denomination by gender (Norton and Tomal 2009).

Importantly, although many published health studies contain measures of both R/S and socio-economic status, only a small number have focused on the relation between these variables. Among studies examining R/S-SES interactions, one European study reported moderating effects by both national and individual-level religiosity which were "so pervasive that religious individuals in religious cultures reported better psychological adjustment when their income was low than high" (Gebauer et al. 2013, p. 565, 11 European countries, n = 187,957). And in the US, educational attainment as a measure of SES has been found to moderate the relation between R/S and psychological well-being, with the stronger effects observed among those with lower education (Ellison et al. 2014).

R/S-health relations also vary (are moderated) by national per-capita income, which in several ways represents a country-level analogue of individual SES. For example, positive individual-level R/S relations with psychological well-being are much stronger in poorer countries than in richer countries (Crabtree and Pelham 2009, March 6, n(1000 in each of 143 countries).

Finally, there is reason to believe that the neglect of R/S factors may have led to *underestimates* of SES-health relations. Such underestimates may occur whenever higher R/S and higher SES non-interactively predict better health, and when R/S levels are higher among lower-SES respondents. Such a configuration of R/S, SES, and health is quite common, especially outside of the US. Evidence demonstrates the complementary phenomenon that failing to adjust for SES statistically suppresses R/S-health relations, which strongly suggests the likelihood that failing to adjust for R/S will in turn statistically suppress SES-health relations. This strongly suggestive evidence is present in at least two prominent R/S-mortality studies: In these studies adjusting for SES *strengthened* R/S-longevity associations (see Hummer et al. 1999, Models 2 and 4 in Tables 3 and 4; Oman et al. 2002, Models 1 and 2 in Table 2). Few if any empirical investigations, however, have focused upon or clearly

documented R/S suppression of SES-health relations, and the magnitude and perva-
siveness of such suppression remain unknown.

In sum, consistent with the dynamic and evolving conception of religion/spirituality
presented earlier in this chapter, evidence indicates that relations between SES and R/S
factors vary considerably between societies and traditions. In the US, multiple studies
link R/S engagement with indicators of higher SES, especially greater adolescent edu-
cational attainment; but worldwide, educational effects vary between traditions and by
gender. R/S-well-being relations appear especially strong in poorer countries, whereas
European evidence reveals pervasive mutual moderation (statistical interaction)
between SES and R/S in their effects on well-being, encompassing interactions between
both individual and collective-level measures. Such variability underscores the need for
interpretations grounded in local social conditions and cultural meanings.

2.4   Socio-Economic Inequality

Beyond social epidemiology's longstand interest in how individually measured SES
relates to health, social epidemiology has also devoted substantial attention to *col-
lective social inequality*, which is most commonly measured through the Gini coef-
ficient (Kawachi and Kennedy 1997), Evidence has accumulated from diverse
societies worldwide for an adverse and probably causal association between greater
socioeconomic inequality and worse health, a phenomenon that has drawn increas-
ing attention in public health literature (e.g., Kondo et al. 2009; Pickett and
Wilkinson 2015; Wilkinson and Pickett 2006).

Theory and evidence suggests that R/S factors are related to such socioeconomic
inequalities in a complex manner: *Bidirectionally* in causality – as both cause and
consequence – and also *bivalently*, with various R/S dimensions acting as impedi-
ments or exacerbators of inequality, and sometimes as buffers against the adverse
effects of inequality (Idler 2014b).

Available longitudinal evidence suggests that high levels of religiousness/spiritu-
ality may be more of a consequence than a cause of socioeconomic inequality. More
specifically, evidence from several longitudinal studies suggests that national or
state-level social inequality causally fosters increased R/S, perhaps as a response to
the existential insecurity that it may induce. One recent study used yearly time
series data on religiousness, income inequality (Gini index) and average income
(GDP per capita) from 50 US states since the 1950s. Changes in inequality pre-
dicted subsequent changes in religiousness 1 year later, whereas the reverse was not
true, suggesting that "inequality would appear to drive religiosity, and not the
reverse" (Solt et al. 2011, p. 462). Very similar results emerge from analyses of
German national data (1969–2008), and from pooled cross-national data from 34
countries in 5 continents (1964–2010) (Solt 2014).

Other studies have used single-timepoint multi-national surveys to examine how
inequality may affect R/S, often finding strong relations between elevated inequal-
ity and higher R/S. For example, one study employed a dozen different R/S mea-
sures ranging from beliefs to worship service attendance and prayer, finding that in

most cases, "economic inequality [was] estimated to powerfully increase religiosity and to do so regardless of income" (Solt et al. 2011, p. 457, WVS/EVS, 76 countries, n > 200,000); Similarly, a European study found that income inequality (Gini coefficient), independent of various individual-level measures of insecurity, predicted greater attendance at religious services (Immerzeel and van Tubergen 2013, EVS, 23 countries, n = 134,009). And a worldwide study reported high correlations between income inequality (Gini coefficient) and national average frequency of personal prayer, after adjustments for other key theoretically supported country-level variables (r = 0.50, Rees 2009, 55 countries). Inequality may also foster desire for non-privatized expressions of R/S: A cross-national study found that greater societal income inequality (Gini coefficient) predicted lessened support, especially among the poor, for secularized politics (Karakoç and Başkan 2012, WVS, 40 countries from 4 continents, n = 41,564).

When religion is present, evidence suggests that it may exert mixed effects on inequality. Much evidence links R/S factors to higher levels of charitable giving and community volunteering, each of which helps foster broader social welfare (Saroglou 2013). Evidence from the World Values Survey also suggests that attending religious services correlates with moral issue conservatism, but has only a "miniscule" relation to preferences on economic issues (De La O and Rodden 2008, p. 455, Figure 5b, 16 countries, n = 15,332). Indeed, in major Western industrialized countries, "the difference between the voting behavior of secular and religious individuals can be attributed to large differences in preferences on the moral values issue dimension, and little, if any, of the difference can be attributed to differences in preferences on economic issues" (De La O and Rodden 2008, p. 469, 16 countries, n = 15,332).[8]

Evidence does, however, suggest that religious *division* in society affects attitudes toward fostering equality through redistributive policies. European studies report that lower support for income redistribution is predicted by greater religious heterogeneity ("fractionalization") as well as by greater religious versus secular polarization (Finseraas 2009, 22 countries, n = 40,997; Stegmueller et al. 2012, ESS, 16 countries, n = 79,679).

Yet on the local level, religion may contribute to mitigating inequality in ways that go beyond charity. As noted earlier, Wuthnow's (2002, p. 669) US nationally representative study found that membership in a congregation was related to greater chance of "status-bridging" social relationships. Similarly, other US studies have found that although US religious congregations tend to lack ethnic diversity, they

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[8] Voters who hold heterogeneous moral and economic preferences (i.e., partly liberal, partly conservative, depending on the issue) frequently face dilemmas, especially in countries with "majoritarian" electoral systems that are dominated by two major parties, because party issue positions on these diverging dimensions are by necessity "bundled together" (De La and Rodden 2008, pp. 441, 469). Such dilemmas are not uncommon, because "in every single one of our countries, the [moral versus economic] issue scales had opposite correlations with income, and they never exhibited a positive correlation with one another" (p. 469). Conflicts may be fewer in proportional representation electoral systems, however: "faced with the menu of choices available in the Netherlands, Germany, and the Scandinavian countries… voters need not choose one preference dimension on which to base their vote" (p. 470).

encompass a great deal of educational and income diversity, especially congregations that are urban (Schwadel 2009).

In sum, increases in inequality appear to spur enhanced religiousness, which may contribute, to some degree, to mitigating inequality. R/S measures correlate substantially with attitudes on moral issues but are mostly uncorrelated with economic attitudes, except that religious divisions in society are associated with lower support for redistributive policies.

2.5   *Violence and Crime*

Violence, which is closely related to crime, is a social problem that has been recognized as a public health issue in recent decades, perhaps inspired in part by successes in public health approaches to injury prevention (Rutherford et al. 2007; Schneider 2011; Winett 1998). Among factors relevant to the preventive approaches emphasized by public health are religion and spirituality, which have long been investigated by various social scientists and criminologists for potential preventive effects. Building on Durkheim's (1995/1912) work on social cohesion, the "moral community" hypothesis suggests that higher aggregate community-level R/S will foster various motivational and social processes that lead to lower crime rates (Baier and Wright 2001; Lee and Bartkowski 2004). And either in tandem with community or on its own, individual-level adherence to R/S may also potentially reduce criminal behavior through a number of processes, including fear of supernatural or karmic consequences (e.g., Shariff and Rhemtulla 2012).

Many empirical studies have investigated R/S-crime relations at the individual level. Koenig et al. (2012, pp. 243–255, pp. 780–785) identified 63 studies published since 2000, of which 61 were individual-level, and 50 (79%) reported significant or near-significant inverse relationships between R/S and delinquency or crime, a pattern that was "almost identical" (p. 248) to significant protective findings from 31 of 39 published before 2000. A systematic review of 60 studies reported a significant inverse relationship between individual R/S and crime (overall r = −0.12, Baier and Wright 2001).

Other published studies have examined community-level factors in US counties or at the level of nations. Among county-level studies, the existence of community-level R/S effects (moral community hypothesis) was suggested by a national study that found lower crime rates in US counties with larger numbers of churches per capita (Lee 2006, 902 rural counties). Similarly, greater proportions of religious adherents in a county have been found to predict lower arrest rates for violent crimes by whites, blacks, and hispanics (Ulmer and Harris 2013, 182 counties). However, as noted earlier, another US nationwide study of adults reported that proportions in each county of Evangelicals correlated with higher government-tabulated crime rates, whereas proportions of mainline Protestants and Catholics correlated with lower crime rates (Beyerlein and Hipp 2005, 3157 counties). Greater religious homogeneity has also been found to predict lower county crime rates (Trawick and

Howsen 2006, 120 counties in Kentucky). Some county-level studies have also provided evidence on how certain forms of religion may have supported violence-prone regional subcultures (Lee et al. 2010, 1068 counties).

Adolescent crime and delinquency have also been examined in multiple county-level studies. For example, one US nationwide study found that county-level and school-level measures of conservative Protestant homogeneity, but not general religiosity, were related to modestly reduced adolescent self-reports of delinquency (Regnerus 2003). Another study found that a higher proportion of rural counties' residents who adhered to civically engaged religious traditions predicted lower juvenile homicide rates (Lee and Bartkowski 2004, 1889 counties). On the individual level, correlations of R/S with lower rates of youth delinquency have been documented in multiple meta-analyses (overall r = −0.21, Cheung and Yeung 2011, k = 40 studies; r = −0.21 Yonker et al. 2012, k = 10 studies of deviant behavior) (see also chapter "Maternal/Child Health, Religion, and Spirituality", this volume).

National-level R/S effects on crime have also been observed. One cross-national study reported that higher rates of belief in hell were associated with lower national crime rates, but that beliefs in heaven were associated with higher crime rates, leading the authors to suggest that effects may be driven by "fear of supernatural punishment" (Shariff and Rhemtulla 2012, p. 3). Another study of 36 nations found that individual attendance at worship services reduced the acceptability of tax fraud overall, and that within each nation, tax fraud was viewed as less acceptable among religious adherents when at least half of the population adhered to some form of religious tradition (OR = 11.84 Stack and Kposowa 2006, WVS, n = 45,728).

A handful studies have also examined relations between individual-level R/S factors and domestic violence. Protective effects have been observed, such as reduced odds of perpetrating domestic violence (OR = 0.91, p < 0.001), although evidence suggests effects are moderated by ethnicity and perhaps other sociocultural factors (Ellison et al. 2007, n = 3134) (see also Mahoney et al. 2001). A recent systematic review has described how among immigrant populations in the US, religious leaders and norms can both contribute to and help address problems of intimate partner violence (Choi et al. 2016).

2.6 Individual Religionsity/Spirituality as Moderators of Effects from Communal Adversity

A diverse array of empirical studies have reported evidence that individual-level R/S (Box C) may buffer effects on the individual from adverse factors in the community environment. In Fig. 1, this is represented by the arrow labeled "u" showing the capacity of individual R/S (Box C) to moderate the influence of the community environment (Box B) on non-R/S individual characteristics (Box D). For example, multiple studies by Krause and his colleagues have reported that individuals higher in R/S were less affected by the adversity of dwelling in a deteriorated

neighborhood (Krause 1998; Krause et al. 2017). Similarly, public religious affiliation has been reported to buffer the tendency of community violence to lead to increased substance abuse (Fowler et al. 2008). And spiritual meaning has been found to buffer against post-traumatic stress of disaster survivors (e.g., Hurricane Katrina, Haynes et al. 2017). And as described in the chapter in this volume on "Social Identity and Discrimination in Religious/Spiritual Influences on Health", multiple studies have reported that individual R/S moderates distress from perceived ethnic discrimination.

Similarly, in cross-national data, reports of multi-level analyses have indicated that belief-based measures of religiosity buffer the adverse effect of national income inequality on life satisfaction, both in Europe and worldwide (Joshanloo and Weijers 2016a, ESS, 27 nations, n = 49,7636 self-reporting degree of religiousness & WVS/EVS, 85 nations, n = 217,591 reporting importance of God). Relatedly, and entirely at the ecological level, religiosity exerted a buffering effect against the adverse effects of societal injustice on well-being in 121 nations (Joshanloo and Weijers 2016b).

2.7   Collective Coping

Excessive psychological stress partly mediates adverse effects from discrimination, social inequality, and many other psychosocial risk factors (e.g., Adler et al. 1994). Pargament (1997) synthesized a great deal of research showing how individuals and groups turn to distinctively religious and spiritual methods of appraisal and coping (see discussion in the chapter "Model of Individual Health Effects from Religion/Spirituality: Supporting Evidence", this volume). Although most often studied at the individual level, stress and coping frameworks have been applied at the collective level to conceptualize and study group stressors, group appraisals, and group coping responses. Religious and other community leaders who shape collective appraisals are said to function as "appraisal makers" (Jerusalem et al. 1995, p. 113).

While a few studies have investigated R/S coping by families (Mahoney et al. 2001), much or perhaps most scholarship on the role of R/S in collective coping has focused on responses to disasters. Religious organizations, East and West, are well-known for engaging in disaster relief efforts (see reviews in Joakim and White 2015; see also Cheema et al. 2014; McLaughlin 2016; Samuels 2016). Long neglected in disaster-response scholarship, religious actors are now receiving increased attention, as evidenced by multiple special issues, including one in the *International Journal of Mass Emergencies and Disasters* (Fountain et al. 2015; Gaillard and Texier 2010). In the US, attention is being given to developing partnerships between clergy and mental health professional to address spiritual needs during disasters, and to developing cross-traditionally pan-inclusive clergy networks for partnering with local disaster-preparedness authorities (Aten et al. 2013; Chaffee 2012, February 1).

2.8 Multilevel Spiritual Interventions

Community-level factors, notwithstanding their entrenchment, have also been made the focus of interventions. Indeed, recent scholarship in public health and other fields has emphasized the value of multi-level interventions that target both individual-level and community-level processes (Smedley and Syme 2000; Schensul and Trickett 2009). Questions about the value of interventions that address R/S factors at multiple levels arise naturally from the large R/S-focused intervention literature, which includes many randomized trials (DeHaven et al. 2004; Worthington et al. 2011) (see also this volume's chapter entitled "Weighing the Evidence: What is Revealed by 100+ Meta-Analyses and Systematic Reviews of Religion/Spirituality and Health?"). Such interventions have aimed to accommodate, support, or exert beneficial effects at least in part through participants' engagement with spirituality or religion. However, most previously studied interventions have been conceptualized and evaluated primarily if not exclusively at the individual level. For example, many studies have evaluated R/S-infused or R/S-tailored forms of psychotherapy or counseling (Worthington et al. 2011) (see also chapter on "Public Health Education, Promotion, and Intervention: Relevance of Religion and Spirituality", this volume).

Yet even individually-focused interventions may sometimes produce community-level changes through changed individuals (Schensul and Trickett 2009). Such changes are perhaps especially likely if many intervention recipients are members of the same community. In fact, many spiritually-tailored interventions have used religious congregations for recruitment and delivery of health interventions. It would seem possible to measure the resulting changes in the congregational sociocultural environment, although it is unclear if any studies have attempted such measurement in a systematic way. If such group-level changes can be measured, their mediational roles in individual change could also be investigated. As an additional step, a multi-level intervention might plan – in collaboration with community leaders – to implement changes in the congregational environment. Such changes may also at times emerge spontaneously through community-based participatory research.

More challenging, but perhaps still feasible, is to conduct multi-level R/S-focused interventions in non-sectarian (non-congregational) settings, such as neighborhoods, workplaces, or non-sectarian schools. The existence of many commonalities across traditions has made possible the existence of non-sectarian spiritually-focused interventions at the individual level (e.g., Bormann et al. 2013; Oman et al. 2006). The emerging social science of spirituality also suggests possible conceptual bases for identifying ethically grounded non-sectarian spiritual group-level intervention approaches (Oman 2013). In settings such as educational institutions, an initial group-level intervention may perhaps most feasibly be conceived as a motivational support and complement to a set of voluntary-enrollment individual-level interventions that allow for diverse R/S orientations (Oman 2016; Oman et al. 2008; Sarath 2003). Multi-level spiritually-infused interventions represent a challenging but potentially highly rewarding frontier for public health investigation and application.

2.9 Other Salutogenic Factors: Expanding Social Epidemiology?

This chapter's review has emphasized relations of R/S to factors of major interest in contemporary social epidemiology, an emphasis continued in the next chapter's review of discrimination and health (see "Social Identity and Discrimination in Religious/Spiritual Influences on Health", this volume). But apart from its attention to social capital and social support, contemporary social epidemiology tends to disproportionately emphasize pathogenic factors, devoting less attention to salutary factors in the social environment that foster better health.

Evidence strongly indicates that religion and spirituality often function as positive health-inducing factors, famously called *salutogenic* factors by pioneering social epidemiologist Aaron Antonovsky (Antonovsky 1996; Levin 1996). But religion and spirituality are not the only salutogenic factors that may be embedded in social environments through norms, culture, and widespread individual behavior. Social identity itself may function at times as a salutogenic factor (see chapter "Social Identity and Discrimination in Religious/Spiritual Influences on Health", this volume). Additional potentially salutogenic factors viewable as at least partially embedded in sociocultural environments include numerous character strengths and virtues studied in positive psychology, such as compassion, forgiveness, altruism, and various other prosocial virtues, many of which have demonstrated favorable empirical health associations (Koenig et al. 2012; Peterson and Seligman 2004; Riek and Mania 2012). Another salutogenic factor is the possession of a cogent world view, called a *sense of coherence* by Antonovsky (Eriksson and Lindström 2006; Jeserich 2013). Perhaps because it espouses them, much evidence links religion/spirituality to higher levels of these other salutogenic factors (see review in "Model of Individual Health Effects from Religion/Spirituality: Supporting Evidence", this volume). For example, among adolescents, R/S often correlates favorably with *developmental assets* (see chapter on "Maternal/Child Health, Religion, and Spirituality" this volume).

It would seem natural to study R/S in the context of these other factors that may clarify its operations. Yet apart from social capital and sense of coherence, these factors have been neglected epidemiologically. The health consequences of their greater or lesser embedding in sociocultural environments has remained largely unexplored in epidemiologically oriented studies. Better understanding of such embedded salutogenic factors could clarify what mediates R/S-health relations, as well as open up new approaches to health promotion and multi-level intervention. Salutogenically oriented approaches might also shed light on key factors in the internal social environments of religious communities, such as the conduct and tone set by leaders or other community examplars and "appraisal makers" (Jerusalem et al. 1995, p. 113), whose aggregate impact may either enhance or dilute the health effects flowing from membership in specific religious communities (Oman 2013; Pargament et al. 1983; Taylor et al. 2000) (see also chapter on "Public Health Education, Promotion, and Intervention: Relevance of Religion and Spirituality", this volume). Salutogenic approaches clearly need much more exploration.

3   Summary: Social and Community-Level Factors

Several ideas for application to public health practice are provided in Box 1. In summary, reviews of research on R/S and social and community-level factors reveal that

- Lower mortality rates in US counties have been predicted by county-level measures of more socially engaged religiousness, and of less insular religiousness (counts of types of congregations). Measures of community religiousness have also predicted Israeli neighborhood mortality rates and US county mortality rates for various cancers;
- Consistent with early work by Durkheim, community suicide rates often show religious patterning, with greater measured community religiousness often predicting lower suicide rates in diverse ethnic groups in the US;
- Community-level measures of religiousness have been found to predict other health-related outcomes that include lower depression, better psychological well-being, and higher self-rated health;

Box 1: Ideas for Application to Public Health Practice: Social and Community-Level Factors

Community-level concepts, theories and evidence can inform public health professionals' intervention development, partnering and relationship building with religious/spiritual communities:

✓ Be aware and acknowledge that religious communities are perhaps the single largest source of "social capital" in the US (and many other countries), and that engagement in such communities can buffer against many community stressors that include disasters, violence, discrimination, and income inequality;

✓ Be aware and acknowledge that different religious communities sometimes foster different types of social connection and "social capital" that may possess different implications for health-related outcomes such as crime rates and volunteering;

✓ Be aware that religious communities are often among the most important responders to disasters, and consider partnering with clergy networks or other R/S-based groups or networks;

✓ Consider exploring multi-level interventions that seek to address both individual-level and community-level factors, such as individual behavior as well as congregational climate or neighborhood cohesion.

Please see chapters in Part II of this volume for in-depth discussion of the relevance of religion and spirituality to applied public health work. See Part I's first chapter for an overview of major application themes.

- Religious involvement is an enormous source of group-level social capital, arguably the largest single source in the US (Putnam 2000), but different denominations and different R/S dimensions are linked to different forms of social capital that may differ in their health effects, and occasionally be linked to poorer health;
- Relations between SES and R/S factors vary considerably between societies and traditions, with R/S associations with educational attainment being favorable in the US, but varying by tradition and gender worldwide;
- Income inequality appears to spur enhanced religiousness, which may then in turn help somewhat to mitigate inequality on local levels. Internationally, R/S measures have been mostly uncorrelated with economic attitudes, except that religiously divided societies show lower support for redistributive policies;
- Lower crime rates are predicted by greater community-level religiousness, especially for civically engaged traditions, and meta-analyses indicate that lower individual criminality is predicted by many dimensions of R/S engagement;
- Individual-level R/S often appears to buffer against adverse effects of community-level stressors, including disasters, community violence, racial discrimination, income inequality, and dwelling in a deteriorated neighborhood;
- Religious communities are often among the most important responders to disasters, and are receiving increased attention in disaster-response scholarship (Fountain et al. 2015);
- Multi-level spiritually-infused interventions represent a challenging but potentially highly rewarding frontier for public health investigation and application;
- Salutogenically oriented studies of the community-level embedding of positive factors such as prosocial virtues and spiritual exemplars could potentially clarify pathways underlying health effects from membership in R/S communities, and help guide multi-level intervention design.

References

Adler, N. E., Boyce, T., Chesney, M. A., Cohen, S., Folkman, S., Kahn, R. L., et al. (1994). Socioeconomic status and health: The challenge of the gradient. *American Psychologist, 49*(1), 15–24. https://doi.org/10.1037/0003-066X.49.1.15.

Al-Kandari, Y. Y. (2003). Religiosity and its relation to blood pressure among selected Kuwaitis. *Journal of Biosocial Science, 35*(3), 463–472. https://doi.org/10.1017/S0021932003004632.

Antonovsky, A. (1996). The salutogenic model as a theory to guide health promotion. *Health Promotion International, 11*(1), 11–18. https://doi.org/10.1093/heapro/11.1.11.

Aten, J. D., Boan, D. M., Hosey, J. M., Topping, S., Graham, A., & Im, H. (2013). Building capacity for responding to disaster emotional and spiritual needs: A clergy, academic, and mental health partnership model (CAMP). *Psychological Trauma: Theory, Research, Practice, and Policy, 5*(6), 591–600. https://doi.org/10.1037/a0030041.

Baier, C. J., & Wright, B. R. E. (2001). "If you love me, keep my commandments": A meta-analysis of the effect of religion on crime. *Journal of Research in Crime & Delinquency, 38*(1), 3–21. https://doi.org/10.1177/0022427801038001001.

Baker, C., & Miles-Watson, J. (2010). Faith and traditional capitals: Defining the public scope of spiritual and religious capital – a literature review. *Implicit Religion, 13*(1), 17–69. https://doi.org/10.1558/imre.v13i1.17.

Barranco, R. E. (2016). Suicide, religion, and Latinos: A macrolevel study of U.S. Latino suicide rates. *The Sociological Quarterly, 57*(2), 256–281. https://doi.org/10.1111/tsq.12110.

Bartkowski, J. P., Xu, X., & Garcia, G. E. (2011). Religion and infant mortality in the U.S.: A preliminary study of denominational variations. *Religions, 2*(3), 264. https://doi.org/10.3390/rel2030264.

Berggren, N., & Bjørnskov, C. (2011). Is the importance of religion in daily life related to social trust? Cross-country and cross-state comparisons. *Journal of Economic Behavior & Organization, 80*(3), 459–480. https://doi.org/10.1016/j.jebo.2011.05.002.

Berkman, L. F., & Kawachi, I. (Eds.). (2000). *Social epidemiology* (1st ed.). New York: Oxford University Press.

Berkman, L. F., Kawachi, I., & Glymour, M. M. (Eds.). (2014). *Social epidemiology* (2nd ed.). New York: Oxford University Press.

Beyerlein, K., & Hipp, J. R. (2005). Social capital, too much of a good thing? American religious traditions and community crime. *Social Forces, 84*(2), 995–1013. https://doi.org/10.1353/sof.2006.0004.

Blanchard, T. C., Bartkowski, J. P., Matthews, T. L., & Kerley, K. R. (2008). Faith, morality and mortality: The ecological impact of religion on population health. *Social Forces, 86*(4), 1591–1620. https://doi.org/10.2307/20430822.

Bormann, J. E., Thorp, S. R., Wetherell, J. L., Golshan, S., & Lang, A. J. (2013). Meditation-based mantram intervention for veterans with posttraumatic stress disorder: A randomized trial. *Psychological Trauma: Theory, Research, Practice, and Policy, 5*(3), 259–267. https://doi.org/10.1037/a0027522.

Braam, A. W., van den Eeden, P., Prince, M. J., Beekman, A. T. F., Kivelae, S. L., Lawlor, B. A., et al. (2001). Religion as a cross-cultural determinant of depression in elderly Europeans: Results from the EURODEP collaboration. *Psychological Medicine, 31*(5), 803–814. https://doi.org/10.1017/S0033291701003956.

Braveman, P., Egerter, S., & Williams, D. R. (2011). The social determinants of health: Coming of age. *Annual Review of Public Health, 32*, 381–398. https://doi.org/10.1146/annurev-publhealth-031210-101218.

Brown, D. R., & Gary, L. E. (1991). Religious socialization and educational attainment among African Americans: An empirical assessment. *Journal of Negro Education, 60*(3), 411–426. https://doi.org/10.2307/2295493.

Brunie, A. (2009). Meaningful distinctions within a concept: Relational, collective, and generalized social capital. *Social Science Research, 38*(2), 251–265. https://doi.org/10.1016/j.ssresearch.2009.01.005.

Budros, A. (2005). The antislavery movement in early America: Religion, social environment and slave manumissions. *Social Forces, 84*(2), 941–966. https://doi.org/10.1353/sof.2006.0008.

Chaffee, P. (2012, February 1). *Unique clergy network empowers religion sector*. The Interfaith Observer. http://theinterfaithobserver.org/journalarticles/ 2012/2/1/unique-clergy-network-empowers-religion-sector.html. Accessed 12 Oct 2014.

Chatters, L. M. (2000). Religion and health: Public health research and practice. *Annual Review of Public Health, 21*, 335–367. https://doi.org/10.1146/annurev.publhealth.21.1.335.

Cheema, A. R., Scheyvens, R., Glavovic, B., & Imran, M. (2014). Unnoticed but important: Revealing the hidden contribution of community-based religious institution of the mosque in disasters. *Natural Hazards, 71*(3), 2207–2229. https://doi.org/10.1007/s11069-013-1008-0.

Cheung, C.-k., & Yeung, J. W.-k. (2011). Meta-analysis of relationships between religiosity and constructive and destructive behaviors among adolescents. *Children and Youth Services Review, 33*(2), 376–385. https://doi.org/10.1016/j.childyouth.2010.10.004.

Choi, Y. J., Elkins, J., & Disney, L. (2016). A literature review of intimate partner violence among immigrant populations: Engaging the faith community. *Aggression and Violent Behavior, 29*, 1–9. https://doi.org/10.1016/j.avb.2016.05.004.

Collins, F. S. (2004). What we do and don't know about 'race', 'ethnicity', genetics and health at the dawn of the genome era. *Nature Genetics, 36*, S13–S15. https://doi.org/10.1038/ng1436.

Connor, P., & Koenig, M. (2013). Bridges and barriers: Religion and immigrant occupational attainment across integration contexts. *International Migration Review, 47*(1), 3–38. https://doi.org/10.1111/imre.12012.

Crabtree, S., & Pelham, B. (2009, March 6). *Religion provides emotional boost to world's poor*. http://www.gallup.com/poll/116449/religion-provides-emotional-boost-world-poor.aspx. Accessed 18 June 2016.

Cwikel, J. (2006). *Social epidemiology: Strategies for public health activism*. New York: Columbia University Press.

De La O, A. L., & Rodden, J. A. (2008). Does religion distract the poor?: Income and issue voting around the world. *Comparative Political Studies, 41*(4–5), 437–476. https://doi.org/10.1177/0010414007313114.

De Silva, M. J., McKenzie, K., Harpham, T., & Huttly, S. R. A. (2005). Social capital and mental illness: A systematic review. *Journal of Epidemiology and Community Health, 59*(8), 619–627. https://doi.org/10.1136/jech.2004.029678.

DeHaven, M., Hunter, I. B., Wilder, L., Walton, J. W., & Berry, J. (2004). Health programs in faith-based organizations: Are they effective? *American Journal of Public Health, 94*(6), 1030–1036. https://doi.org/10.2105/AJPH.94.6.1030.

Donnelly, E. A. (2007). Making the case for Jubilee: The Catholic church and the poor-country debt movement. *Ethics & International Affairs, 21*(S1), 189–218. https://doi.org/10.1111/j.1747-7093.2007.00090.x.

Durkheim, E. (1951/1897). *Suicide, a study in sociology* (J. A. Spaulding & G. Simpson, Trans.). Glencoe: Free Press. (originally published in 1897 in French as Le suicide).

Durkheim, E. (1995/1912). *The elementary forms of religious life* (K. E. Fields, Trans.). New York: Free Press. (originally published in 1912 in French as Les formes élémentaires de la vie religieuse).

Dwyer, J. W., Clarke, L. L., & Miller, M. K. (1990). The effect of religious concentration and affiliation on county cancer mortality rates. *Journal of Health and Social Behavior, 31*(2), 185–202.

Ellison, C. G., Burr, J. A., & McCall, P. L. (1997). Religious homogeneity and metropolitan suicide rates. *Social Forces, 76*(1), 273–299. https://doi.org/10.1093/sf/76.1.273.

Ellison, C. G., Trinitapoli, J. A., Anderson, K. L., & Johnson, B. R. (2007). Race/ethnicity, religious involvement, and domestic violence. *Violence Against Women, 13*(11), 1094–1112. https://doi.org/10.1177/1077801207308259.

Ellison, C. G., Schieman, S., & Bradshaw, M. (2014). The association between religiousness and psychological well-being among older adults: Is there an educational gradient? In L. A. Keister & D. E. Sherkat (Eds.), *Religion and inequality in America: Research and theory on religion's role in stratification* (pp. 263–288). New York: Cambridge University Press.

Erickson, L. D., & Phillips, J. W. (2012). The effect of religious-based mentoring on educational attainment: More than just a spiritual high? *Journal for the Scientific Study of Religion, 51*(3), 568–587. https://doi.org/10.1111/j.1468-5906.2012.01661.x.

Eriksson, M., & Lindström, B. (2006). Antonovsky's sense of coherence scale and the relation with health: A systematic review. *Journal of Epidemiology and Community Health, 60*(5), 376–381. https://doi.org/10.1136/jech.2005.041616.

Ferlander, S. (2007). The importance of different forms of social capital for health. *Acta Sociologica, 50*(2), 115–128. https://doi.org/10.1177/0001699307077654.

Finseraas, H. (2009). Income inequality and demand for redistribution: A multilevel analysis of European public opinion. *Scandinavian Political Studies, 32*(1), 94–119. https://doi.org/10.1111/j.1467-9477.2008.00211.x.

Fountain, P., Bush, R., & Feener, R. M. (2015). Religious actors in disaster relief: An introduction. *International Journal of Mass Emergencies and Disasters, 33*(1), 1–17.

Fowler, P. J., Ahmed, S. R., Tompsett, C. J., Jozefowicz-Simbeni, D. M. H., & Toro, P. A. (2008). Community violence and externalizing problems: Moderating effects of race and religiosity in emerging adulthood. *Journal of Community Psychology, 36*(7), 835–850. https://doi.org/10.1002/jcop.20267.

Francis, Pope (2015). *Encyclical on climate change & inequality: On care for our common home (Introduction by Naomi Oreskes)*. Brooklyn: Melville House.

Frank, R. (2007). What to make of it? The (re)emergence of a biological conceptualization of race in health disparities research. *Social Science and Medicine, 64*(10), 1977–1983. https://doi.org/10.1016/j.socscimed.2007.01.010.

Gaillard, J. C., & Texier, P. (2010). Religions, natural hazards, and disasters: An introduction. *Religion, 40*(2), 81–84. https://doi.org/10.1016/j.religion.2009.12.001.

Gebauer, J. E., Nehrlich, A. D., Sedikides, C., & Neberich, W. (2013). The psychological benefits of income are contingent on individual-level and culture-level religiosity. *Social Psychological and Personality Science, 4*(5), 569–578. https://doi.org/10.1177/1948550612469819.

Gilbert, K. L., Quinn, S. C., Goodman, R. M., Butler, J., & Wallace, J. (2013). A meta-analysis of social capital and health: A case for needed research. *Journal of Health Psychology, 18*(11), 1385–1399. https://doi.org/10.1177/1359105311435983.

Glanville, J. L., Sikkink, D., & Hernandez, E. I. (2008). Religious involvement and educational outcomes: The role of social capital and extracurricular participation. *The Sociological Quarterly, 49*(1), 105–137. https://doi.org/10.1111/j.1533-8525.2007.00108.x.

Hammond, J. L. (1974). Revival religion and antislavery politics. *American Sociological Review, 39*(2), 175–186. https://doi.org/10.2307/2094230.

Haynes, W. C., Van Tongeren, D. R., Aten, J., Davis, E. B., Davis, D. E., Hook, J. N., et al. (2017). The meaning as a buffer hypothesis: Spiritual meaning attenuates the effect of disaster-related resource loss on posttraumatic stress. *Psychology of Religion and Spirituality, 9*(4), 446–453. https://doi.org/10.1037/rel0000098.

Helliwell, J. F., & Purnam, R. D. (2004). The social context of well–being. *Philosophical Transactions of the Royal Society of London B: Biological Sciences, 359*(1449), 1435–1446. https://doi.org/10.1098/rstb.2004.1522.

Heppner, P. P., Heppner, M. J., Lee, D.-g., Wang, Y.-W., Park, H.-j., & Wang, L.-f. (2006). Development and validation of a collectivist coping styles inventory. *Journal of Counseling Psychology, 53*(1), 107–125. https://doi.org/10.1037/0022-0167.53.1.107.

Holt, C. L., Schulz, E., Williams, B. R., Clark, E. M., & Wang, M. Q. (2012). Social, religious and spiritual capital and physical/emotional functioning in a national sample of African Americans. *Journal of Community & Applied Social Psychology, 22*(4), 346–362. https://doi.org/10.1002/casp.1116.

Hood, R. W., Hill, P. C., & Spilka, B. (2009). *The psychology of religion: An empirical approach* (4th ed.). New York: Guilford.

Hummer, R. A., Rogers, R. G., Nam, C. B., & Ellison, C. G. (1999). Religious involvement and U.S. adult mortality. *Demography, 36*(2), 273–285. https://doi.org/10.2307/2648114.

Idler, E. (2014a). Religion: The invisible social determinant. In E. L. Idler (Ed.), *Religion as a social determinant of public health* (pp. 1–23). New York: Oxford University Press.

Idler, E. L. (Ed.). (2014b). *Religion as a social determinant of public health*. Oxford: Oxford University Press.

Immerzeel, T., & van Tubergen, F. (2013). Religion as reassurance? Testing the insecurity theory in 26 European countries. *European Sociological Review, 29*(2), 359–372. https://doi.org/10.1093/esr/jcr072.

Jaffe, D. H., Eisenbach, Z., Neumark, Y. D., & Manor, O. (2005). Does living in a religiously affiliated neighborhood lower mortality? *Annals of Epidemiology, 15*(10), 804–810. https://doi.org/10.1016/j.annepidem.2004.09.014.

Jerusalem, M., Kaniasty, K., Lehman, D. R., Ritter, C., & Turnbull, G. J. (1995). Individual and community stress: Integration of approaches at different levels. In E. Stevan, E. Hobfoll, M. W. de Vries, et al. (Eds.), *Extreme stress and communities: Impact and intervention* (pp. 105–129). Dordrecht: Kluwer Academic Publishers.

Jeserich, F. (2013). Can sense of coherence be modified by religious/spiritual interventions?: A critical appraisal of previous research. *Interdisciplinary Journal of Research on Religion, 9*, 1–36.

Joakim, E. P., & White, R. S. (2015). Exploring the impact of religious beliefs, leadership, and networks on response and recovery of disaster-affected populations: A case study from Indonesia. *Journal of Contemporary Religion, 30*(2), 193–212. https://doi.org/10.1080/13537903.2015.1025538.

Joshanloo, M., & Weijers, D. (2016a). Religiosity moderates the relationship between income inequality and life satisfaction across the globe. *Social Indicators Research, 128*(2), 731–750. https://doi.org/10.1007/s11205-015-1054-y.

Joshanloo, M., & Weijers, D. (2016b). Religiosity reduces the negative influence of injustice on subjective well-being: A study in 121 nations. *Applied Research in Quality of Life, 11*(2), 601–612. https://doi.org/10.1007/s11482-014-9384-5.

Kaasa, A. (2013). Religion and social capital: Evidence from European countries. *International Review of Sociology, 23*(3), 578–596. https://doi.org/10.1080/03906701.2013.856162.

Karakoç, E., & Başkan, B. (2012). Religion in politics: How does inequality affect public secularization? *Comparative Political Studies, 45*(12), 1510–1541. https://doi.org/10.1177/0010414012453027.

Kark, J. D., Carmel, S., Sinnreich, R., Goldberger, N., & Friedlander, Y. (1996a). Psychosocial factors among members of religious and secular kibbutzim. *Israel Journal of Medical Sciences, 32*(3–4), 185–194.

Kark, J. D., Shemi, G., Friedlander, Y., Martin, O., Manor, O., & Blondheim, S. H. (1996b). Does religious observance promote health? Mortality in secular vs religious kibbutzim in Israel. *American Journal of Public Health, 86*(3), 341–346. https://doi.org/10.2105/AJPH.86.3.341.

Kawachi, I., & Berkman, L. (2000). Social cohesion, social capital, and health. In L. F. Berkman & I. Kawachi (Eds.), *Social epidemiology* (pp. 174–190). New York: Oxford University Press.

Kawachi, I., & Kennedy, B. P. (1997). The relationship of income inequality to mortality: Does the choice of indicator matter? *Social Science and Medicine, 45*(7), 1121–1127. https://doi.org/10.1016/S0277-9536(97)00044-0.

Khan, F. (2011). Islamic economics. In L. Bouckaert & L. Zsolnai (Eds.), *Handbook of spirituality and business* (pp. 138–146). London: Palgrave Macmillan UK.

Khan, M. M., & Bhatti, M. I. (2008). Islamic banking and finance: On its way to globalization. *Managerial Finance, 34*(10), 708–725. https://doi.org/10.1108/03074350810891029.

Kim, J. (2015). The academic advantage of devotion: Measuring variation in the value of weekly worship in late adolescence on educational attainment using propensity score matching. *Journal for the Scientific Study of Religion, 54*(3), 555–574. https://doi.org/10.1111/jssr.12219.

Kimball, R., & Wissner, M. (2015). Religion, poverty, and politics: Their impact on Women's reproductive health outcomes. *Public Health Nursing, 32*(6), 598–612. https://doi.org/10.1111/phn.12196.

Kinney, N. T., & Combs, T. B. (2016). Changes in religious ecology and socioeconomic correlates for neighborhoods in a metropolitan region. *Journal of Urban Affairs, 38*(3), 409–428. https://doi.org/10.1111/juaf.12211.

Koenig, H. G., King, D. E., & Carson, V. B. (2012). *Handbook of religion and health* (2nd ed.). Oxford/New York: Oxford University Press.

Kondo, N., Sembajwe, G., Kawachi, I., van Dam, R. M., Subramanian, S. V., & Yamagata, Z. (2009). Income inequality, mortality, and self rated health: Meta-analysis of multilevel studies. *British Medical Journal, 339*, b4471. https://doi.org/10.1136/bmj.b4471.

Krause, N. (1998). Neighborhood deterioration, religious coping, and changes in health during late life. *The Gerontologist, 38*(6), 653–664. https://doi.org/10.1093/geront/38.6.653.

Krause, N., Ironson, G., Pargament, K., & Hill, P. (2017). Neighborhood conditions, religious coping, and uncontrolled hypertension. *Social Science Research, 62*, 161–174. https://doi.org/10.1016/j.ssresearch.2016.08.004.

Kröger, H., Pakpahan, E., & Hoffmann, R. (2015). What causes health inequality? A systematic review on the relative importance of social causation and health selection. *The European Journal of Public Health, 25*(6), 951. https://doi.org/10.1093/eurpub/ckv111.

Lee, M. R. (2006). The religious institutional base and violent crime in rural areas. *Journal for the Scientific Study of Religion, 45*(3), 309–324. https://doi.org/10.1111/j.1468-5906.2006.00309.x.

Lee, M. R., & Bartkowski, J. P. (2004). Love thy neighboer? Moral communities, civic engagement, and juvenile homicide in rural areas. *Social Forces, 82*(3), 1001–1035. https://doi.org/10.1353/sof.2004.0044.

Lee, M. R., Thomas, S. A., & Ousey, G. C. (2010). Southern culture and homicide: Examining the cracker culture/black rednecks thesis. *Deviant Behavior, 31*(1), 60–96. https://doi.org/10.1080/01639620902854761.

Levin, J. S. (1996). How religion influences morbidity and health: Reflections on natural history, salutogenesis and host resistance. *Social Science and Medicine, 43*(5), 849–864. https://doi.org/10.1016/0277-9536(96)00150-5.

Link, B. G., & Phelan, J. (1995). Social conditions as fundamental causes of disease. *Journal of Health and Social Behavior, 35*, 80–94. https://doi.org/10.1177/0022146510383498.

Mahoney, A., Pargament, K. I., Tarakeshwar, N., & Swank, A. B. (2001). Religion in the home in the 1980s and 1990s: A meta-analytic review and conceptual analysis of links between religion, marriage, and parenting. *Journal of Family Psychology, 15*(4), 559–596. https://doi.org/10.1037/0893-3200.15.4.559.

Maselko, J., Hughes, C., & Cheney, R. (2011). Religious social capital: Its measurement and utility in the study of the social determinants of health. *Social Science and Medicine, 73*(5), 759–767. https://doi.org/10.1016/j.socscimed.2011.06.019.

McFarland, M. J., Wright, B. R. E., & Weakliem, D. L. (2011). Educational attainment and religiosity: Exploring variations by religious tradition. *Sociology of Religion, 72*(2), 166–188. https://doi.org/10.1093/socrel/srq065.

McKivigan, J. R. (1984). *The war against proslavery religion: Abolitionism and the northern churches, 1830–1865*. Ithaca: Cornell University Press.

McLaughlin, L. (2016). Hard lessons learned. *Asian Ethnology, 75*(1), 105–137.

Melé, D. (2011). Catholic social teaching. In L. Bouckaert & L. Zsolnai (Eds.), *Handbook of spirituality and business* (pp. 118–128). London: Palgrave Macmillan UK.

Montemaggi, F. (2011). The enchanting dream of "spiritual capital". *Implicit Religion, 14*(1), 67–86. https://doi.org/10.1558/imre.v14i1.67.

Moore, M. D. (2015). Religious heterogeneity and suicide: A cross-national analysis. *Social Compass, 62*(4), 649–663. https://doi.org/10.1177/0037768615601978.

Norton, S. W., & Tomal, A. (2009). Religion and female educational attainment. *Journal of Money, Credit and Banking, 41*(5), 961–986. https://doi.org/10.1111/j.1538-4616.2009.00240.x.

O'Campo, P., & Dunn, J. R. (2012). *Rethinking social epidemiology: Towards a science of change*. Dordrecht: Springer.

Oakes, J. M., & Kaufman, J. S. (2006). *Methods in social epidemiology*. San Francisco: Jossey-Bass.

Oman, D. (2009). Unique and common facets of religion and spirituality: Both are important. *Journal of Religion, Spirituality & Aging, 21*(4), 275–286. https://doi.org/10.1080/15528030902862471.

Oman, D. (2013). Spiritual modeling and the social learning of spirituality and religion. In K. I. Pargament, J. J. Exline, & J. W. Jones (Eds.), *APA handbook of psychology, religion, and spirituality (Vol. 1): Context, theory, and research* (pp. 187–204). Washington, DC: American Psychological Association. https://doi.org/10.1037/14045-010.

Oman, D. (2016). International collaboration for living with the richness of spiritual diversity [letter]. *Journal of the Indian Academy of Applied Psychology, 42*(2), 373–378.

Oman, D., Kurata, J. H., Strawbridge, W. J., & Cohen, R. D. (2002). Religious attendance and cause of death over 31 years. *International Journal of Psychiatry in Medicine, 32*(1), 69–89. https://doi.org/10.2190/RJY7-CRR1-HCW5-XVEG.

Oman, D., Hedberg, J., & Thoresen, C. E. (2006). Passage meditation reduces perceived stress in health professionals: A randomized, controlled trial. *Journal of Consulting and Clinical Psychology, 74*(4), 714–719. https://doi.org/10.1037/0022-006X.74.4.714.

Oman, D., Flinders, T., & Thoresen, C. E. (2008). Integrating spiritual modeling into education: A college course for stress management and spiritual growth. *The International Journal for the Psychology of Religion, 18*(2), 79–107. https://doi.org/10.1080/10508610701879316.

Pargament, K. I. (1997). *The psychology of religion and coping: Theory, research, practice*. New York: Guilford.

Pargament, K. I., Silverman, W., Johnson, S., Echemendia, R., & Snyder, S. (1983). The psychosocial climate of religious congregations. *American Journal of Community Psychology, 11*(4), 351–381. https://doi.org/10.1007/BF00894054.

Park, J. J., & Bowman, N. A. (2015). Religion as bridging or bonding social capital: Race, religion, and cross-racial interaction for college students. *Sociology of Education, 88*(1), 20–37. https://doi.org/10.1177/0038040714560172.

Peterson, C., & Seligman, M. E. P. (2004). *Character strengths and virtues: A handbook and classification*. Washington, DC/New York: American Psychological Association and Oxford University Press.

Pickett, K. E., & Wilkinson, R. G. (2015). Income inequality and health: A causal review. *Social Science and Medicine, 128*, 316–326. https://doi.org/10.1016/j.socscimed.2014.12.031.

Portes, A. (1998). Social capital: Its origins and applications in modern sociology. *Annual Review of Sociology, 24*, 1–24. https://doi.org/10.1146/annurev.soc.24.1.1.

Portes, A. (2000). The two meanings of social capital. *Sociological Forum, 15*(1), 1–12.

Prouteau, L., & Sardinha, B. (2015). Volunteering and country-level religiosity: Evidence from the European Union. *Voluntas: International Journal of Voluntary and Nonprofit Organizations, 26*(1), 242–266. https://doi.org/10.1007/s11266-013-9431-0.

Putnam, R. D. (1993). The prosperous community: Social capital and public life. *The American Prospect, 4*(13), 35–42. https://doi.org/10.1234/12345678.

Putnam, R. D. (2000). *Bowling alone: The collapse and revival of American community*. New York: Simon & Schuster.

Reed, D. (1995). Critical theory and the Catholic church's ambivalence about capitalism. *International Journal of Social Economics, 22*(2), 19–39. https://doi.org/10.1108/03068299510078813.

Rees, T. J. (2009). Is personal insecurity a cause of cross-national differences in the intensity of religious belief? *Journal of Religion & Society, 11*, 1–24.

Regnerus, M. D. (2003). Moral communities and adolescent delinquency: Religious contexts and community social control. *Sociological Quarterly, 44*(4), 523–554. https://doi.org/10.1111/j.1533-8525.2003.tb00524.x.

Riek, B. M., & Mania, E. W. (2012). The antecedents and consequences of interpersonal forgiveness: A meta-analytic review. *Personal Relationships, 19*(2), 304–325. https://doi.org/10.1111/j.1475-6811.2011.01363.x.

Rutherford, A., Zwi, A. B., Grove, N. J., & Butchart, A. (2007). Violence: A priority for public health? (part 2). *Journal of Epidemiology and Community Health, 61*(9), 764–770. https://doi.org/10.1136/jech.2006.049072.

Samuels, J. (2016). Buddhist disaster relief: Monks, networks, and the politics of religion. *Asian Ethnology, 75*(1), 53–74.

Sanyal, P. (2015). Group-Based microcredit & emergent inequality in social capital: Why socio-religious composition matters. *Qualitative Sociology, 38*(2), 103–137. https://doi.org/10.1007/s11133-015-9301-8.

Sarath, E. (2003). Meditation in higher education: The next wave? *Innovative Higher Education, 27*(4), 215–233. https://doi.org/10.1023/A:1024072313202.

Saroglou, V. (2013). Religion, spirituality, and altruism. In K. I. Pargament, J. J. Exline, & J. W. Jones (Eds.), *APA handbook of psychology, religion, and spirituality (Vol. 1): Context, theory, and research* (pp. 439–457). Washington, DC: American Psychological Association. https://doi.org/10.1037/14045-024.

Schensul, J. J., & Trickett, E. (2009). Introduction to multi-level community based culturally situated interventions. *American Journal of Community Psychology, 43*(3–4), 232–240. https://doi.org/10.1007/s10464-009-9238-8.

Schneider, M.-J. (2011). *Introduction to public health* (3rd ed.). Sudbury: Jones and Bartlett.

Schwadel, P. (2009). Neighbors in the pews: Social status diversity in religious congregations. *Interdisciplinary Journal of Research on Religion, 5*, 1–24.

Schwadel, P. (2016). Social class. In D. Yamane (Ed.), *Handbook of religion and society* (pp. 345–371). Cham: Springer International Publishing.

Shariff, A. F., & Aknin, L. B. (2014). The emotional toll of hell: Cross-national and experimental evidence for the negative well-being effects of hell beliefs. *PLoS One, 9*(1), e85251. https://doi.org/10.1371/journal.pone.0085251.

Shariff, A. F., & Rhemtulla, M. (2012). Divergent effects of beliefs in heaven and hell on National Crime Rates. *PLoS One, 7*(6), 1–5. https://doi.org/10.1371/journal.pone.0039048.

Smedley, B. D., & Syme, S. L. (Eds.). (2000). *Promoting health: Intervention strategies from social and behavioral research*. Washington, DC: National Academy Press.

Smidt, C. (Ed.). (2003a). *Religion as social capital : Producing the common good*. Waco: Baylor University Press.

Smidt, C. (2003b). Religion, social capital and democratic life: Concluding thoughts. In C. Smidt (Ed.), *Religion as social capital: Producing the common good* (pp. 211–222). Waco: Baylor University Press.

Smith, C. (Ed.). (1996). *Disruptive religion: The force of faith in social-movement activism*. New York: Routledge.

Solt, F. (2014). Reversing the arrow? Economic inequality's effect on religiosity. In L. A. Keister & D. E. Sherkat (Eds.), *Religion and inequality in America: Research and theory on religion's role in stratification* (pp. 337–353). New York: Cambridge University Press.

Solt, F., Habel, P., & Grant, J. T. (2011). Economic inequality, relative power, and religiosity*. *Social Science Quarterly, 92*(2), 447–465. https://doi.org/10.1111/j.1540-6237.2011.00777.x.

Stack, S., & Kposowa, A. (2006). The effect of religiosity on tax fraud acceptability: A cross-national analysis. *Journal for the Scientific Study of Religion, 45*(3), 325–351. https://doi.org/10.1111/j.1468-5906.2006.00310.x.

Stegmueller, D., Scheepers, P., Roßteutscher, S., & de Jong, E. (2012). Support for redistribution in Western Europe: Assessing the role of religion. *European Sociological Review, 28*(4), 482–497. https://doi.org/10.1093/esr/jcr011.

Story, W. T. (2013). Social capital and health in the least developed countries: A critical review of the literature and implications for a future research agenda. *Global Public Health, 8*(9), 983–999. https://doi.org/10.1080/17441692.2013.842259.

Taylor, R. J., Ellison, C. G., Chatters, L. M., Levin, J. S., & Lincoln, K. D. (2000, January). Mental health services in faith communities: The role of clergy in black churches. *Social Work, 45*(1), 73–87. https://doi.org/10.1093/sw/45.1.73.

Trawick, M. W., & Howsen, R. M. (2006). Crime and community heterogeneity: Race, ethnicity, and religion. *Applied Economics Letters, 13*(6), 341–345. https://doi.org/10.1080/13504850500395324.

Ulmer, J. T., & Harris, C. T. (2013). Race and the religious contexts of violence: Linking religion and white, black, and Latino violent crime. *The Sociological Quarterly, 54*(4), 610–646. https://doi.org/10.1111/tsq.12034.

Van Tubergen, F., Te Grotenhuis, M., & Ultee, W. (2005). Denomination, religious context, and suicide: Neo-Durkheimian multilevel explanations tested with individual and contextual data. *American Journal of Sociology, 111*(3), 797–823. https://doi.org/10.1086/497307.

Wakefield, S. E. L., & Poland, B. (2005). Family, friend or foe? Critical reflections on the relevance and role of social capital in health promotion and community development. *Social Science and Medicine, 60*(12), 2819–2832. https://doi.org/10.1016/j.socscimed.2004.11.012.

Walsh, A. (2002, Spring). Returning to normalcy. *Religion in the News, 5*(1), 26–28.

Weber, M. (1992). *The Protestant ethic and the spirit of capitalism.* ([Student's] ed.). London/New York: Routledge.

Wilkinson, R. G., & Pickett, K. E. (2006). Income inequality and population health: A review and explanation of the evidence. *Social Science and Medicine, 62*(7), 1768–1784. https://doi.org/10.1016/j.socscimed.2005.08.036.

Winett, L. B. (1998). Constructing violence as a public health problem. *Public Health Reports, 113*(6), 498–507.

Wood, R. L. (2002). *Faith in action: Religion, race, and democratic organizing in America.* Chicago: University of Chicago Press.

Worthington, E. L., Hook, J. N., Davis, D. E., & McDaniel, M. A. (2011). Religion and spirituality. *Journal of Clinical Psychology, 67*(2), 204–214. https://doi.org/10.1002/jclp.20760.

Wray, M., Colen, C., & Pescosolido, B. (2011). The sociology of suicide. *Annual Review of Sociology, 37*(1), 505–528. https://doi.org/10.1146/annurev-soc-081309-150058.

Wuthnow, R. (2002). Religious involvement and status-bridging social capital. *Journal for the Scientific Study of Religion, 41*(4), 669–684. https://doi.org/10.1111/1468-5906.00153.

Yeary, K. H.-C. K., Ounpraseuth, S., Moore, P., Bursac, Z., & Greene, P. (2012). Religion, social capital, and health. *Review of Religious Research, 54*(3), 331–347. https://doi.org/10.1007/S13644-011-0048-8.

Yonker, J. E., Schnabelrauch, C. A., & DeHaan, L. G. (2012). The relationship between spirituality and religiosity on psychological outcomes in adolescents and emerging adults: A meta-analytic review. *Journal of Adolescence, 35*(2), 299–314. https://doi.org/10.1016/j.adolescence.2011.08.010.

Social Identity and Discrimination in Religious/Spiritual Influences on Health

Doug Oman and Amani M. Nuru-Jeter

Abstract This chapter reviews theories and empirical evidence on relations between religion and spirituality (R/S), social identity, and discrimination by race/ethnicity, sexual orientation, gender, and religious tradition. We also examine health-supportive (salutogenic) processes arising from social identities linked to each characteristic. Religion and spirituality are conceived as evolving over time and residing at both collective and individual levels. Each type of discrimination has been linked to poorer health outcomes.

Evidence indicates that racial prejudice correlates negatively with some R/S dimensions including intrinsic religiousness, spiritual quest, positively with other dimensions such as extrinsic religiousness, and religious fundamentalism, and that R/S factors can buffer against the adverse health effects of racial discrimination. Discrimination by religion has been found more common in countries with less political stability and among individuals who are nonreligious or lower in spirituality. Prejudice against sexual minorities correlates negatively with R/S quest and positively with R/S fundamentalism and intrinsic religiousness, but religious traditions are divided in their attitudes, and involvement with supportive traditions is linked to better health among sexual minorities. Support for gender stratification correlates with worship service attendance and perceived importance of religion, especially in culturally non-dominant traditions, but evidence suggests many traditions pragmatically balance normative expectations with practical considerations.

This chapter is one of thirteen reviews in this volume providing a public health perspective on the empirical evidence relating R/S to physical and mental health; with the previous chapter ("Social and Community-Level Factors"), this is one of two reviews emphasizing factors of special interest to social epidemiology.

Keywords Social identity · Discrimination · Religion · Spirituality · Health · Public health · Social epidemiology · Salutogenesis · Ethnicity · Gender

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In the previous chapter, Oman and Syme have reviewed theory and accumulating empirical evidence on how community-level measures of religion and/or spirituality (R/S) are related to health and longevity. They also review R/S linkages with several of key social factors shown to impact health and health disparities, such as social capital, socio-economic position, income inequality, violence and crime, and community responses to disasters, providing many useful glimpses of how R/S may operate to affect both individual and community health (see chapter "Social and Community-Level Factors in Health Effects from Religion/Spirituality," this volume). Yet, the foregoing subset of social factors is not exhaustive. In the present chapter, we review empirical evidence and theory on how religion and spirituality are related to two additional factors of interest to social epidemiologists and other scholars interested in the social determinants of health: Social identity and discrimination. We consider these factors in a separate chapter because of their close but infrequently noted interconnections (both pertain to social identities), and their large and conceptually nuanced research base (i.e., covering multiple types discrimination).

Social identity is often defined as one's sense of self-worth and sense of belonging in the social world (Tajfel and Turner 2004). Derived largely from membership in particular social groups, social identity is a determinant of social perceptions and social behaviors (e.g., intergroup relations), and is the main basis for differentiation and discrimination between groups (Spears 2011). Discrimination, as derived from social identity, has been defined in various ways, but at its core refers to distinguishing between people based on their membership within a given social group in ways that have adverse effects at both the individual and community level—where community may be defined either geographically (due to concentration of certain social groups), or as an aggregate of individuals belonging to the same social group, regardless of geography.

Krieger (2000, p. 40; 2014, p. 69) describes discrimination as "all means of expressing and institutionalizing social relationships of dominance and oppression." Social identity and discrimination are most commonly studied empirically using self-report measures of interpersonal relations. Less common, are community-level and/or structural measures capturing expressions and characteristics that are distinct from the aggregation of individual-level responses – for example, the number of religious congregations per capita (measuring collective social identity), the existence of explicitl discriminatory laws (measuring collective discrimination, Fox 2007), or neighborhood per capita number of off-premise liquor establishments (measuring adverse collective conditions that may mediate health effects from structural discrimination). Consistent with frameworks presented in the chapter by Oman and Syme, as well as others (e.g., Harrell 2000; Jones 2000; Tajfel and Turner 2004), we conceptualize social identity and discrimination as multidimensional phenomena best viewed as existing at both the collective and individual levels (see Fig. 1 in the chapter "Social and Community-Level Factors in Health Effects from Religion/Spirituality").

Oman and Syme's framework and approach also emphasize that community-level R/S factors, like individual-level R/S factors, may potentially exert either

beneficial or detrimental influences on health. For example, R/S traditions espouse values and behaviors that oppose crime. Similarly, as noted by Idler (2014), religion may act to reduce economic inequality, to buffer the adverse impact of such inequality, or, conversely to exacerbate inequality. We therefore conceptualize different dimensions of R/S as holding the potential to either exacerbate or reduce the level of discrimination in an individual or community, depending on the R/S dimension and the particular sociocultural context.

For example, as noted by Oman and Syme, pro-equity influences from religion, when they occur, are consistent with the universality of *justice* as a central value in human culture and in many world religions. Idler (2014) notes that "religious narratives about overcoming slavery and injustice, as in the exodus of the people of Israel from Egypt or the cries of the Old Testament prophets for social reform, provide models for a moral response to power and hope for peace and justice in the future for those who are oppressed in the present" (p. 15). Similarly, the Roman Catholic Church has published encyclicals about the dignity of labor, affirming that "Justice is the primary way of love… the constant and firm will to give to each what is due" (Melé 2011, p. 122) (see also Francis 2015).

But, as Oman and Syme note, human perceptions of the requirements of justice have changed a great deal over time, as reflected in the de-legitimation and then abolition of slavery, and the promulgation of numerous types of universal human rights. Religious traditions have taught the sanctity of justice as an abstract principle, but have also sanctified specific principles or customs viewed as fostering the conditions of justice. The sanctification of what Pargament (1997, p. 60) calls "religious means," in addition to justice *per se* as a more abstract "religious end," enhances the ability of the R/S concern for justice to produce beneficial practical behavior that fosters justice in society. But the sanctification of religious means, such as codes of behavior within specific relational contexts, also opens various risks. When sociocultural conditions change, teachings that may have originally benefited society and social progress may become destructive anachronisms when applied out of context in a later epoch (e.g., early biblical teachings about slavery, and churches that resisted abolition of slavery).[1]

Religious teachings about justice may evolve at different rates in different communities, and be shaped by different sets of competing values and influences,

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[1] A strikingly anachronistic teaching is the statement in Leviticus 25:44–46 that "it is from the nations around you that you may acquire male and female slaves…. You may keep them as a possession for your children after you…" (NRSV). In the Christian New Testament, Killingray (2007, p. 92) lists "five sets of instructions to slaves as members of a household," including Titus 2:9, 1 Peter 2:18–23, 1 Timothy 6:1–2, Colossians 3:22–4:1, and Ephesians 6:5–8, noting that "some see these texts as reactionary, affirming situations of dominance and power, contradicting the texts of mutual submission and equality…. Others see them as revolutionary in their call to the… masters to act in love to those in their care." Killingray (2007) views the anachronistic misuse of such texts as still occurring, reporting that "some have applied the master/slave codes to employment practices and suggested that they form guidelines for employees and employers. However it is hard to argue that Peter's instruction to slaves (1 Pet. 2:20) that they have God's approval when they endure suffering and are beaten, even when they have acted correctly, can apply to modern employment situations" (pp. 92–93).

ranging from inspired versus corrupt leadership to the effects of guidance by differing moral philosophies (Graham et al. 2009). The resulting unequal trajectories may lead at times to profound disagreements between religious communities, and between religious leaders, as happened on the abolition of slavery. In recent decades, widespread disagreements both between and within religious communities as well as between religious individuals have been evident on justice-related issues that include the obligations of male and female spouses within a marriage and the legitimacy of same-sex marriage.

The previous paragraphs argue that religion is likely to exert bivalent causative effects on justice – sometimes fostering justice, equity, and inclusiveness, and sometimes hindering them. However, reverse causal effects may also potentially operate: For example, individuals as well as communities may often turn most earnestly to religion for strength and comfort in times of distress. That is, some religion may foster social injustice, but social injustice may also foster religion. The direction of causal effects between R/S variables and variables related to social justice may often be difficult to disentangle in cross-sectional studies (for fuller discussion see Oman and Syme's chapter, "Social and Community-Level Factors in Health Effects from Religion/Spirituality," this volume).

From a theoretical standpoint, therefore, R/S factors may be expected to exhibit complex patterns of relations to social identity, discrimination, and related social factors through several types of causality, both direct and bidirectional or reversed. As is evident in the empirical reviews later in this chapter, such complexity and bivalent relations are indeed apparent in the available empirical literature.

1 Group Identity and Discrimination: General Considerations

Prior to examining relations with R/S factors, it is useful to review some of the theoretical underpinnings, the evolving legal status, and the health relevance of the two intertwined phenomena of social identity and discrimination. Importantly, these two phenomena reflect both the positive "goods" as well as the negative "bads" that Portes (1998, p. 18) has noted are embedded in social capital, one of the social factors currently drawing the most intense scholarly interest.[2]

Social identity is an everyday experience for almost all people. In particular, many people in modern societies understand themselves in part as members of one or more groups defined by a "protected characteristic," such as race, ethnicity, religion, sexual orientation, gender, and various other traits (Pearson 2016, p. 37). Membership in such a group may be a source of strength and resilience, providing

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[2]Portes (1998, p. 18) pointed out that "sociability cuts both ways. While it can be the source of public goods… [social capital] can also lead to public 'bads'" such as exclusion of outsiders, excess claims on group members, restrictions on individual freedom, and downward levelling norms.

cultural or material resources as well as "bonding social capital… based on networks that are similar in terms of certain demographic factors" (Ferlander 2007, p. 119; see also chapter "Social and Community-Level Factors in Health Effects from Religion/Spirituality," this volume). Such resources can buffer against adversity as well as provide direct benefit. Conversely, real or perceived membership in such a group may also at times subject individuals to social or economic disadvantage and discrimination. The psychosocial structures that generate and sustain such group identities transcend individuals and reside in part at the community level, and their daily concrete manifestations are mediated by the behaviors of both individuals and institutions (see Fig. 1, "Social and Community-Level Factors in Health Effects from Religion/Spirituality," this volume).

Both anti-group discrimination and the salutary aspects of group identity have for many years been recognized as relevant to public health. Historically, more attention has been devoted to discrimination than to identity benefits (e.g., Krieger 2000). Yet the positive and negative facets of group identity are intertwined. In particular, evidence has documented that different religion/spirituality dimensions correlate in complex ways with both the salutary and adverse phenomena related to group identity. Many explanations have been offered for the "paradox" that some facets of religion correlate with greater prejudice (Hunsberger and Jackson 2005, p. 808). Proffered explanations have ranged from the misinterpretation or overextrapolation of specific R/S teachings to unconscious group hostility facilitated by certain personality traits;[3] it seems likely that multiple explanations apply.

1.1 Protected Characteristics: Evolving Implications

Several historical and conceptual considerations apply to most "protected" personal characteristics (Pearson 2016, p. 37; Lippert-Rasmussen 2013). Around the world, many countries have passed laws against using race, religion, or various other characteristics as a basis for choosing who will be hired for a job, sold a house, or admitted to a public educational institution. In US law, successive waves of legislation or litigation instituted or expanded prohibitions against discrimination in political rights, access to public accommodations such as inns, employment and housing, and marriage. And the set of protected characteristics has expanded over time, and now often includes religion, race/ethnicity, gender, sexual orientation, and sometimes other characteristics such as age, disablement, or pregnancy.[4]

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[3] For example, one recent mediational study reported that fundamentalism and right wing authoritarianism fully mediated the relationship between religiosity and prejudice (Johnson et al. 2011).

[4] Disablement is a protected characteristic in US law, yet few if any empirical studies have examined relations of R/S factors to anti-disability prejudice or other attitudes towards disabled people. However, community response to disability is a topic of active theological inquiry, and some scholarship has investigated traditional attitudes toward disablement (Miles 2002; Creamer 2012). Existing scholarly literature on R/S and disability devotes little attention to any possible R/S role in anti-disabled prejudice or discrimination, instead focusing primarily on R/S roles in coping with the challenges of disability (e.g., Chen et al. 2015; Kamei 2014).

Public health efforts thus converge with legal efforts in seeking to prevent discrimination, and to resolve and heal its consequences. Yet public health has also inherited some of the conceptual ambiguities of legal responses to discrimination. For example, in the US and elsewhere, there is no single generally accepted philosophical understanding of discrimination,[5] and its operational definitions continue to be debated (e.g., Hasnas 2002; Hunter 2001; Koppelman 2015; Lippert-Rasmussen 2013; Moreau 2010). Also unclear is the philosophical basis and appropriate line of demarcation between settings where discrimination is prohibited, such as in employment and public accommodations, versus private and unregulated spheres of life. For example some influential voices have advocated that the scope of application of anti-discrimination public accommodations law should be restricted to activities by groups that are "primarily commercial" and "predominantly engaged in market related activity," whereas others insist on the relevance of broader "understandings of citizenship" and that the application of anti-discrimination law should "properly encompass more than the market [and should recognize] the individual's right to meaningful participation in diverse institutions that powerfully construct both citizen [engagement and responsibility] and self" (Hunter 2001, pp. 1625, 1637).[6]

1.2   Health Consequences

Discrimination related to protected characteristics has been the focus of much research in public health, where one leading researcher defined discrimination as "a socially structured and sanctioned phenomenon, justified by ideology and expressed in interactions, among and between individuals and institutions, intended to maintain privileges for members of dominant groups at the cost of deprivation for others" (Krieger 2000, p. 41). Evidence indicates that self-reported experience of discrimination of any kind is generally correlated with poorer well-being (r = −.23, in a recent meta-analysis by Schmitt et al. 2014, of k = 328 studies). The adverse effects

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[5] Lippert-Rasmussen (2013) describes various definitions, reporting that "in sum, while almost everyone will agree that certain (and only) cases of differential treatment constitute discrimination, people will classify (and evaluate) many cases differently discrimination-wise. In part, this classificatory diversity reflects that there are different notions of discrimination in use" (p. 1407).

[6] For example, Hunter (2001) notes that one specific US Supreme Counrt justice was "the Court's leading proponent of basing application of [an anti-discrimination] civil rights provision squarely on whether the group is primarily commercial" (p. 1625). More generally, United States jurisprudence "has never developed a theory of public accommodations" (p. 1614), which represent "intrinsically hybrid entities that are private as against the state yet simultaneously open to the public" (p. 1592). Furthermore, "there is enormous variation in the fundamental concept of what is a public accommodation and on what bases such entities may exclude or differentiate as to certain groups of persons" (p. 1616). Hunter (2001) argues that "the history of public accommodations laws… reveals a continuous, evolving dialectic with understandings of citizenship" (p. 1614).

of discrimination are also worse for disadvantaged groups than for advantaged groups (r = −.24 versus r = −.10, k = 302, in Schmitt et al. 2014). Consistent with contemporary understandings of how psychosocial stressors can adversely affect physical health, several studies have documented links between discrimination and physiological measures such as shortened telomeres and hypertension (Chae et al. 2012, 2014; Pascoe and Smart Richman 2009; Berger and Sarnyai 2015). More generally, despite there being some mixed findings, the majority of the literature on the health consequences of discrimination shows deleterious effects for both mental and physical health, including heightened depression, anxiety, and psychological distress, as well as poorer sleep quality, immune function, birth outcomes, and self-rated health, worse physiologic dysregulation, and elevated cardiometabolic risk (Mays et al. 2007; Williams and Mohammed 2013). Many findings persist despite numerous adjustments for confounders. Although largely reliant on self-report measures – as is the overwhelming majority of research on religion/spirituality and much other psychosocial and health research – discrimination research benefits from multiple measures that possess a range of validation information, and many findings are robustly supported by studies employing diverse methodologies[7] (Krieger et al. 2005; Lewis et al. 2015; Taylor et al. 2004).

Identities related to protected characteristics also commonly link people to health and resiliency factors.[8] Emphasis on the role of positive health-generating factors is sometimes called a *salutogenic* perspective (Antonovsky 1996; Levin 1996). Williams (1997, p. 330) clearly advocated the importance of salutogenic insight two decades ago when noting that "much prior research on minority populations has focused only on pathology and deficits," urging that researchers "should also assess a broad range of social and psychological resources such as social support…. perceptions of mastery and control, and coping patterns [and] health-enhancing cultural resources [such as] religious involvement."

More generally, the process of identification has itself been theorized to confer benefits. For example, the influential "rejection-identification" framework postulates that identifying with a rejected group can provide a needed sense of belonging

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[7] Lewis et al. (2015, p. 428) report that "The overwhelming body of research on discrimination and health indicates that self-reported experiences of discrimination are an important risk factor for poor mental and physical health. Studies have found remarkably consistent associations between reports of discrimination and health across cohorts and across outcomes. Importantly, these associations are independent of potential threats to validity in terms of personality characteristics, and they have been observed with both subjective and objective outcomes and in cross-sectional as well as longitudinal studies."

[8] The linkage of protected characteristics to both assets and risks suggests that public health could learn much useful information by more often employing asset-focused models to examine pre-existing and emergent subcultural beliefs and practices that correspond to each protected characteristic. Such research could shed much light on how religion and spirituality are employed by each population in its own life-world, and would complement the prevailing and largely pathogenic discrimination-focused approaches, Similar investigations have employed Antonovsky's (1996) salutogenic model, the developmental assets model used in adolescent health research (Lerner and Benson 2003), and various other approaches (Lindstrom and Eriksson 2006; Morgan et al. 2010).

and acceptance (Branscombe et al. 1999, p. 137), an experience that may often encompass an experience of congruence and being valued on "spiritual dimensions" (Hagerty et al. 1992, p. 174). On the other hand, some have also argued that group identification can make perceptions of discrimination more relevant and therefore more harmful (Schmitt et al. 2014). Empirical research has yielded mixed findings, with one recent meta-analysis reporting 12 buffering and 8 exacerbating effects out of 68 tests of moderation (Pascoe and Smart Richman 2009).[9]

1.3   Parallel Empirical Reviews

Although many parallels across different protected characteristics are evident for salutogenic processes, and parallels are also evident for pathogenic processes, each protected population has its own history, needs, and capacities. Differences also exist in how R/S traditions have interpreted protected characteristics and related over time to the people possessing them. Hence, the next four sections offer separate reviews of literature on the R/S-health relevance of race/ethnicity, discrimination by religion, sexual orientation, and gender.[10] Of course, we should not imagine that impacts of these four types of identities are independent. Many people self-identify with multiple statuses related to protected characteristics (e.g., female and religious minority), and the implications of the combination or intersection of such identities is often different than the mere aggregate of the multiple components. Phenomena of *intersectionality* are thus widely and increasingly acknowledged as important in many social and health sciences (e.g., Bowleg 2012; Lewis et al. 2015). Intersectionality is also important to the relation between religion/spirituality and discrimination (e.g., Rosenkrantz et al. 2016). Evidence that R/S factors may buffer the impact of discrimination, noted at various points in this chapter, is relevant to interpreting positive implications of the intersection of religious identity with other identities. Three way intersectionality may also sometimes be important (e.g., Muslim, female, and lesbian). The scope of this chapter does not permit a full review

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[9] Pascoe and Smart Richman (2009) concluded that "increasing levels of identification with one's group may be as likely to serve as a buffer than as an intensifier… The direction of this relationship seems to be dependent on other variables, such as the level of discrimination stress experienced, and identification type and complexity" (p. 543). Although their generalizability to everyday life is unclear, laboratory-based *experimental* studies are slightly more supportive, with 14 showing buffering, only 4 showing exacerbation, and one showing both, out of 35 samples where moderation was tested (Schmitt et al. 2014).

[10] Various findings document the need for developing unique understandings of relations between R/S and different types of discrimination. Of comparative interest were some studies that examined whether R/S measures showed similar correlations with attitudes towards homosexuality and other potential targets of prejudice. Whitley's (2009) meta-analysis indicated that Christian orthodoxy and intrinsic religiousness were correlated with more favorable attitudes toward racial outgroups, but less favorable attitudes toward homosexuals, whereas quest (positively) and religious fundamentalism (negatively) were correlated in similar directions for both sets of attitudes.

of research related to intersectionality, but the phenomenon should be taken into account in future work.

Most of the available evidence employs the individual as the unit of analysis, with collective factors, especially collective dimensions of R/S factors, remaining unmeasured and implicit. Yet, as described by Oman and Syme's review of other social factors (chapter "Social and Community-Level Factors in Health Effects from Religion/Spirituality," this volume), ample cross-national evidence has included multi-wave international surveys, such as the World Values Survey (WVS) and the European Values Study (EVS), where national-level measures have also been included (e.g., Doebler 2014; Ekici and Yucel 2015, below). The bulk of the evidence pertains to various dimensions of religion, although a few studies also offer evidence concerning the relation, seemingly often salutary, between spirituality and discrimination (for discussion of definitions of religion and spirituality, see chapters "Elephant in the Room: Why Spirituality and Religion Matter for Public Health" and "Questions on Assessing the Evidence Linking Religion/Spirituality to Health", this volume). Studies using community-level R/S measures are not equally available for the different social identities that we review (race/ethnicity, religion, sexual orientation, gender), so our attention to community-level processes will necessarily vary somewhat between sections.

2 Ethnicity and Racial Discrimination

A person's ethnicity has been defined as the social group with whom a person is either self-identified or socially-assigned[11] "as a result of a mix of cultural and other factors including language, diet, religion, ancestry, and physical features traditionally associated with race" (Bhopal 2004, p. 441).[12] In the US, ethnically-based health disparities are widespread, with most ethnic minority groups suffering poorer health than their white counterparts across a variety of health outcomes (Schneider 2011). One contributing factor may be discrimination on the basis of race/ethnicity, which has been one of the most intensively studied forms of discrimination (Pascoe

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[11] Jones et al. (2008) emphasize distinctions between self-identified and socially assigned race, reporting evidence of 8%–24% disparities in self-reported very good or excellent health among those self-identifying as minorities who possess socially assigned minority versus White race, whereas "no significant differences were found between those socially assigned as White who self-identified as White and those socially assigned as White who self-identified as Hispanic, as American Indian, or with More than one race" (p. 496), after adjusting for age, education, and language.

[12] "Race and ethnicity are increasingly used as synonyms," although "by historical and common usage [race meant] the group (sub-species in traditional scientific use) a person belongs to as a result of a mix of physical features such as skin colour and hair texture, which reflect ancestry and geographical origins" (Bhopal 2004, p. 444).

and Smart Richman 2009). Although religious tradition and race/ethnicity are closely aligned in some settings, the two constructs have important distinctions.[13]

Numerous studies have linked self-reported experiences of racial/ethnic discrimination to poorer mental and physical health. One meta-analysis reported that poorer well-being was correlated with perceived experience of racism (r = −.21, k = 211 effect sizes) (Schmitt et al. 2014). More broadly, a meta-analysis of 293 studies by Paradies et al. (2015) found that racism was associated with poorer negative mental health (r = −.23, k = 227 studies of constructs such as depression, anxiety, negative affect), poorer positive mental health (r = −.13, k = 113, e.g., studies of life satisfaction, positive affect, etc.), poorer general health (r = −.13, k = 30), and poorer physical health (r = −.09, k = 50) Similar findings have also been reported in a variety of other systematic reviews and meta-analyses (e.g., Pascoe and Smart Richman 2009; Priest et al. 2013; Williams and Muhammed 2009). Other reviews have described theory and evidence for harm through community-level mediators such as poorer housing, poorer educational opportunities, and inegalitarian policies (Williams and Muhammed 2013). A range of studies has also documented the existence of subjective and objective experiences of racial discrimination within healthcare systems (e.g., Quach et al. 2012). Discrimination-related healthcare disparities have also been discussed in a report by the Agency for Healthcare Research and Quality (2007), and in multiple reports by the Institute of Medicine (2001; Smedley et al. 2003).

Individual-level research has investigated how R/S factors are linked to higher or lower levels of racial prejudice (Doehring 2013). In the 1960s, psychologist Gordon Allport generated widespread interest when he argued that religion could be related to either greater or lesser levels of racial prejudice, depending on whether an individual's motivations for religious engagement pertained to the core religious teachings themselves ("intrinsic" religious motivation) or, alternatively, to membership in a group ("extrinsic" religious motivation) (Allport and Ross 1967). Allport (1966, p. 447) famously asserted a "paradoxical situation" that religion both "makes for prejudice, and… unmakes prejudice." A recent meta-analyses of US-based studies supports Allport's arguments, reporting that racism correlated negatively with intrinsic religiousness (r = −.07) and spiritual quest (r = −.07), but positively with the dimensions of extrinsic religiousness (r = .17), religious group identification (r = .10), and religious fundamentalism (r = .13) (Hall et al. 2010, k = 55 studies). This is consistent with Allport's view that whereas group membership (extrinsic) motives for religiousness are compatible with racism, people higher in intrinsic motives will have more fully assimilated core teachings, such as the love ethic of Jesus, that endorse compassion and love towards the entire human family.

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[13] However, one recent systematic review of racism and health noted that religion and race are often conflated in popular culture" (Priest et al. 2013). In fact, the degree of cultural alignment between ethnicity and religion varies greatly worldwide. Populations of some countries such as Iran, Thailand, and Ireland adhere overwhelmingly to a single religious tradition. Elsewhere, ethnic and religious identities may show diverse configurations ranging from being "fused" (e.g., Laotian immigrants in Louisiana, p. 269) to distinct and equal, distinct and hierarchical, or in conflict (Juang and Syed 2008).

Ethnic/religious discrimination outside of the US has been investigated in various other studies, mostly European (Meuleman and Billiet 2011; Scheepers et al. 2002). Two studies have reported multi-level analyses of data from 2008 EVS surveys of 47 European countries. Doebler (2015a) employed data from all 47 countries (n = 67,786), finding that belief in a spirit/life force or personal God predicted less racial prejudice (odds ratios [ORs] of 0.72 and 0.84), whereas belief in "one true religion" (p. 753) predicted greater racial prejudice (OR = 1.35). Another study by Ekici and Yucel (2015) used the same EVS data, focusing on 37 member or potential members of the European Union [EU] (n = 27,586). Their final model, which adjusted for "trust in the EU" and national mean levels of trust, indicated only that belief in one true religion predicted racial prejudice (OR = 1.14). Such results are consistent with much previous research linking exclusivist beliefs to prejudiced and exclusionary social attitudes, although the causes for this relationship continue to be debated (Hood et al. 2009).

Turning to the positive effects of religion/spirituality,[14] several individual-level studies have also reported that R/S factors buffer against the deleterious effects from various types of discrimination, including racial/ethnic discrimination (Lewis et al. 2015). Buffering by R/S against the adverse effects of discrimination has been observed for negative affect (e.g., depression and anxiety) and longitudinally on distress in African Americans adults (Bierman 2006, n = 201, all forms of discrimination; Ellison et al. 2008, n = 645), depressive symptoms among Mexican-American post-secondary vocational students (Fernandez and Loukas 2014, n = 247), depression among ethnic minorities in the Netherlands (Ikram et al. 2016, n = 11,780), self-rated poorer health among Mexican-origin US adults (Finch and Vega 2003, n = 3012), and on poorer health behavior (smoking cigarettes) among African American and Mexican American students (Horton and Loukas 2013).

R/S engagement by African American adolescents has also been found to predict lower racial self-stigmatization (Brega and Coleman 1999, n = 50). One study suggests that mindfulness, sometimes viewed as a "borderline spiritual construct" (see chapter "Model of Individual Health Effects from Religion/Spirituality: Supporting Evidence," this volume) may buffer against the adverse effects of perceived discrimination on depression (Brown-Iannuzzi et al. 2014). Although common, findings of protection or buffering are not universal. One study found that religious attendance did *not* moderate the adverse mental health effects of discrimination experienced by Asian Americans (Appel et al. 2014). And, unusually, among early adolescent Dutch Muslim girls, the relation between experiencing ethnic discrimination and problem behaviors was buffered by a strong ethnic identification, but was *exacerbated* by a strong religious identification (Maes et al. 2014, n = 95).

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[14] More broadly, numerous empirical studies have employed salutogenic frameworks to study effects from ethnic group membership. Such asset-focused frameworks are useful for understanding the salutary and buffering effects of R/S factors, but have usually been published in social science or psychiatric rather than public health literatures (e.g., Riedel et al. 2011), and many if not most have been focused on adolescents (e.g., Acevedo-Polakovich et al. 2014; Alvarado and Ricard 2013; Braun-Lewensohn and Sagy 2011; Glanz et al. 2005; Neblett et al. 2012).

3 Discrimination Based on Religious Affiliation

Discrimination on the basis of religion is prohibited in the US Civil Rights Act of 1964 (Title VII) (Ghumman et al. 2013). Included in this law is prohibition of discrimination against non-religious people (e.g., agnostics, atheists). At the turn of the millennium, the US, Australia, and South Africa were among only 30% of 175 states worldwide that did not formally impose any policies involving explicit religious discrimination. However, in contrast to observance of most other human rights, *religiously-focused* discrimination has been increasing worldwide (Fox 2007). Anti-Muslim discrimination is an emerging public health concern in the US (Samari 2016). Anti-semitism, combining features of anti-ethnic and anti-religious prejudice, remains a problem in many parts of the world, and continues to be perceived as a problem in the US (Cohen 2010). In the US, workplace religious discrimination grievance filings are increasing faster than other discrimination filings, but remain understudied. A recent review identified fewer than seven empirical studies of workplace religious discrimination, and suggested that increased reporting may be occurring because of increased religious expression and diversity (Ghumman et al. 2013). Health disparities between various religious traditions and denominations are widespread but seldom the focus of research, with large fractions of observed disparities perhaps attributable to demographics or other confounders (Koenig et al. 2012). Levels of psychological distress among non-believers adhering to identities such as "atheism, agnosticism, no religion" are sometimes higher and sometimes lower than stress levels of believers (Weber et al. 2012, p. 75, from a systematic review of k = 10 studies).

The health consequences linked to religiously-focused discrimination appear broadly similar to the general patterns observed for other types of perceived discrimination, based on the handful of available studies. For example, a population-based study in England documented increased rates of mental disorders among both Christians (OR = 2.64) and non-Christians (OR = 2.94) who had experienced religious discrimination, net of numerous potential confounders (Jordanova et al. 2015, n = 7318). Greater risk of subclinical paranoia but not of anxiety has been linked to religious discrimination against Muslim Americans (Rippy and Newman 2006, n = 152). Self-esteem has shown complex bidirectional patterns of relation to perceived religious discrimination against Australian Muslims (Every and Perry 2014, n = 49). Poorer psychological well-being and poorer self-reported physical health have been found among US atheists who experienced perceived discrimination, although atheist *identification* correlated with better health and well-being, suggesting a counterveiling "rejection-identification" process (Doane and Elliott 2015, p. 131, n = 960).

Not everyone engages in religiously-focused discrimination, as documented by studies of individual-level predictors. One European study found that spirituality (interest in the "sacred or supernatural," p. 115) and belief in a personal God predicted *lower* levels of prejudice against people of a "different" religion (p. 111), whereas belief in one true religion or being nonreligious predicted greater religious prejudice (Ekici and Yucel 2015, EVS, 37 countries, n = 23,560). Similarly, another

study reported that in the "vast majority" of European countries, belief in a spirit/life force, personal God, or individualized religion predicted less anti-Muslim intolerance (ORs of 0.84, 0.88, and 0.93, respectively), whereas belief in "one true religion" (p. 69) predicted greater anti-Muslim intolerance (OR = 1.37), and frequency of attendance at religious services was not predictive (Doebler 2014, EVS, 44 countries, ns > 45,000). In contrast, an earlier analysis found that religious variables did not predict anti-Muslim prejudice, except that frequency of attendance at religious services predicted prejudice in Eastern Europe only (OR = 1.24 for more than weekly versus never, 13 countries) (Strabac and Listhaug 2008, 1999–2000 EVS, 30 countries, n > 35,000). And in Dutch children and adolescents, religiously discriminatory attitudes were found "more frequent during childhood than during pre-adolescence or adolescence, more common in homogeneous schools than in heterogeneous schools, and more likely when parents frequently express messages promoting mistrust of other religious groups" (van der Straten Waillet and Roskam 2012, p. 215, n = 297). Among Swedish adolescents, anti-semitism was found more common among boys, those born outside of Sweden, those less educated or unemployed, and Muslims (Bevelander and Hjerm 2015, n = 9283).

Community-level predictors of religiously-focused prejudice have also been documented. In Europe, more prejudice is present in countries with lower GDP, lower levels of generalized trust, or more political instability (Doebler 2014; Ekici and Yucel 2015). Some have speculated that lower observed R/S-well-being correlations in communist versus non-communist countries may have been observed because "it was difficult to be religious in the communist nations" (Diener and Clifton 2002, p. 208, WVS for 41 societies, n = 52,624).

Various types of research are probing the psychological processes underlying religiously focused prejudice and the perception of such prejudice. For example, Abu-Raiya (2013) noted a small literature on links between religious prejudice and perceptions of *desecration*. Pagano (2015) developed a scale to measure microaggressions against atheists. Another study indicates that anti-atheist attitudes may be rooted in distrust, "fully mediated by the belief that people behave better if they feel that God monitors their behavior" (Gervais et al. 2011, p. 1189) (see also Baumard and Chevallier 2015). Similarly, reports of experiencing worldview-focused discrimination have been found more common among those with a stronger atheist identification (Doane and Elliott 2015, n = 960), and less common among people self-identifying simply as "no religion" or "none" rather than as "atheist" or "agnostic," a finding "consistent with the view that people who hold more pronounced views are more likely to report discrimination" (Cragun et al. 2012, pp. 105, 117).

4   Sexual Orientation and Gender Identity Discrimination

The health of lesbian, gay, bisexual, transgender and more recently queer (LGBTQ) populations has been a recognized concern of public health and other major health professions (e.g., Boehmer 2002; Herek and Garnets 2007). Yet in society at large, LGBTQ individuals remain "sexual minorities" who face various types of prejudice

and discrimination that are linked to adverse mental and physical health outcomes (Meyer 2013). On various issues, LGBTQ individuals and groups may also face ideological opposition from adherents to some religious and cultural perspectives.

Until recently, most religious views on the appropriate purposes and needs for self-regulation of sexual energies were more restrictive than the freer views that have emerged since the development of antibiotics and effective contraceptives (Siker 2007; Rycenga 2009). Since then, and especially since the new millennium, a number of denominations have changed their official stances on LGBT-related issues (Rycenga 2009). Yet official stances continue to vary considerably between traditions and denominations, and it is far from clear that all traditions will eventually change their views (Siker 2007). Various aspects of traditional views also persist in substantial segments of the population, leading some researchers on R/S and sexual orientation and identity to urge awareness of the "ideological surround" that provides context for attitudes towards LGBT populations (see discussion in Hood et al. 2009, p. 415).

Much evidence indicates that LGBT populations possess poorer mental health than the general population, perhaps because of discrimination. More than a dozen studies of discrimination based on perceived sexual orientation have documented links to poorer health outcomes including depression, anxiety, sick days, and total health problems (Pascoe and Smart Richman 2009, see article's supplement). Furthermore, a meta-analysis of empirical studies (k = 10) in the US (k = 8), New Zealand, and the Netherlands indicated that gays and lesbians were more likely than the general population to have had many specific types of mental disorder as well as any mental disorder in their lifetime (OR = 2.41) or in the past year (OR = 2.03) (Meyer 2013). Similar findings were reported in a representative national sample in the UK (Chakraborty et al. 2011, n = 7403).

Emerging evidence indicates that certain forms of religion may mitigate against links between LGBT status and poorer health. For example, a recent survey of adolescents in 34 Oregon counties (n = 31,852) reported that LGB youths (n = 1413) possessed elevated rates of smoking and drinking, more sexual partners, and other socio-behavioral risk factors when compared to heterosexuals. However, alcohol and sexual risk elevation among LGB youths was reduced or eliminated in counties that possessed a more LGB-supportive "religious climate" (Hatzenbuehler et al. 2012, p. 658). Similarly, in a study of Midwestern LGBT university students (n = 393), affiliation with an LGBT-supportive religious denomination (defined as one that supported same-sex unions) buffered the deleterious effects of perceived discrimination on depression. The investigators argued that "although religion and same-sex sexuality are often seen as incompatible topics, it is important when working with sexual minority clients for clinicians to assess religious affiliation, as it could be either a risk or a protective factor, depending on the religious group's stance toward same-sex sexuality" (Gattis et al. 2014, p. 1589) (see also Fontenot 2013).

In the US and worldwide, however, R/S factors have demonstrated mixed associations with attitudes towards LGBT people. Whitley (2009) meta-analyzed North American studies of R/S and attitudes toward lesbians and gay men. In 61 studies based in the US or Canada, higher scores on the R/S *quest* dimension correlated

with more positive attitudes towards homosexuals, whereas scores on fundamentalism, Christian orthodoxy, and intrinsic religiousness correlated with more negative attitudes. Extrinsic religiosity scores were uncorrelated.

Internationally, at least two studies have used World Values Survey data. Adamczyk and Pitt (2009, p. 340) examined attitudes toward homosexuality in 33 nations across five continents (WVS wave 4, n = 45,824), finding that personal religious beliefs were more strongly related to anti-homosexual attitudes in countries with a strong self-expressive culture, such as the US, in contrast to countries such as Bangladesh that reflect more of a "survival orientation" culture (p. 340). Similar results were found by Jäckle and Wenzelburger (2015) with data on attitudes in 79 countries across 6 continents (WVS waves 4 and 5), who also noted that currently or historically communist countries displayed higher levels of homonegativity, but its correlations with R/S measures were weaker. Consistent with these findings, Regnerus and Salinas (2007) found that religious affiliation was not a strong predictor of AIDS-based discriminatory attitudes in sub-Saharan Africa, but two cross-national European studies have reported that religious affiliation and attendance predicted less approval of homosexuality (Gerhards 2010, 27 countries, n = 27,964; van den Akker et al. 2012, 20 countries, n = 119,975). In a third European study, Doebler (2015b) reported that belief in a spirit/life force predicted lower levels of group-focused homonegativity (not wanting as neighbors) and moralistic homonegativity (viewing it as "never justifiable," p. 7). Higher levels of each type of homonegativity were predicted by belief in "one true religion" (p. 7), and more frequent attendance at religious services, whereas belief in a personal God only predicted more moralistic homonegativity but was unrelated to group-focused homonegativity. Many of these relations were weaker in Eastern than in Western Europe (43 countries, n = 51,551). In the US, religious measures have also been linked to less support for same-sex marriage (Whitehead 2010).

Some empirical work has investigated the psychology of religious attitudes toward LGBT-related issues. Several studies report that some religious conservatives "differentiate their moral condemnation of homosexual behavior from their attitudes toward lesbian and gay individuals" (Herek and McLemore 2013, p. 317) (see also discussion in Hood et al. 2009, pp. 163–168, 413–417). Herek and McLemore (2013) have suggested several different psychological functions that may potentially be served by religiously based attitudes towards LGBT people or behavior, including defense of normative order, social adjustment, and value expression, which from a religious traditionalist perspective should also include "a rational assessment of relevant concerns" (Rosik 2007, p. 142) or "a reaction based on a moral stance and, hence… rational" (O'Donohue and Caselles 1993, p. 192, quoted in Herek and McLemore, p. 316).[15]

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[15] Empirical psychology and some recent legal analyses converge in viewing perceptions of desecration as playing important roles in cultural conflicts over the status of LGBT populations (Trevino et al. 2012; Poirier 2008). Legal scholar Poirier (2008) argues for a "semiotic congestion" (signal congestion) interpretation of traditionalist opposition to same-sex marriage. He suggests that the "claim that same-sex couples should be excluded from marriage is the same kind of claim

5 Gender Identity and Gender Discrimination

Like most other protected characteristics, gender is enormously influential for health. Women in many societies tend to live longer but report more health problems than men (Van de Velde et al. 2010; McDonough and Walters 2001). Women on average also score higher on most R/S dimensions in Christian and post-Christian societies. However, patterns of greater female religiosity are not cross-culturally universal: Hindu men and women often possess similar average R/S levels, while Jewish and Muslim men often score higher than women on R/S dimensions that are active (e.g., service attendance) rather than affective (e.g., personal piety), and Jewish men often average higher scores on affective religiosity as well (Francis and Penny 2014; Sullins 2006).

The various localized patterns of gender difference in activities visible in every premodern society have often been justified or explained in part through religious teachings that sanctified particular gender responsibilities, privileges, qualities, or roles. Every society has also given rise to same-gender social networks that have socialized each gender into its social roles, responsibilities, and privileges. Such same-gender networks might be viewed positively as an important source of gender-based bonding social capital.[16] When local customs involve gendered use of physical spaces, sometimes including sacred spaces in houses of worship, each gender may draw strength and support from its own socialization within such spaces (Mazumdar and Mazumdar 1999, 2001). Yet hierarchies between genders have frequently existed, and also received religious sanction, not only within particular spheres of gendered activity, but also globally, as a general principle of social life – which when enacted yields *gender stratification*.

Present-day efforts to foster improved female or male health have sometimes enlisted spiritual or religious teachings in salutogenic ways to foster healthier framings of how masculinity and/or female identity are to be lived out as everyday realities. For example, Grenfell (2006) describes how religious teachings may be used to reframe female identity to help alleviate eating disorders (see also Spangler 2010; Weinberger-Litman et al. 2016). Similarly, Cutts and King (2016, pp. 78–79)

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as is often made by Native American, indigenous, and other culturally subordinated groups to certain cultural resources – a right to exclude others in order to protect sacred objects, places, and rituals, so as to preserve and perpetuate group identity over time" (pp. 343–344). From the traditionalist perspective, "we could describe marriage as a sacred or culturally-central, intangible symbolic resource, one that is subject to semiotic congestion by improper use" (p. 368). One possible solution to semiotic signal congestion might be to disestablish marriage so that diverse religious groups but not the state could sanction marriage, although others, without addressing the congestion issue, argue for "gains in clarity and efficiency" and a legitimate state interest in continuing to sponsor civil marriage (Macedo 2015, p. 139).

[16] Before the construct of social capital had been formulated, anthropologist Susan Carol Rogers (1975, p. 735) observed that "Female solidarity, expressed in informal women's groups held together by a well-developed interhousehold female communications network, is most often cited as the strongest power base from which women operate in the community. [Several researchers] all describe how women's groups, more heterogeneous and less brittle than those of men, act as a kind of information control, heavily influencing community public opinion and mediating between groups of men."

describe a South African community-based participatory research (CBPR) project aimed at reducing young men's inter-personal violence that explored the question, "How can mobilizing spiritual capacities and religious assets promote safety and peace, particularly through the promotion of positive forms of masculinity?" Along the same lines, an interview study by Macule (2012) suggested that a South African church men's group could be "rich in terms of metaphors and other teachings on masculinities that can be used as assets in health promotion, and in HIV prevention in particular," including fostering masculine self-images as "guardians of public health… peace and justice" (p. 52).

Efforts to replace gender stratification with greater gender equity in civic life have drawn international attention for decades, as reflected in ongoing efforts to implement the 1979 United Nations Convention on the Elimination of Discrimination against Women (Abdul Rahman 2014). US-based efforts to eliminate various types of gender discrimination intensified with the 1960s legislation mandating equal pay for equal work, but have to date achieved only partial success (Crampton and Hodge 1997). Persisting gender-based discrimination and inequity is an ongoing research topic across many academic disciplines, including public health. Of particular concern are health-systems-related findings, such as evidence from many societies, both developed and developing, for gender discrimination in how patients are treated in healthcare systems (Govender and Penn-Kekana 2008).

Like other forms of discrimination, gender discrimination correlates with worse health. A meta-analysis of well-being outcomes that included 23 gender discrimination studies found that its deleterious effects were comparable to experiences of racial discrimination, but smaller than those for several other categories of discrimination (e.g., sexual orientation) (Schmitt et al. 2014). Consistent with generally greater adverse impacts on disadvantaged groups, evidence indicates worse effects on women than on men (Pascoe and Smart Richman 2009, worse impact on health behaviors, k = 6).

Much empirical evidence links religion to attitudes that differentiate between the genders, often in ways that risk, support, or imply stratification. Many years ago, Bridges and Spilka (1992) described several ways that religion has sanctified gender imbalance and stratification, but suggested that strong linkages between religious involvement and better mental health indicates that "religion contributes both to the creation of these difficulties and, in some instances, their alleviation" (p. 43).

More recently, analyses of WVS data have found that respondent religious affiliation, perceived importance of religion, and attendance at worship services were correlated with attitudes characterized as supportive of "gender hierarchies," such as views that "Being a housewife is just as fulfilling as working for pay," and "When jobs are scarce, men should have more right to a job than women" (Seguino 2011, p. 1310, WVS, 97 countries, n > 200,000). An earlier WVS study reported similar findings, but noted that among those who actively attended religious services, effects were strongly attenuated among adherents to traditions that were dominant in their country (Guiso et al. 2003, 66 countries, n = 38,000 to 72,000). A third study used only country-level data, reporting that a higher national proportion of non-religious people (atheist or agnostic) correlated with more gender equity according to indices encompassing reproductive health, education, empowerment, and labor force participation (Schnabel 2015, 147 countries).

Other research has documented that discrepancies may often exist between sanctified formal ideologies and actual behaviors. For example, Gallagher and Smith's (1999, p. 211) interviews of American Evangelical Protestants (n = 265) revealed that a "majority of contemporary evangelicals" held to a combination of symbolic traditionalism with pragmatic egalitarianism. Others have suggested that discrepancies between formal male-dominated ideology and actual practice, still often male-dominated to some degree, may be widespread historically and cross-culturally (Obeng 2014; Rogers 1975; Illich 1982) (see also Gallagher 2003).

More recent studies have documented what Bartkowski and Shah (2014, p. 173) called a "multifaceted and complicated" relationship between religion and gender inequality." Their studies, for example, intended as "exploratory snapshots" (p. 174), reported that male God-imagery, but not female God-imagery, was linked to opposition to mothers' paid labor force participation (used as a measure of gender inequality), but also revealed that "Gender identities are not a given within even the strictest of religious groups. Rather, men and women's identities are quite subject to negotiation in which normative expectations are often balanced against practical considerations and personal predilections" (Bartkowski and Shah 2014, p. 173).

In sum, gender identities link people to evolving conceptions of what it means to be male or female, conceptions that may be influenced not only by biology but by evolving global and local religion and culture. Such gender identities may possess manifest or latent salutogenic features that can be drawn upon by interventions, but may also possess pathogenic features that put people at risk for propagating or being victimized by discrimination. Evidence indicates that different R/S dimensions may be linked to both positive and negative features of gender identities in ways that show some discernable macro-level patterns that are nonetheless changing over time, and should be interpreted in light of regional, local, and individual circumstances.

6   Summary: Social Identity and Discrimination

Several ideas for application to public health practice are provided in Box 1. In summary, reviews of research on R/S, social identity, and discrimination reveal that

- Studies in the US and/or Europe indicate that racial prejudice correlates negatively with some dimensions of religiousness/spirituality, such as intrinsic religiousness, spiritual quest and belief in a spirit/life force or personal God, but correlates positively with other R/S dimensions that include extrinsic religiousness, religious group identification, religious fundamentalism, and belief in one true religion;
- Evidence suggests that religion/spirituality can sometimes buffer (mitigate) racial discrimination's adverse effects on distress, negative affect, depression, and self-rated health;
- Several types of anti-religious discrimination remain a concern or are increasing worldwide, including anti-Jewish prejudice and anti-Muslim prejudice, but anti-religious discrimination is more common among people lower in spirituality or belief in a personal God, and higher among those who are nonreligious or believe

> **Box 1: Ideas for Application to Public Health Practice: Social Identity and Discrimination**
>
> Social identity and discrimination relate to religion/spirituality in ways that can inform the public health professional's efforts to form religious/spiritual partnerships and design public health interventions:
>
> ✓ Be aware and acknowledge the complex relations between R/S and discrimination, with some correlations positive and others negative, leading Allport (1966) to remark that paradoxically. R/S both "makes" and "unmakes" racial prejudice;
>
> ✓ Be aware that R/S traditions may evolve over time in their attitudes toward various protected characteristics and sub-populations, and that differences may exist between official teachings and behaviors of particular communities;
>
> ✓ Support communities or individuals victimized by discrimination to draw upon R/S resources that serve as buffers.
>
> Please see chapters in Part II of this volume for in-depth discussion of the relevance of religion and spirituality to applied public health work. See Part I's first chapter for an overview of major application themes.

in one true religion, and higher in countries with less political stability, lower GDP, and less mutual trust among the population;

- Experiences of discrimination on the basis of religion, including anti-atheist discrimination, have been linked to adverse outcomes that include mental disorders and poorer self-rated health;
- Some religious denominations are ideologically opposed to many sexual minority (LGBT) concerns whereas others are supportive. Similarly, some R/S dimensions such as quest correlate with favorable attitudes toward LGBT populations, whereas other R/S dimensions such as fundamentalism, Christian orthodoxy, and intrinsic religiousness, correlate with more negative attitudes, and such relations appear to be stronger in more affluent countries, where overall attitudes are usually more favorable;
- Empirical evidence suggests that more LGBT-supportive forms of religion may enhance positive LGBT youth health behaviors and buffer against deleterious effects of discrimination on depression;
- R/S dimensions such as perceived importance of religion and attendance at worship services have been found to correlate with attitudes supporting gender stratification, and these associations are stronger in culturally non-dominant traditions, and weaker in nationally dominant traditions.
- Different R/S dimensions may be linked to both positive and negative features of gender identities in ways that have changed over time, and evidence suggests that even in conservative traditions, gender identities may be "subject to negotiation in which normative expectations are often balanced against practical considerations and personal predilections" (Bartkowski and Shah 2014, p. 173).

References

Abdul Rahman, N. A. B. (2014). Convention on the elimination of discrimination against women and the prospect of development of Muslim personal law in Singapore. *Journal of Muslim Minority Affairs, 34*(1), 45–65. https://doi.org/10.1080/13602004.2014.888283.

Abu-Raiya, H. (2013). On the links between religion, mental health and inter-religious conflict: A brief summary of empirical research. *The Israel Journal of Psychiatry and Related Sciences, 50*(2), 130–139.

Acevedo-Polakovich, I. D., Cousineau, J. R., Quirk, K. M., Gerhart, J. I., Bell, K. M., & Adomako, M. S. (2014). Toward an asset orientation in the study of U.S. Latina/o youth: Biculturalism, ethnic identity, and positive youth development. *The Counseling Psychologist, 42*(2), 201–229. https://doi.org/10.1177/0011000013477904.

Adamczyk, A., & Pitt, C. (2009). Shaping attitudes about homosexuality: The role of religion and cultural context. *Social Science Research, 38*(2), 338–351. https://doi.org/10.1016/j.ssresearch.2009.01.002.

Agency for Healthcare Research and Quality. (2007). *National healthcare disparities report*. Rockville: U.S. Department of Health and Human Services.

Allport, G. W. (1966). The religious context of prejudice. *Journal for the Scientific Study of Religion, 5*(3), 447–457. https://doi.org/10.2307/1384172.

Allport, G. W., & Ross, M. J. (1967). Personal religious orientation and prejudice. *Journal of Personality and Social Psychology, 5*(4), 432–443. https://doi.org/10.1037/h0021212.

Alvarado, M., & Ricard, R. J. (2013). Developmental assets and ethnic identity as predictors of thriving in Hipanic adolescents. *Hispanic Journal of Behavioral Sciences, 35*, 510. https://doi.org/10.1177/0739986313499006.

Antonovsky, A. (1996). The salutogenic model as a theory to guide health promotion. *Health Promotion International, 11*(1), 11–18. https://doi.org/10.1093/heapro/11.1.11.

Appel, H. B., Ai, A. L., Huang, B., & Nicdao, E. (2014). Detrimental effects of discrimination on mental health in Asian Americans: Counteracting roles of religious involvement. *The International Journal for the Psychology of Religion, 24*(1), 28–46. https://doi.org/10.1080/10508619.2012.761524.

Bartkowski, J. P., & Shah, S. (2014). Religion and gender inequality: From attitudes to practices. In L. A. Keister & D. E. Sherkat (Eds.), *Religion and inequality in America: Research and theory on religion's role in stratification* (pp. 173–194). New York: Cambridge University Press.

Baumard, N., & Chevallier, C. (2015). The nature and dynamics of world religions: A life-history approach. *Proceedings of the Royal Society B: Biological Sciences, 282*(1818), 20151593. https://doi.org/10.1098/rspb.2015.1593.

Berger, M., & Sarnyai, Z. (2015). "More than skin deep": Stress neurobiology and mental health consequences of racial discrimination. *Stress, 18*(1), 1–10. https://doi.org/10.3109/10253890.2014.989204.

Bevelander, P., & Hjerm, M. (2015). The religious affiliation and anti-Semitism of secondary school-age Swedish youths: An analysis of survey data from 2003 and 2009. *Ethnic and Racial Studies, 38*(15), 2705–2721. https://doi.org/10.1080/01419870.2015.1042893.

Bhopal, R. (2004). Glossary of terms relating to ethnicity and race: For reflection and debate. *Journal of Epidemiology and Community Health, 58*(6), 441–445. https://doi.org/10.1136/jech.2003.013466.

Bierman, A. (2006). Does religion buffer the effects of discrimination on mental health? Differing effects by race. *Journal for the Scientific Study of Religion, 45*(4), 551–565. https://doi.org/10.1111/j.1468-5906.2006.00327.x.

Boehmer, U. (2002). Twenty years of public health research: Inclusion of lesbian, gay, bisexual, and transgender populations. *American Journal of Public Health, 92*(7), 1125–1130. https://doi.org/10.2105/AJPH.92.7.1125.

Bowleg, L. (2012). The problem with the phrase women and minorities: Intersectionality—An important theoretical framework for public health. *American Journal of Public Health, 102*(7), 1267–1273. https://doi.org/10.2105/AJPH.2012.300750.

Branscombe, N. R., Schmitt, M. T., & Harvey, R. D. (1999). Perceiving pervasive discrimination among African Americans: Implications for group identification and well-being. *Journal of Personality and Social Psychology, 77*(1), 135–149. https://doi.org/10.1037/0022-3514.77.1.135.

Braun-Lewensohn, O., & Sagy, S. (2011). Salutogenesis and culture: Personal and community sense of coherence among adolescents belonging to three different cultural groups. *International Review of Psychiatry, 23*(6), 533–541. https://doi.org/10.3109/09540261.2011.637905.

Brega, A. G., & Coleman, L. M. (1999). Effects of religiosity and racial socialization on subjective stigmatization in African-American adolescents. *Journal of Adolescence, 22*(2), 223–242. https://doi.org/10.1006/jado.1999.0213.

Bridges, R. A., & Spilka, B. (1992). Religion and the mental health of women. In*Religion and mental health* (pp. 43–53). New York: Oxford University Press.

Brown-Iannuzzi, J. L., Adair, K. C., Payne, B. K., Richman, L. S., & Fredrickson, B. L. (2014). Discrimination hurts, but mindfulness may help: Trait mindfulness moderates the relationship between perceived discrimination and depressive symptoms. *Personality and Individual Differences, 56*, 201–205. https://doi.org/10.1016/j.paid.2013.09.015.

Chae, D. H., Nuru-Jeter, A. M., & Adler, N. E. (2012). Implicit racial bias as a moderator of the association between racial discrimination and hypertension: A study of midlife African American men. *Psychosomatic Medicine, 74*(9), 961–964. https://doi.org/10.1097/PSY.0b013e3182733665.

Chae, D. H., Nuru-Jeter, A. M., Adler, N. E., Brody, G. H., Lin, J., Blackburn, E. H., et al. (2014). Discrimination, racial bias, and telomere length in African-American men. *American Journal of Preventive Medicine, 46*(2), 103–111. https://doi.org/10.1016/j.amepre.2013.10.020.

Chakraborty, A., McManus, S., Brugha, T. S., Bebbington, P., & King, M. (2011). Mental health of the non-heterosexual population of England. *The British Journal of Psychiatry, 198*(2), 143–148. https://doi.org/10.1192/bjp.bp.110.082271.

Chen, R. K., Brown, A. D., & Kotbungkair, W. (2015). A comparison of self-acceptance of disability between Thai Buddhists and American Christians. *Journal of Rehabilitation, 81*(1), 52–62.

Cohen, J. E. (2010). Perceptions of anti-Semitism among American Jews, 2000–05: A survey analysis. *Political Psychology, 31*(1), 85–107. https://doi.org/10.1111/j.1467-9221.2009.00746.x.

Cragun, R. T., Kosmin, B., Keysar, A., Hammer, J. H., & Nielsen, M. (2012). On the receiving end: Discrimination toward the non-religious in the United States. *Journal of Contemporary Religion, 27*(1), 105–127. https://doi.org/10.1080/13537903.2012.642741.

Crampton, S. M., & Hodge, J. W. (1997). The equal pay act: The first 30 years. *Public Personnel Management, 26*(3), 335.

Creamer, D. B. (2012). Disability theology. *Religion Compass, 6*(7), 339–346. https://doi.org/10.1111/j.1749-8171.2012.00366.x.

Cutts, T., & King, R. (2016). Community asset mapping: Integrating and engaging community and health systems. In T. F. Cutts & J. R. Cochrane (Eds.), *Stakeholder health: Insights from new systems of health* (pp. 73–95). Winston-Salem: Faithhealth Innovations.

Diener, E., & Clifton, D. (2002). Life satisfaction and religiosity in broad probability samples. *Psychological Inquiry, 13*(3), 206–209.

Doane, M. J., & Elliott, M. (2015). Perceptions of discrimination among atheists: Consequences for atheist identification, psychological and physical well-being. *Psychology of Religion and Spirituality, 7*(2), 130–141. https://doi.org/10.1037/rel0000015.

Doebler, S. (2014). Relationships between religion and intolerance towards Muslims and immigrants in Europe: A multilevel analysis. *Review of Religious Research, 56*(1), 61–86. https://doi.org/10.1007/s13644-013-0126-1.

Doebler, S. (2015a). Love thy neighbor? Relationships between religion and racial intolerance in Europe. *Politics and Religion, 8*(04), 745–771. https://doi.org/10.1017/S1755048315000607.

Doebler, S. (2015b). Relationships between religion and two forms of homonegativity in Europe—A multilevel analysis of effects of believing, belonging and religious practice. *PLoS One, 10*(8), e0133538. https://doi.org/10.1371/journal.pone.0133538.

Doehring, C. (2013). An applied integrative approach to exploring how religion and spirituality contribute to or counteract prejudice and discrimination. In K. I. Pargament, A. Mahoney, & E. P. Shafranske (Eds.), *APA handbook of psychology, religion, and spirituality (Vol 2): An applied psychology of religion and spirituality* (pp. 389–403). Washington, DC: American Psychological Association. https://doi.org/10.1037/14046-020.

Ekici, T., & Yucel, D. (2015). What determines religious and racial prejudice in Europe? The effects of religiosity and trust. *Social Indicators Research, 122*(1), 105–133. https://doi.org/10.1007/s11205-014-0674-y.

Ellison, C. G., Musick, M. A., & Henderson, A. K. (2008). Balm in gilead: Racism, religious involvement, and psychological distress among African-American adults. *Journal for the Scientific Study of Religion, 47*(2), 291–309. https://doi.org/10.1111/j.1468-5906.2008.00408.x.

Every, D., & Perry, R. (2014). The relationship between perceived religious discrimination and self-esteem for Muslim Australians. *Australian Journal of Psychology, 66*(4), 241–248. https://doi.org/10.1111/ajpy.12067.

Ferlander, S. (2007). The importance of different forms of social capital for health. *Acta Sociologica, 50*(2), 115–128. https://doi.org/10.1177/0001699307077654.

Fernandez, A., & Loukas, A. (2014). Acculturation and religious coping as moderators of the association between discrimination and depressive symptoms among Mexican-American vocational students. *Journal of Immigrant and Minority Health, 16*(6), 1290–1293. https://doi.org/10.1007/s10903-013-9952-z.

Finch, B. K., & Vega, W. A. (2003). Acculturation stress, social support, and self-rated health among Latinos in California. *Journal of Immigrant Health, 5*(3), 109–117. https://doi.org/10.1023/A:1023987717921.

Fontenot, E. (2013). Unlikely congregation: Gay and lesbian persons of faith in contemporary U.S. culture. In *APA handbook of psychology, religion, and spirituality (Vol 1): Context, theory, and research, APA handbooks in psychology* (pp. 617–633). Washington, DC: American Psychological Association. https://doi.org/10.1037/14045-034.

Fox, J. (2007). Religious discrimination: A world survey. *Journal of International Affairs, 61*(1), 47–67.

Francis, Pope (2015). *Encyclical on climate change & inequality: On care for our common home*. Brooklyn: Melville House.

Francis, L. J., & Penny, G. (2014). Gender differences in religion. In V. Saroglou (Ed.), *Religion, personality, and social behavior* (pp. 313–337). New York: Psychology Press.

Gallagher, S. K. (2003). *Evangelical identity and gendered family life*. Piscataway: Rutgers University Press.

Gallagher, S. K., & Smith, C. (1999). Symbolic traditionalism and pragmatic egalitarianism: Contemporary evangelicals, families, and gender. *Gender and Society, 13*(2), 211–233.

Gattis, M. N., Woodford, M. R., & Han, Y. (2014). Discrimination and depressive symptoms among sexual minority youth: Is gay-affirming religious affiliation a protective factor? *Archives of Sexual Behavior, 43*(8), 1589–1599. https://doi.org/10.1007/s10508-014-0342-y.

Gerhards, J. (2010). Non-discrimination towards homosexuality: The European Union's policy and citizens' attitudes towards homosexuality in 27 European countries. *International Sociology, 25*(1), 5–28. https://doi.org/10.1177/0268580909346704.

Gervais, W. M., Shariff, A. F., & Norenzayan, A. (2011). Do you believe in atheists? Distrust is central to anti-atheist prejudice. *Journal of Personality and Social Psychology, 101*(6), 1189–1206. https://doi.org/10.1037/a0025882.

Ghumman, S., Ryan, A. M., Barclay, L. A., & Markel, K. S. (2013). Religious discrimination in the workplace: A review and examination of current and future trends. *Journal of Business and Psychology, 28*(4), 439–454. https://doi.org/10.1007/s10869-013-9290-0.

Glanz, K., Maskarinec, G., & Carlin, L. (2005). Ethnicity, sense of coherence, and tobacco use among adolescents. *Annals of Behavioral Medicine, 29*(3), 192–199. https://doi.org/10.1207/s15324796abm2903_5.

Govender, V., & Penn-Kekana, L. (2008). Gender biases and discrimination: A review of health care interpersonal interactions. *Global Public Health, 3*, 90–103. https://doi.org/10.1080/17441690801892208.

Graham, J., Haidt, J., & Nosek, B. A. (2009). Liberals and conservatives rely on different sets of moral foundations. *Journal of Personality and Social Psychology, 96*(5), 1029–1046. https://doi.org/10.1037/a0015141.

Grenfell, J. W. (2006). Religion and eating disorders: Towards understanding a neglected perspective. *Feminist Theology, 14*(3), 367–387. https://doi.org/10.1177/0966735006063775.

Guiso, L., Sapienza, P., & Zingales, L. (2003). People' opium? Religion and economic attitudes. *Journal of Monetary Economics, 50*(1), 225–282. https://doi.org/10.1016/S0304-3932(02)00202-7.

Hagerty, B. M. K., Lynch-Sauer, J., Patusky, K. L., Bouwsema, M., & Collier, P. (1992). Sense of belonging: A vital mental health concept. *Archives of Psychiatric Nursing, 6*(3), 172–177. https://doi.org/10.1016/0883-9417(92)90028-H.

Hall, D. L., Matz, D. C., & Wood, W. (2010). Why don't we practice what we preach? A meta-analytic review of religious racism. *Personality and Social Psychology Review, 14*(1), 126–139. https://doi.org/10.1177/1088868309352179.

Harrell, S. P. (2000). A multidimensional conceptualization of racism-related stress: Implications for the well-being of people of color. *American Journal of Orthopsychiatry, 70*(1), 42–57. https://doi.org/10.1037/h0087722.

Hasnas, J. (2002). Equal opportunity, affirmative action, and the anti-discrimination principle: The philosophical basis for the legal prohibition of discrimination. *Fordham Law Review, 71*, 423–542.

Hatzenbuehler, M. L., Pachankis, J. E., & Wolff, J. (2012). Religious climate and health risk behaviors in sexual minority youths: A population-based study. *American Journal of Public Health, 102*(4), 657–663. https://doi.org/10.2105/AJPH.2011.300517.

Herek, G. M., & Garnets, L. D. (2007). Sexual orientation and mental health. *Annual Review of Clinical Psychology, 3*(1), 353–375. https://doi.org/10.1146/annurev.clinpsy.3.022806.091510.

Herek, G. M., & McLemore, K. A. (2013). Sexual prejudice. *Annual Review of Psychology, 64*, 309–333. https://doi.org/10.1146/annurev-psych-113011-143826.

Hood, R. W., Hill, P. C., & Spilka, B. (2009). *The psychology of religion: An empirical approach* (4th ed.). New York: Guilford.

Horton, K., & Loukas, A. (2013). Discrimination, religious coping, and tobacco use among White, African American, and Mexican American vocational school students. *Journal of Religion and Health, 52*(1), 169–183. https://doi.org/10.1007/s10943-011-9462-z.

Hunsberger, B., & Jackson, L. M. (2005). Religion, meaning, and prejudice. *Journal of Social Issues, 61*(4), 807–826. https://doi.org/10.1111/j.1540-4560.2005.00433.x.

Hunter, N. D. (2001). Accomodating the public sphere: Beyond the market model. *Minnesota Law Review, 85*(6), 1591–1638.

Idler, E. (2014). Religion: The invisible social determinant. In E. L. Idler (Ed.), *Religion as a social determinant of public health* (pp. 1–23). New York: Oxford University Press.

Ikram, U. Z., Snijder, M. B., de Wit, M. A. S., Schene, A. H., Stronks, K., & Kunst, A. E. (2016). Perceived ethnic discrimination and depressive symptoms: The buffering effects of ethnic identity, religion and ethnic social network. *Social Psychiatry and Psychiatric Epidemiology, 51*(5), 679–688. https://doi.org/10.1007/s00127-016-1186-7.

Illich, I. (1982). *Gender*. New York: Pantheon Books.

Institute of Medicine. (2001). *Crossing the quality chasm: A new health system for the 21st century*. Washington, DC: National Academy Press.

Jäckle, S., & Wenzelburger, G. (2015). Religion, religiosity, and the attitudes toward homosexuality—A multilevel analysis of 79 countries. *Journal of Homosexuality, 62*(2), 207–241. https://doi.org/10.1080/00918369.2014.969071.

Johnson, M. K., Rowatt, W. C., Barnard-Brak, L. M., Patock-Peckham, J. A., LaBouff, J. P., & Carlisle, R. D. (2011). A mediational analysis of the role of right-wing authoritarianism and religious fundamentalism in the religiosity–prejudice link. *Personality and Individual Differences, 50*(6), 851–856. https://doi.org/10.1016/j.paid.2011.01.010.

Jones, C. P. (2000). Levels of racism: A theoretic framework and a gardener's tale. *American Journal of Public Health, 90*(8), 1212–1215. https://doi.org/10.2105/AJPH.90.8.1212.

Jones, C. P., Truman, B. I., Elam-Evans, L. D., Jones, C. A., Jones, C. Y., Jiles, R., et al. (2008). Using "socially assigned race" to probe white advantages in health status. *Ethnicity & Disease, 18*, 496–504.

Jordanova, V., Crawford, M. J., McManus, S., Bebbington, P., & Brugha, T. (2015). Religious discrimination and common mental disorders in England: A nationally representative population-based study. *Social Psychiatry and Psychiatric Epidemiology, 50*(11), 1723–1729. https://doi.org/10.1007/s00127-015-1110-6.

Juang, L., & Syed, M. (2008). Ethnic identity and spirituality. In R. M. Lerner, R. W. Roeser, & E. Phelps (Eds.), *Positive youth development and spirituality: From theory to research* (pp. 262–284). West Conshohocken: Templeton Foundation Press.

Kamei, A. (2014). The influence of religion on coping and adaptation of families who have children with disabilities: A comparison of Christianity and Buddhism using the double ABCX model. *Journal of Disability & Religion, 18*(3), 264–280. https://doi.org/10.1080/15228967.2013.840970.

Killingray, M. (2007). The Bible, Slavery and Onesimus. *Anvil, 24*(2), 85–96.

Koenig, H. G., King, D. E., & Carson, V. B. (2012). *Handbook of religion and health* (2nd ed.). Oxford/New York: Oxford University Press.

Koppelman, A. (2015). Gay rights, religious accommodations, and the purposes of antidiscrimination law. *Southern California Law Review, 88*, 619–650.

Krieger, N. (2000). Discrimination and health. In L. F. Berkman & I. Kawachi (Eds.), *Social epidemiology* (pp. 36–75). New York: Oxford University Press.

Krieger, N. (2014). Discrimination and health inequities. In L. F. Berkman, I. Kawachi, & M. M. Glymour (Eds.), *Social epidemiology* (2nd ed., pp. 63–125). New York: Oxford University Press.

Krieger, N., Smith, K., Naishadham, D., Hartman, C., & Barbeau, E. M. (2005). Experiences of discrimination: Validity and reliability of a self-report measure for population health research on racism and health. *Social Science and Medicine, 61*(7), 1576–1596. https://doi.org/10.1016/j.socscimed.

Lerner, R. M., & Benson, P. L. (Eds.). (2003). *Developmental assets and asset-building communities: Implications for research, policy, and practice* (The Search Institute series on developmentally attentive community and society). New York: Kluwer Academic/Plenum Publishers.

Levin, J. S. (1996). How religion influences morbidity and health: Reflections on natural history, salutogenesis and host resistance. *Social Science and Medicine, 43*(5), 849–864. https://doi.org/10.1016/0277-9536(96)00150-5.

Lewis, T. T., Cogburn, C. D., & Williams, D. R. (2015). Self-reported experiences of discrimination and health: Scientific advances, ongoing controversies, and emerging issues. *Annual Review of Clinical Psychology, 11*, 407–440. https://doi.org/10.1146/annurev-clinpsy-032814-112728.

Lindstrom, B., & Eriksson, M. (2006). Contextualizing salutogenesis and Antonovsky in public health development. *Health Promotion International, 21*(3), 238–244. https://doi.org/10.1093/heapro/daI016.

Lippert-Rasmussen, K. (2013). Discrimination. In H. LaFollette (Ed.), *International encyclopedia of ethics* (Vol. 3, pp. 1405–1415). Malden: Wiley- Blackwell. https://doi.org/10.1002/9781444367072.wbiee420.

Macedo, S. (2015). *Just married: Same-sex couples, monogamy & the future of marriage*. Princeton: Princeton University Press.

Macule, S. A. (2012). *Transforming masculinities into an asset for HIV prevention: A case study of how Mabutho's (The UCCSA men's organization) teachings on masculinities can mediate HIV prevention in the UCCSA-Mozambique*. Pietermaritzburg: University of KwaZulu-Natal.

Maes, M., Stevens, G. W. J. M., & Verkuyten, M. (2014). Perceived ethnic discrimination and problem behaviors in Muslim immigrant early adolescents: Moderating effects of ethnic, religious, and national group identification. *The Journal of Early Adolescence, 34*(7), 940–966. https://doi.org/10.1177/0272431613514629.

Mays, V. M., Cochran, S. D., & Barnes, N. W. (2007). Race, race-based discrimination, and health outcomes among African Americans. *Annual Review of Psychology, 58*, 201–225. https://doi.org/10.1146/annurev.psych.57.102904.190212.

Mazumdar, S., & Mazumdar, S. (1999). "Women's significant spaces": Religion, space, and community. *Journal of Environmental Psychology, 19*(2), 159–170. https://doi.org/10.1006/jevp.1999.0117.

Mazumdar, S., & Mazumdar, S. (2001). Rethinking public and private space: Religion and women in Muslim society. *Journal of Architectural & Planning Research, 18*(4), 302–324.

McDonough, P., & Walters, V. (2001). Gender and health: Reassessing patterns and explanations. *Social Science and Medicine, 52*(4), 547–559. https://doi.org/10.1016/S0277-9536(00)00159-3.

Melé, D. (2011). Catholic social teaching. In L. Bouckaert & L. Zsolnai (Eds.), *Handbook of spirituality and business* (pp. 118–128). London: Palgrave Macmillan UK.

Meuleman, B., & Billiet, J. (2011). Religious involvement: Its relation to values and social attitudes. In E. Davidov, P. Schmidt, & J. Billiet (Eds.), *Cross-cultural analysis: Methods and applications* (European Association for Methodology Series, pp. 173–206). New York: Routledge/Taylor & Francis Group.

Meyer, I. H. (2013). Prejudice, social stress, and mental health in lesbian, gay, and bisexual populations: Conceptual issues and research evidence. *Psychology of Sexual Orientation and Gender Diversity, 1*(S), 3–26. https://doi.org/10.1037/2329-0382.1.S.3.

Miles, M. (2002). Some influences of religions on attitudes towards disabilities and people with disabilities. *Journal of Religion, Disability & Health, 6*(2–3), 117–129. https://doi.org/10.1300/J095v06n02_12.

Moreau, S. (2010). What is discrimination? *Philosophy & Public Affairs, 38*(2), 143–179. https://doi.org/10.1111/j.1088-4963.2010.01181.x.

Morgan, A., Davies, M., & Ziglio, E. (Eds.). (2010). *Health assets in a global context: Theory, methods, action*. New York: Springer.

Neblett, E. W., Rivas-Drake, D., & Umaña-Taylor, A. J. (2012). The promise of racial and ethnic protective factors in promoting ethnic minority youth development. *Child Development Perspectives, 6*(3), 295–303. https://doi.org/10.1111/j.1750-8606.2012.00239.x.

O'Donohue, W., & Caselles, C. E. (1993). Homophobia: Conceptual, definitional, and value issues. *Journal of Psychopathology and Behavioral Assessment, 15*(3), 177–195. https://doi.org/10.1007/BF01371377.

Obeng, J. P. (2014). *Rural women's power in South Asia: Understanding shakti*. New York: Palgrave Macmillan.

Pagano, L. A., Jr. (2015). *Development and validation of the Scale of Atheist Microaggressions (SAM)* (Unpublished doctoral dissertation). Grand Forks: University of North Dakota.

Paradies, Y., Ben, J., Denson, N., Elias, A., Priest, N., Pieterse, A., et al. (2015). Racism as a determinant of health: A systematic review and meta-analysis. *PLoS One, 10*(9), e0138511. https://doi.org/10.1371/journal.pone.0138511.

Pargament, K. I. (1997). *The psychology of religion and coping: Theory, research, practice*. New York: Guilford.

Pascoe, E. A., & Smart Richman, L. (2009). Perceived discrimination and health: A meta-analytic review. *Psychological Bulletin, 135*(4), 531–554. https://doi.org/10.1037/a0016059.

Pearson, M. (2016). Religious discrimination and the 'hierarchy of rights'. *International Journal of Discrimination and the Law, 16*(1), 37–50. https://doi.org/10.1177/1358229115627518.

Poirier, M. R. (2008). The cultural property claim within the same-sex marriage controversy. *Columbia Journal of Gender and Law, 17*(3), 343–418.

Portes, A. (1998). Social capital: Its origins and applications in modern sociology. Annual Review of Sociology, 24(1), 1–24. https://doi.org/10.1146/annurev.soc.24.1.1.

Priest, N., Paradies, Y., Trenerry, B., Truong, M., Karlsen, S., & Kelly, Y. (2013). A systematic review of studies examining the relationship between reported racism and health and wellbeing for children and young people. *Social Science and Medicine, 95*, 115–127. https://doi.org/10.1016/j.socscimed.2012.11.031.

Quach, T., Nuru-Jeter, A., Morris, P., Allen, L., Shema, S. J., Winters, J. K., et al. (2012). Experiences and perceptions of medical discrimination among a multiethnic sample of breast cancer patients in the Greater San Francisco Bay Area, California. *American Journal of Public Health, 102*(5), 1027–1034. https://doi.org/10.2105/AJPH.2011.300554.

Regnerus, M. D., & Salinas, V. (2007). Religious affiliation and Aids-based discrimination in Sub-Saharan Africa. *Review of Religious Research, 48*(4), 385–400.

Riedel, J., Wiesmann, U., & Hannich, H.-J. (2011). An integrative theoretical framework of acculturation and salutogenesis. *International Review of Psychiatry, 23*(6), 555–564. https://doi.org/10.3109/09540261.2011.637912.

Rippy, A. E., & Newman, E. (2006). Perceived religious discrimination and its relationship to anxiety and paranoia among Muslim Americans. *Journal of Muslim Mental Health, 1*(1), 5–20. https://doi.org/10.1080/15564900600654351.

Rogers, S. C. (1975). Female forms of power and the myth of male dominance: A model of female/male interaction in peasant society. *American Ethnologist, 2*(4), 727–756. https://doi.org/10.1525/ae.1975.2.4.02a00090.

Rosenkrantz, D. E., Rostosky, S. S., Riggle, E. D. B., & Cook, J. R. (2016). The positive aspects of intersecting religious/spiritual and LGBTQ identities. *Spirituality in Clinical Practice, 3*(2), 127–138. https://doi.org/10.1037/scp0000095.

Rosik, C. H. (2007). Ideological concerns in the operationalization of homophobia, part I: An analysis of Herek's ATLG-R scale. *Journal of Psychology and Theology, 35*(2), 132–144.

Rycenga, J. (2009). Re-thinking marriage: Religious authority and religious imagination in arguments for same-sex marriage. *Religious Studies Review, 35*(1), 1–11. https://doi.org/10.1111/j.1748-0922.2009.01310.x.

Samari, G. (2016). Islamophobia and public health in the United States. *American Journal of Public Health, 106*(11), 1920–1925. https://doi.org/10.2105/AJPH.2016.303374.

Scheepers, P., Gijsberts, M., Xe, R., & Hello, E. (2002). Religiosity and prejudice against ethnic minorities in Europe: Cross-national tests on a controversial relationship. *Review of Religious Research, 43*(3), 242–265. https://doi.org/10.2307/3512331.

Schmitt, M. T., Branscombe, N. R., Postmes, T., & Garcia, A. (2014). The consequences of perceived discrimination for psychological well-being: A meta-analytic review. *Psychological Bulletin, 140*(4), 921–948. https://doi.org/10.1037/a0035754.

Schnabel, L. (2015). Religion and gender equality worldwide: A country-level analysis. *Social Indicators Research, 129*(2), 893–907. https://doi.org/10.1007/s11205-015-1147-7.

Schneider, M.-J. (2011). *Introduction to public health* (3rd ed.). Sudbury: Jones and Bartlett.

Seguino, S. (2011). Help or hindrance? Religion's impact on gender inequality in attitudes and outcomes. *World Development, 39*(8), 1308–1321. https://doi.org/10.1016/j.worlddev.2010.12.004.

Siker, J. S. (Ed.). (2007). *Homosexuality and religion: An encyclopedia*. Westport: Greenwood.

Smedley, B. D., Stith, A. Y., & Nelson, A. R. (Eds.). (2003). *Unequal treatment: Confronting racial and ethnic disparities in health care*. Washington, DC: National Academies Press.

Spangler, D. L. (2010). Heavenly bodies: Religious issues in cognitive behavioral treatment of eating disorders. *Cognitive and Behavioral Practice, 17*(4), 358–370. https://doi.org/10.1016/j.cbpra.2009.05.004.

Spears, R. (2011). Group identities: The social identity perspective. In S. J. Schwartz, K. Luyckx, & V. L. Vignoles (Eds.), *Handbook of identity theory and research* (pp. 201–224). New York: Springer New York.

Strabac, Z., & Listhaug, O. (2008). Anti-Muslim prejudice in Europe: A multilevel analysis of survey data from 30 countries. *Social Science Research, 37*(1), 268–286. https://doi.org/10.1016/j.ssresearch.2007.02.004.

Sullins, D. P. (2006). Gender and religion: Deconstructing universality, constructing complexity. *American Journal of Sociology, 112*(3), 838–880. https://doi.org/10.1086/507852.

Tajfel, H., & Turner, J. C. (2004). The social identity theory of intergroup behavior. In J. T. Jost & J. Sidanius (Eds.), *Political psychology: Key readings* (pp. 276–293). New York: Psychology Press.

Taylor, T. R., Kamarck, T. W., & Shiffman, S. (2004). Validation of the Detroit area study discrimination scale in a community sample of older African American adults: The Pittsburgh healthy heart project. *International Journal of Behavioral Medicine, 11*(2), 88–94. https://doi.org/10.1207/s15327558ijbm1102_4.

Trevino, K. M., Desai, K., Lauricella, S., Pargament, K. I., & Mahoney, A. (2012). Perceptions of lesbian and gay (LG) individuals as desecrators of Christianity as predictors of anti-LG attitudes. *Journal of Homosexuality, 59*(4), 535–563. https://doi.org/10.1080/00918369.2012.665672.

Van de Velde, S., Bracke, P., & Levecque, K. (2010). Gender differences in depression in 23 European countries. Cross-national variation in the gender gap in depression. *Social Science and Medicine, 71*(2), 305–313. https://doi.org/10.1016/j.socscimed.2010.03.035.

van den Akker, H., van der Ploeg, R., & Scheepers, P. (2012). Disapproval of homosexuality: Comparative research on individual and national determinants of disapproval of homosexuality in 20 European countries. *International Journal of Public Opinion Research, 25*, 64. https://doi.org/10.1093/ijpor/edr058.

van der Straten Waillet, N., & Roskam, I. (2012). Religious discrimination in childhood and adolescence. *Archiv für Religionspsychologie/Archive for the Psychology of Religions, 34*(2), 215–242. https://doi.org/10.1163/15736121-12341240.

Weber, S. R., Pargament, K. I., Kunik, M. E., Lomax, J. W., II, & Stanley, M. A. (2012). Psychological distress among religious nonbelievers: A systematic review. *Journal of Religion and Health, 51*(1), 72–86. https://doi.org/10.1007/s10943-011-9541-1.

Weinberger-Litman, S. L., Rabin, L. A., Fogel, J., Mensinger, J. L., & Litman, L. (2016). Psychosocial mediators of the relationship between religious orientation and eating disorder risk factors in young Jewish women. *Psychology of Religion and Spirituality, 8*(4), 265–276. https://doi.org/10.1037/a0040293.

Whitehead, A. L. (2010). Sacred rites and civil rights: Religion's effect on attitudes toward same-sex unions and the perceived cause of homosexuality*. *Social Science Quarterly, 91*(1), 63–79. https://doi.org/10.1111/j.1540-6237.2010.00681.x.

Whitley, B. E., Jr. (2009). Religiosity and attitudes toward lesbians and gay men: A meta-analysis. *The International Journal for the Psychology of Religion, 19*(1), 21–38. https://doi.org/10.1080/10508610802471104.

Williams, D. R. (1997). Race and health: Basic questions, emerging directions. *Annals of Epidemiology, 7*(5), 322–333. https://doi.org/10.1016/S1047-2797(97)00051-3.

Williams, D. R., & Mohammed, S. A. (2009). Discrimination and racial disparities in health: Evidence and needed research. *Journal of Behavioral Medicine, 32*(1), 20–47. https://doi.org/10.1007/s10865-008-9185-0.

Williams, D. R., & Mohammed, S. A. (2013). Racism and health I: Pathways and scientific evidence. *American Behavioral Scientist, 57*(8), 1152–1173. https://doi.org/10.1177/0002764213487340.

Environmental Health Sciences, Religion, and Spirituality

Doug Oman and Rachel Morello-Frosch

Abstract This chapter reviews theories and empirical evidence on relations between religion and spirituality (R/S) and environmental health, a public health subfield and field of concentration that draws slightly less than one-tenth of public health students nationwide.

Religion and spirituality are conceived as evolving over time and existing on individual, community, and global levels. R/S factors at each level may influence how health is affected by environmental factors, and R/S influences may be either favorable or unfavorable, with neither clearly predominant. Some evidence suggests that living in religious neighborhoods may prolong life, and that novel research methods may be required to understand risks posed by usage of toxins in minority or stigmatized religions. Many religious organizations are potential collaborators for maintaining healthy environments. However, attitudes toward protecting the environment vary between religious traditions and groups in complex ways that may evolve over time. Theory and data suggest that individual and community-level R/S factors may often beneficially and sometimes adversely affect the per capita environmental burden imposed by a society's consumption, although few studies have directly explored these processes. R/S perspectives on how to stabilize population growth may be shaped by whether or not the issue is considered in the context of consumption and environmental degradation.

This chapter is one of thirteen reviews in this volume providing a public health perspective on the empirical evidence relating R/S to physical and mental health.

Keywords Religion · Spirituality · Public health · Environmental health · Environmental attitudes · Neighborhoods · Environmental sustainability · Population growth · Global environment · Climate change

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Environmental health is a subfield of public health that studies how population and individual health is affected by the physical environment. In the twentieth century, major environmental health concerns have included ensuring clean air and water, and controlling toxic hazards such as lead-based paint. Modern public health is also concerned with issues such as whether a neighborhood physical environment encourages or discourages physical exercise, nutritional eating, or other salutary behaviors. Slightly less than one-tenth of public health students are enrolled in programs related to environmental sciences (see Table 1, chapter "Reviewing Religion/Spirituality Evidence from a Public Health Perspective: Introduction," this volume).

The relevance of religious and spiritual (R/S) factors to environmental health can best be conceptualized through a multi-level model that recognizes both community-level and individual-level factors. Such a model is presented in Fig. 1 in the chapter entitled "Social and Commity-Level Factors in Health Effects from Religion/Spirituality" (this volume). In this multi-level conception, the community environment includes not only the physical and biological environment, but also the human sociocultural environment, which influences and is in turn influenced by the constraints and resources of the physical and biological environments.

Community-level factors strongly influence each individual. Thus, for example, patterns of individual health behavior, such as habitual exercise routines or making wise consumer choices, are often strongly influenced by constraints and opportunities in the physical and social environment. Examples are that dietary choices are heavily influenced by whether people have access to healthy and affordable foods in their neighborhoods, and levels of physical exercise for many people are shaped by neighborhood safety and whether the built environment encourages walking or other physically activities. Yet individuals are not totally passive. For example, even as they are influenced by the community environmental, individual health behaviors may serve to either buffer or exacerbate the impact of environmental risk factors. Determined people may seek exercise opportunities or healthy food from hidden or distant sources, or may band together to improve their community social, economic, or physical environments.

Theory therefore suggests that R/S factors, like other cultural factors, may operate on either individual or community levels to affect health (as illustrated in the figure cited earlier). On the individual level, R/S factors may potentially either support or impede healthy individual behaviors in relation to the environment, as argued in our generic individual model (see chapter "Model of Individual Health Effects: Supporting Evidence," this volume). On the community level, through religious organizations, spiritual leaders, or worldviews and ideologies, R/S factors may play a role in guiding, mobilizing or impeding community-level practices and responses to environmental health hazards such as toxins. Finally, on a global scale, R/S traditions may shape communities' and societies' attitudes and actions with regard to global environmental issues, such as climate change, which may have enormous public health implications (Schneider 2011).

Evidence suggests that at each of these levels – individual, community, and global – R/S factors may show mixed associations, sometimes supporting

environmental health, and sometimes undermining it. In the past, these Janus-like patterns have seldom been described or studied in the public health literature, although the capacity to make positive impacts is clearly relevant to public health. Therefore, in order to provide scholarly grounding, in addition to citing literature of public health and other health professions, this chapter at times will draw upon the literature of religious studies.

On the positive side at the individual level, R/S factors may provide added motivation for engaging in healthy behaviors, and R/S organizations may disseminate health information to members, generating favorable R/S-health individual associations. On the positive side at the community level, R/S organizations may advocate for clean and healthy environments – for example, the Ecumenical Task Force of the Niagara Frontier offered the first social justice based arguments for government intervention in the 1978 Love Canal toxic waste disaster (Hay 2009; see also Swartz 2005). Similarly, efforts by the United Church of Christ and by church-based organizers with roots in the civil rights movement helped catalyze the modern environmental justice movement (Lee 2002). And on a global level, R/S traditions and organizations may espouse and enact pro-environmental teachings, such as an ethic of environmental *stewardship* – the view that humans must protect the natural creation on behalf of God as trustees or stewards – or the view that nature should be protected because it is *sacred* ("sanctification of nature"), either because it was created by God, or because it is permeated by a divine presence or by divine/sacred forces (see, for example, Francis 2015).

But negative effects at each level may also potentially arise from R/S. For example, R/S traditions may regard as sacred certain specific practices that pose material health risks. For example, some traditional rituals use inherently hazardous chemicals (e.g., mercury), and others employ substances that have in recent times suffered from contamination in their production processes (e.g., lead contamination). At the community level, R/S organizations may thwart environmental health protection efforts due to misguided political allegiances or other problems. Finally, on the global level, R/S traditions could propagate ideologies and worldviews that undermine or systematically deprioritize environmental protection.

In fact, the hypothesis of a global negative influence from Christianity was famously claimed by historian Lynn White (1967), who asserted that Christianity should be held responsible for the world environmental crisis because it propagated an ethos of human dominion over nature – an ethos of control that, in part, allowed the growth of today's exploitative technologies. White's thesis provoked a great deal of debate and scholarship across numerous academic fields ranging from environmental ethics and religious studies to sociology (Taylor et al. 2016). White also argued that some non-Western traditions as well as some facets of Christianity were pro-environmental (he proposed Saint Francis of Assisi as a patron saint of ecology). While no consensus has been reached, much research has now explored linkages between environmental attitudes and various R/S traditions, finding evidence for both positive and negative linkages.

R/S factors may therefore shape health effects from the environment either favorably or adversely at all levels from the individual to the globe. Unfortunately,

comprehensive overviews of the significance of R/S factors at multiple levels appear nonexistent in environmental health scholarship, although R/S factors are sometimes acknowledged, often briefly, in overviews at a single level. Swartz (2005) provides one of the better short introductions to religious communities' histories, teachings, and potentials to act for environmental health. He observes that "A number of religious teachings and values can serve as guiding principles…. [and] may do as much as anything else to build public support for necessary environmental health measures" (p. 203). Swartz notes that emphasizing effects on children "has been found to be a compelling lens on the issue of environmental health for religious communities, both within themselves and when they enter into discussions with other groups" (p. 203).More often, R/S factors are listed but not discussed in detail in environmental health overviews. For example, Huynen et al. (2005) acknowledged that as a part of culture, R/S influences the impact of globalization on population health. More broadly, many conceptual models recognize the potential for complex interactions between cultural factors and environmental factors in influencing health (e.g., Tzoulas et al. 2007). This insight has spawned scholarly journals in the field of religious studies, such as *Worldviews: Global Religions, Culture, and Ecology* (ISSN 1363–5247), published since 1997 by Brill.

At present, very few empirical studies have directly examined relationships between R/S factors and environmental health risks, or with diseases primarily attributable to environmental causes. However, several lines of empirical research have confirmed various components of theoretical models that link R/S factors to environmental risks.

Direct Evidence for R/S Relations with Environmental Risks R/S activities may pose health risks through contaminated ceremonial articles, such as lead-contaminated powders used for religious healing or worship ceremonies (Chan et al. 2014; Lin et al. 2010). Further challenges arise when toxins are an *intrinsic* part of R/S activities, as in the case of elemental mercury and Santeria, a Caribbean religion (Riley et al. 2006; Geer et al. 2012). Elemental mercury is employed in some rites in Santeria and also more widely in Caribbean popular culture. Based on participant observation and structured interviews (n = 22), Riley, Newby et al. (2006) reported that "many of the mercury uses that can result in the highest exposures to mercury vapors have previously been attributed to the religious tradition of Santeria, but appear instead to have their roots outside of the religion" (p. 1205; see also Newby et al. 2006). Riley et al. (2006) have derived potentially generalizable methodological recommendations that environmental health research on Santeria or other stigmatized religions may require "infusing ethnographic consideration of culture into comparisons of expert and lay beliefs, collection of behavioral data, and quantitative risk modeling [that together] create behaviorally realistic and culturally aware exposure assessments" (Riley et al. 2006, p. 1207; see additional recommendations in Riley (2014)).

Neighborhood Effects on Health Much evidence suggests that neighborhood characteristics can affect health outcomes independently of corresponding individual measures (e.g., neighborhood SES and mortality, Meijer et al. 2012). Neighborhoods

may enhance health through diverse processes in the cultural environment (e.g., healthier food outlets, lack of crime), social environment (social connections/cohesion), and physical environment (cleanliness, unhazardous, opportunities for physical exercise). These processes are inevitably shaped by the behaviors of the people residing in a neighborhood, and highly religious or spiritual neighborhoods may support specific environmental characteristics (e.g., social networks, food outlets catering to residents' R/S practices). A few scattered studies have looked at what role R/S factors may play in understanding the observed effects of neighborhoods on health. One Israeli study reported that neighborhood-level mortality rates were significantly and favorably related to neighborhood-level religiousness, perhaps by promoting "healthy behaviors and attitudes, reduction of stress, and the formation of strong social bonds" (Jaffe et al. 2005, p. 807). A few studies have also reported that individual-level R/S factors buffered the deleterious effects on health from bad neighborhoods. One study reported that use of religious coping by older adults buffered the adverse effects on self-rated health from living in a bad neighborhood (Krause 1998). A second study reported that religiosity buffers the effects of neighborhood disorder on illicit drug use (Jang and Johnson 2001). Evidence also suggests that spirituality may support parenting practices that buffer against health risks in violent neighborhoods (Letiecq 2007). Some investigators have called for research to investigate how nutritional variables are affected by neighborhood-level R/S factors, as well as congregational culture (Tan et al. 2014). (See also chapter "Social and Community-Level Factors in Health Effects from Religion/Spirituality", this volume).

Environmental Attitudes At least since the 1980s, a range of international, national, and localized surveys have examined relations between R/S factors and environmental concerns (Eckberg and Blocker 1989). Such information could help inform the design and cultural tailoring of communication strategies used in environmental public health efforts among diverse spiritual, religious, and culturally mixed populations. While findings are not always consistent, they do suggest that R/S factors, including differences between denominations and traditions, can contribute to predicting attitudes toward environmental protection (see recent review by Hagevi 2014). For example, Tarakeshwar et al. (2001) conducted a denomination-focused study among US-based Presbyterians (n = 2417). They reported that perceptions of the sanctification of nature predicted heightened environmental concern and pro-environmental action, after controlling for demographic variables and theological conservatism. Similarly, recent analyses of responses to the European Social Survey (n = 39,623) indicate that among European countries (n = 22), Catholic and Eastern Orthodox culture is associated with heightened environmental concern, and Protestant culture with reduced environmental concern, independent of demographic factors (Hagevi 2014). Earlier, in the Western Hemisphere, Schultz et al. (2000) examined environmental attitudes of university students (n = 2150) in the US, Canada, and eleven Latin American countries, reporting that biblical literalism was consistently associated with lower measured environmental concern, but not with self-reported pro-environmental action. Some nationally representative US

surveys have also examined environmental attitudes. Sherkat and Ellison (2007) used a nationally representative survey of US adults (n = 908) to test a sophisticated model intended to reconcile a variety of contradictory previous results. They argued that analyses should distinguish between political and non-political (private) forms of environmental action. Among other findings, they reported that religiously derived beliefs in environmental stewardship predicted higher levels of both political and private environmental action, whereas church attendance predicted higher levels only of private environmental action. Beliefs in biblical literalism predicted lower levels of political environmental action, but had little total or direct effect on private environmental action.

A recent study by Peifer et al. (2014) used qualitative interviews (n = 40) to probe how US Evangelical Christians think about climate change. They reported that "stewardship offers an adequate framing that leads toward environmental concern" (p. 392). But respondents tended to "interpret the doomsday scenarios uttered by environmentalists and scientists as fear-based persuasive tactics, and felt theologically compelled to quell that fear" (p. 387), in part because "predicted dates of catastrophic events… offend evangelical belief that no one knows the hour of Christ's return" (p. 388). Thus, "ironically… finding less dramatic ways to talk about climate change might lead to more dramatic involvement among Evangelicals" (p. 393 – see also Swartz 2005, p. 198, for the Evangelical Environmental Network's "What Would Jesus Drive?" campaign).

R/S-environmentalism relations have also been studied outside of the West. In one of the few studies of non-Western populations, Ramasamy et al. (2010) reported that religiousness was associated with higher belief in the importance of corporate social responsibility (including environmental responsibility), after adjusting for demographics, among consumers in both Hong Kong (n = 92) and Singapore (n = 71). In six Islamic countries (n = 5529), Mostafa (2016) found that more frequent attendance at religious services and greater belief in the importance of God each significantly predicted greater concern about global climate change, after adjusting for political attitudes, post-materialist values, internal locus of control, national CO_2 emissions, and per capita GDP. He noted that "Islamic teachings contrast sharply with the Western view of humans domineering over nature" (p. 3). Some studies have also distinguished between spirituality and religiousness, reporting that spirituality was the better predictor of pro-environmental attitudes and behaviors in US samples (Garfield et al. 2014).

Much additional information is available on R/S factors in edited volumes on religion and ecology (e.g., Gottlieb 2006), and in works that examine evolving attitudes among key religious groups, such as US Evangelical Christians (Wilkinson 2012). Some years ago, two special journal issues reviewed ecological resources and environmental attitudes in the tenets of major traditions (Vaillancourt and Cousineau 1997; Tucker and Grim 2001). Several publications by Hitzhusen (2006, 2007, 2012) have also suggested R/S resources for environmental education.

Population and Consumption Sustainability The earth has a finite carrying capacity, so at some point the size of the human population must cease growing.

How close we are to collectively reaching the planetary carrying capacity depends a great deal upon planetary per-capita waste generation and consumption of limited resources – that is, the size of average human being's total ecological "footprint." Short-term efforts to transition to a sustainable planet – for example, by reducing global climate change – can benefit enormously from cultural and/or technological changes that reduce per-capita consumption and waste.

Religion and spirituality may potentially affect the average per capita environmental footprint in a variety of ways. At the community level, R/S organizations could in myriad ways either facilitate or impede the infrastructure enabling individuals to lead low-impact lifestyles with regard to diet, transportation, recreation, or various other necessities. R/S factors across both community and individual levels may act in concert to affect the prestige accorded to high-consumption versus low-consumption lifestyles, and individual R/S factors may affect motivation to engage in low-impact or "green" purchasing.

In view of the centrality for religion of encouraging spiritual values, and wide cross-cultural recognition of the distinction and sometimes opposition between spiritual and material goals, one might anticipate that religious and spiritual factors would correlate with lifestyles that are less focused on material goals and impose smaller environmental burdens (Grouzet et al. 2005; Pargament et al. 2013). Some evidence supports such a proposition (e.g., Minton et al. 2016). But spiritual and material goals are not always contradictory, and R/S traditions have differed in how they understand their inter-relation, as noted a century ago by sociologist Max Weber (1992). Such considerations suggest that R/S traditions may differ in how they influence per capita consumption and its environmental impact.

Little if any empirical study has focused directly on relations between R/S factors and per capita environmental burden. However, some suggestive findings do exist. One large cross-national European study found that, contrary to other groups, "religious individuals in religious cultures reported better psychological adjustment when their income was low than high" (Gebauer et al. 2013, p. 565, eleven European countries, n = 187,957).

Whereas avoiding consumption by choice or due to low income may impose the smallest per capita environmental footprint, other studies have examined so-called *sustainable consumerism*. One binational US/Korean study found that in each country, greater religiousness on the part of either Buddhists or Christians predicted greater adherence to sustainable consumerist practices such as purchasing green cleaning supplies, recycling, and purchasing organic foods, even after controlling for other demographics (Minton 2015, n = 43 Buddhists in US, 39 in Korea, n = 73 Christians in US, 91 in Korea). Similarly, studies in Mexico have found that intrinsic religious orientation correlated favorably with green product purchases (Felix and Braunsberger 2016, n = 242). And analyses of data from the 2010 US nationally representative General Social Survey (n = 2044) revealed that a six-item R/S scale significantly and favorably predicted scales of both sustainable attitudes (4 items) and sustainable behaviors (9 items), after controlling for religious denomination, age, gender, education, income, and geographic region. However, the highest sus-

tainability scores in the GSS data were among respondents self-identifying as non-religious, and some other US-based studies have reported either null or negative R/S-sustainable consumption relations (e.g., Martin and Bateman 2014, n = 418). Leary et al. (2016) reported the dual finding that several measures of ecologically sustainable consumer practices in a national sample (n = 1101) were predicted by less religious belief in dominion, the view that "God placed humanity here to rule over nature," and by greater belief in religious stewardship, the view that "God placed humanity here to care for his creation" (p. 458).

Yet consumption can never be reduced to zero, and the earth's population must one day cease growing, at which time each human adult must, on average, be a parent of no more than about two children. Therefore, on average, human adults must refrain from exercising the full scope of their capacity for biological reproduction – which must therefore be somehow managed and restrained within each individual's family or other immediate living situation. R/S traditions have had diverging attitudes towards the use of artificial methods of birth control, which are a common method used to prevent births within individual families. To the extent that some of these approaches are arguably more helpful for controlling population growth, and some less helpful, R/S traditions arguably exert a combination of positive and negative influences on efforts to attain global population sustainability. Some scholarship has systematically examined the attitudes of different R/S traditions – for example, Coward (1995, p. 14) reports that whereas most religions "in their traditional formulations have been solidly pro-natal," but that somewhat different approaches have been taken within Aboriginal traditions and Buddhism. Most controversial in contemporary public discourse are religious views of abortion, which do vary between traditions, and also within traditions, perhaps more than is commonly supposed (see reviews in Maguire 2001; or the sometimes divergent summaries in Richards and Bergin 2000, Table 19.2, pp. 473–477).

Importantly, religious traditions are arguably in a state of collective learning and dynamic adjustment to the challenges of population sustainability. For example, Coward (1997) reports that "It is when questions about population growth are removed from the narrow and exhausted debate over birth control or abortion and considered in the context of consumerism and environmental degradation that the traditional sources provide new answers…. that we could not get by asking about the ethics of reproduction, consumption, or our relation to nature separately" (pp. 1172–1173). Coward describes a large multi-faith team of scientists, scholars and theologians in the 1990s that worked on this "three-pronged problematic of population, consumption, and ecology" (p. 1173), reporting that they "could find no religion that addressed this multifaceted problematic. The task called for truly new theology from each religion" (p. 1173). For example, he reports that the group's Muslim scholar found that

> While fertility control is generally forbidden by the Qur'an, and the production of children encouraged, combining the Qur'anic teaching on nature and consumption with reproduction provides a way of suggesting that fertility control may be acceptable if seen as part of self-discipline required from humans to avoid upsetting the divinely created balance of nature. (Coward 1997, p. 1174)

Such considerations suggest that opportunities for cooperation between public health and religious traditions to promote population sustainability should not be prejudged. Public health professionals should be alert to religious diversity and change, and to the corresponding opportunities for collaboration that may emerge.

R/S and Environmental Policy, Justice, and Activism On the level of policy, a recent analysis of voting by the US Congress from 1990 to 2010 examined relations between donations from religious organizations and the likelihood of pro-environmental votes by members of the Senate and House of Representatives. Findings revealed that donations from religious organizations were significantly associated with small and persistent *decreases* in a Representative's propensity to vote in favor of environmental legislation, and with small, positive, and transient *increases* in a Senator's pro-environmental voting (Fields 2012). Furthermore, religious groups have sometimes been active in pro-environment economic noncooperation campaigns. For example, many national churches, as well as the World Council of Churches, an umbrella organization for 345 member churches representing about one-half billion Christians, have chosen to divest from fossil fuel companies (Galbraith 2014; Vaughan 2014). Such divestment campaigns can trigger economically influential stigmatization processes (Ansar et al. 2013).

As noted elsewhere (chapter "Social and Community-Level Factors in Health Effects from Religion/Spirituality," this volume), R/S organizations have been recognized as offering distinctive resources for democratic political organizing (Wood 1994, 2002). Some have offered frameworks integrating R/S motivations into nonviolent civic organizing for environmental health (Oman 2014). In a study of Presbyterian ministers (n = 158), Holland and Carter (2005) reported evidence that "while the ministers overwhelmingly support the ideology of stewardship rather than domination, it is their environmentally friendly actions that have the most significant impact on the congregation" (p. 739).

Interview studies of faith-based environmental activist organizations suggest that many of these organizations emphasize ethical approaches that some argue represent a "new paradigm" when compared to issues-focused environmental activism (Feldman and Moseley 2003, p. 227). For example, 20 leaders of faith-based environmental organizations in the Appalachian region, were interviewed by Feldman and Mosely (2003), who found that the groups emphasized awareness building and education, seeking to "advance environmental reform by promoting a transformation of personal values, attitudes, and conduct in support of an environmental ethic of care" (p. 227), and believe "Christians have a unique responsibility for environmental stewardship that must be founded upon a Biblically based conception of caring for the earth [and a] responsibility to reject attitudes that treat the environment as a mere commodity" (pp. 245–246). Similarly, Smith and Pulver (2009, p. 145) interviewed 42 US faith-based environmental organizations across the country, finding that "the majority of these groups see themselves as engaged in an ethics-based environmentalism grounded in frameworks that tie God to nature and emphasize action, community, and justice."

Sustainable Resource Management Human health depends on maintaining natural environments that are not excessively depleted of the resources needed to support life. Community-based procedures that permit limited and sustainable use of "common-pool resources" such as forests and fisheries have been called community-based resource management (CBRM) (Cox et al. 2014, p. 46). A considerable public health literature argues that retaining indigenous forms of land and resource management can foster diverse community health benefits (e.g., Burgess et al. 2005). Recent meta-analytic evidence also indicates that religious/spiritual facets of culture often play key roles in community-based resource management. A meta-analysis of 48 case studies by Cox et al. (2014) investigated the frequency with which each of 16 CBRM governance functions were "implemented as religious practices and through beliefs in the supernatural" (p. 46). Governance function that were implemented by religious means in a majority of cases, included appropriation (e.g., "Rules exist regarding the appropriation of the natural resource and the specific means by which appropriation is constrained," p. 49, 88% of cases), sanctions (81%), social capital (77%), resource boundaries (75%), leadership (67%), and benefits (60%), whereas other governance functions such as collective-choice arrangements (6%) and resource monitoring (4%) were only seldom implemented through religious means. Such findings show that "religion clearly plays an important role in CBRM…. religion can have an important adaptive function…. [with] effects that… are quite manifold." (p. 54).

1   Summary: Environmental Health

Several ideas for application to public health practice are provided in Box 1. Summarizing this chapter, we can say that published literature relevant to R/S and environmental health reveals that

- R/S factors on several different levels, including the individual, the community, and globally, may influence how health is affected by environmental factors;
- R/S influences on environmental health may be either favorable or unfavorable; with neither clearly predominant;
- Individual studies suggest that living in religious neighborhoods may prolong life (e.g., Jaffe et al. 2005), and that novel methods may be required to understand risks posed by usage of toxics in minority/stigmatized religions (Riley 2014);
- Many religious organizations are potential collaborators for maintaining healthy environments (Swartz 2005). However, attitudes toward protecting the environment appear to vary between religious traditions and groups in complex ways that may evolve over time (Hagevi 2014; Coward 1995).
- Theory and data suggest that individual and community-level R/S factors may often beneficially and sometimes adversely affect the per capita environmental burden imposed by a society's consumption, although few studies have directly explored these processes;

- R/S perspectives on how to stabilize population growth may be shaped by whether or not the issue is considered in the context of consumption and environmental degradation (Coward 1997);
- R/S facets of culture often play key roles in community-based resource management (Cox et al. 2014).

Box 1: Ideas for Application to Public Health Practice: Environmantal Health Sciences

Environmental health concepts, theories and evidence can inform public health professionals' partnering and relationship building with religious/spiritual communities:

✓ Be open and aware that R/S groups may vary in their attitudes toward environmental issues and their attitudes may change and evolve over time;
✓ Be aware that R/S communities may respond to advocacy of sustainability values in different ways depending on the context of presentation;
✓ Be aware that some minority/stigmatized religious groups may use toxic substances in unsafe ways and that creative approaches may be needed to understand and effectively address such health risks;
✓ When organizing or supporting campaigns for community environmental protection, be aware and acknowledge that many or most R/S traditions include teachings that warn about the transiency of purely material values and encourage non-material values viewed as sustainable and enduring, and many/most traditions endorse stewardship of nature;
✓ Consider partnering with R/S organizations to work to protect environments.

Please see chapters in Part II of this volume for in-depth discussion of the relevance of religion and spirituality to applied public health work. See Part I's first chapter for an overview of major application themes.

References

Ansar, A., Caldecott, B., & Tilbury, J. (2013). *Stranded assets and the fossil fuel divestment campaign: What does divestment mean for the valuation of fossil fuel assets?* Oxford: University of Oxford, Smith School of Enterprise and the Environment. http://www.smithschool.ox.ac.uk/research/stranded-assets/SAP-divestment-report-final.pdf.

Burgess, C. P., Johnston, F. H., Bowman, D. M. J. S., & Whitehead, P. J. (2005). Healthy country: Healthy people? Exploring the health benefits of indigenous natural resource management. *Australian and New Zealand Journal of Public Health, 29*(2), 117–122. https://doi.org/10.1111/j.1467-842X.2005.tb00060.x.

Chan, C. K., Ching, C. K., Lau, F. L., & Lee, H. K. (2014). Chinese talismans as a source of lead exposure. *Hong Kong Medical Journal, 20*(4), 347–349. https://doi.org/10.12809/hkmj144235.

Coward, H. G. (1995). *Population, consumption, and the environment: Religious and secular responses*. Albany: State University of New York Press.

Coward, H. (1997). Religious responses to the population sustainability problematic: Implications for law. *Environmental Law, 27*(4), 1169–1185.

Cox, M., Villamayor-Tomas, S., & Hartberg, Y. (2014). The role of religion in community-based natural resource management. *World Development, 54*, 46–55. https://doi.org/10.1016/j. worlddev.2013.07.010.

Eckberg, D. L., & Blocker, T. J. (1989). Varieties of religious involvement and environmental concerns: Testing the Lynn White thesis. *Journal for the Scientific Study of Religion, 28*(4), 509–517. https://doi.org/10.2307/1386580.

Feldman, D. L., & Moseley, L. (2003). Faith-based environmental initiatives in Appalachia: Connecting faith, environmental concern and reform. *Worldviews: Global Religions, Culture & Ecology, 7*(3), 227–252. https://doi.org/10.1163/156853503322709128.

Felix, R., & Braunsberger, K. (2016). I believe therefore I care: The relationship between religiosity, environmental attitudes, and green product purchase in Mexico. *International Marketing Review, 33*(1), 137–155. https://doi.org/10.1108/IMR-07-2014-0216.

Fields, F. (2012). *Does religion play a part in U.S. Environmental policymaking? The effect of religiously motivated campaign contributions on congressional environmental voting patterns*. Master's Project Final Report, Duke University.

Francis, Pope (2015). *Encyclical on climate change & inequality: On care for our common home (Introduction by Naomi Oreskes)*. Brooklyn: Melville House.

Galbraith, K. (2014, October 16). Churches go green by shedding fossil fuel holdings. *New York Times*, p. 20 (Finance Section, International edition). https://www.nytimes.com/2014/10/16/business/international/churches-go-green-by-shedding-holdings-of-carbon-emitters.html. Accessed 2 March 2018.

Garfield, A. M., Drwecki, B. B., Moore, C. F., Kortenkamp, K. V., & Gracz, M. D. (2014). The oneness beliefs scale: Connecting spirituality with pro-environmental behavior. *Journal for the Scientific Study of Religion, 53*(2), 356–372. https://doi.org/10.1111/jssr.12108.

Gebauer, J. E., Nehrlich, A. D., Sedikides, C., & Neberich, W. (2013). The psychological benefits of income are contingent on individual-level and culture-level religiosity. *Social Psychological and Personality Science, 4*(5), 569–578. https://doi.org/10.1177/1948550612469819.

Geer, L. A., Persad, M. D., Palmer, C. D., Steuerwald, A. J., Dalloul, M., Abulafia, O., et al. (2012). Assessment of prenatal mercury exposure in a predominately Caribbean immigrant community in Brooklyn, NY. *Journal of Environmental Monitoring, 14*(3), 1035–1043. https://doi.org/10.1039/C2EM10835F.

Gottlieb, R. S. (Ed.). (2006). *The Oxford handbook of religion and ecology*. New York: Oxford University Press.

Grouzet, F. M. E., Kasser, T., Ahuvia, A., Dols, J. M. F., Kim, Y., Lau, S., et al. (2005). The structure of goal contents across 15 cultures. *Journal of Personality and Social Psychology, 89*(5), 800–816. https://doi.org/10.1037/0022-3514.89.5.800.

Hagevi, M. (2014). Religion and the environmental opinion in 22 countries: A comparative study. *International Review of Sociology, 24*(1), 91–109. https://doi.org/10.1080/03906701.2014.894333.

Hay, A. M. (2009). A new earthly vision: Religious community activism in the Love Canal chemical disaster. *Environmental History, 14*(3), 502–527. https://doi.org/10.1093/envhis/14.3.502.

Hitzhusen, G. E. (2006). Religion and environmental education: Building on common ground. *Canadian Journal of Environmental Education, 11*(1), 9–25.

Hitzhusen, G. E. (2007). Judeo-Christian theology and the environment: Moving beyond scepticism to new sources for environmental education in the United States. *Environmental Education Research, 13*(1), 55. https://doi.org/10.1080/13504620601122699.

Hitzhusen, G. E. (2012). Going green and renewing life: Environmental education in faith communities. *New Directions for Adult and Continuing Education, 2012*(133), 35–44. https://doi.org/10.1002/ace.20005.

Holland, L., & Carter, J. S. (2005). Words v. deeds: A comparison of religious belief and environmental action. *Sociological Spectrum, 25*(6), 739–753. https://doi.org/10.1080/02732170500260908.

Huynen, M. M. T. E., Martens, P., & Hilderink, H. B. M. (2005). The health impacts of glo-balisation: A conceptual framework. *Globalization and Health, 1*(1), 1–12. https://doi.org/10.1186/1744-8603-1-14.

Jaffe, D. H., Eisenbach, Z., Neumark, Y. D., & Manor, O. (2005). Does living in a religiously affiliated neighborhood lower mortality? *Annals of Epidemiology, 15*(10), 804–810. https://doi.org/10.1016/j.annepidem.2004.09.014.

Jang, S. J., & Johnson, B. R. (2001). Neighborhood disorder, individual religiosity, and adolescent use of illicit drugs: A test of multilevel hypotheses. *Criminology, 39*(1), 109–144. https://doi.org/10.1111/j.1745-9125.2001.tb00918.x.

Krause, N. (1998). Neighborhood deterioration, religious coping, and changes in health during late life. *The Gerontologist, 38*(6), 653–664. https://doi.org/10.1093/geront/38.6.653.

Leary, R. B., Minton, E. A., & Mittelstaedt, J. D. (2016). Thou shall not? The influence of religion on beliefs of stewardship and dominion, sustainable behaviors, and marketing systems. *Journal of Macromarketing, 36*(4), 457–470. https://doi.org/10.1177/0276146715626219.

Lee, C. (2002). Environmental justice: Building a unified vision of health and the environment. *Environmental Health Perspectives, 110*(Suppl 2), 141–144.

Letiecq, B. L. (2007). African American fathering in violent neighborhoods: What role does spirituality play? *Fathering, 5*(2), 111–116, 118–120, 123–128.

Lin, C. G., Schaider, L. A., Brabander, D. J., & Woolf, A. D. (2010). Pediatric lead exposure from imported Indian spices and cultural powders. *Pediatrics, 125*(4), e828–e835. https://doi.org/10.1542/peds.2009-1396.

Maguire, D. C. (2001). *Sacred choices: The right to contraception and abortion in ten world religions*. Minneapolis: Fortress Press.

Martin, W. C., & Bateman, C. R. (2014). Consumer religious commitment's influence on ecocentric attitudes and behavior. *Journal of Business Research, 67*(2), 5–11. https://doi.org/10.1016/j.jbusres.2013.03.006.

Meijer, M., Röhl, J., Bloomfield, K., & Grittner, U. (2012). Do neighborhoods affect individual mortality? A systematic review and meta-analysis of multilevel studies. *Social Science and Medicine, 74*(8), 1204–1212. https://doi.org/10.1016/j.socscimed.2011.11.034.

Minton, E. A. (2015). Religion and religiosity's influence on sustainable consumption behaviors. In L. R. Kahle & E. Gurel-Atay (Eds.), *Communicating sustainability for the green economy* (pp. 73–87). New York: Routledge.

Minton, E. A., Kahle, L. R., Jiuan, T. S., & Tambyah, S. K. (2016). Addressing criticisms of global religion research: A consumption-based exploration of status and materialism, sustainability, and volunteering behavior. *Journal for the Scientific Study of Religion, 55*(2), 365–383. https://doi.org/10.1111/jssr.12260.

Mostafa, M. M. (2016). Concern for global warming in six Islamic nations: A multilevel Bayesian analysis. *Sustainable Development*, n/a–n/a, https://doi.org/10.1002/sd.1642.

Newby, C. A., Riley, D. M., & Leal-Almeraz, T. O. (2006). Mercury use and exposure among Santeria practitioners: Religious versus folk practice in northern New Jersey, USA. *Ethnicity & Health, 11*(3), 287–306. https://doi.org/10.1080/13557850600565616.

Oman, D. (2014). Building nonviolent self-efficacy to Foster social transformation and health. *Gandhi Marg, 35*(4), 583–617.

Pargament, K. I., Mahoney, A., Exline, J. J., Jones, J. W., & Shafranske, E. P. (2013). Envisioning an integrative paradigm for the psychology of religion and spirituality. In K. I. Pargament, J. J. Exline, & J. W. Jones (Eds*.), APA handbook of psychology, religion, and spirituality (Vol. 1): Context, theory, and research* (pp. 3–19). Washington, DC: American Psychological Association. https://doi.org/10.1037/14045-001.

Peifer, J. L., Ecklund, E. H., & Fullerton, C. (2014). How Evangelicals from two churches in the American Southwest frame their relationship with the environment. *Review of Religious Research, 56*(3), 373–397. https://doi.org/10.1007/s13644-014-0153-6.

Ramasamy, B., Yeung, M. H., & Au, A. M. (2010). Consumer support for corporate social responsibility (CSR): The role of religion and values. *Journal of Business Ethics, 91*(1), 61–72. https://doi.org/10.1007/s10551-010-0568-0.

Richards, P. S., & Bergin, A. E. (2000). *Handbook of psychotherapy and religious diversity*. Washington, DC: American Psychological Association.

Riley, D. (2014). Mental models in warnings message design: A review and two case studies. *Safety Science, 61*(0), 11–20. https://doi.org/10.1016/j.ssci.2013.07.009.

Riley, D. M., Newby, C. A., & Leal-Almeraz, T. O. (2006). Incorporating ethnographic methods in multidisciplinary approaches to risk assessment and communication: Cultural and religious uses of mercury in Latino and Caribbean communities. *Risk Analysis, 26*(5), 1205–1221. https://doi.org/10.1111/j.1539-6924.2006.00809.x.

Schneider, M.-J. (2011). *Introduction to public health* (3rd ed.). Sudbury: Jones and Bartlett.

Schultz, P. W., Zelezny, L., & Dalrymple, N. J. (2000). A multinational perspective on the relation between Judeo-Christian religious beliefs and attitudes of environmental concern. *Environment and Behavior, 32*(4), 576–591. https://doi.org/10.1177/00139160021972676.

Sherkat, D. E., & Ellison, C. G. (2007). Structuring the religion-environment connection: Identifying religious influences on environmental concern and activism. *Journal for the Scientific Study of Religion, 46*(1), 71–85. https://doi.org/10.1111/j.1468-5906.2007.00341.x.

Smith, A., & Pulver, S. (2009). Ethics-based environmentalism in practice: Religious-environmental organizations in the United States. *Worldviews: Global Religions, Culture, and Ecology, 13*(2), 145–179. https://doi.org/10.1163/156853509X438580.

Swartz, D. J. (2005). Religious approaches to environmental health. In H. Frumkin (Ed.), *Environmental health: From global to local* (pp. 197–218). San Francisco: Jossey-Bass.

Tan, M.-M., Chan, C. K. Y., & Reidpath, D. D. (2014). Faith, food and fettle: Is individual and neighborhood religiosity/spirituality associated with a better diet? *Religions, 5*(3), 801–813. https://doi.org/10.3390/rel5030801.

Tarakeshwar, N., Swank, A. B., Pargament, K. I., & Mahoney, A. (2001). The sanctification of nature and theological conservatism: A study of opposing religious correlates of environmentalism. *Review of Religious Research, 42*(4), 387–404.

Taylor, B., Van Wieren, G., & Zaleha, B. D. (2016). Lynn White Jr. and the greening-of-religion hypothesis. *Conservation Biology, 30*(5), 1000–1009. https://doi.org/10.1111/cobi.12735.

Tucker, M. E., & Grim, J. A. (2001). Religion and ecology: Can the climate change? [special issue]. *Daedalus, 130*(4), 1–307.

Tzoulas, K., Korpela, K., Venn, S., Yli-Pelkonen, V., Kaźmierczak, A., Niemela, J., et al. (2007). Promoting ecosystem and human health in urban areas using green infrastructure: A literature review. *Landscape and Urban Planning, 81*(3), 167–178. https://doi.org/10.1016/j.landurbplan.2007.02.001.

Vaillancourt, J.-G., & Cousineau, M. (1997). Introduction [religion and environment special issue]. *Social Compass, 44*(3), 315–320. https://doi.org/10.1177/003776897044003001.

Vaughan, A. (2014, July 11). World Council of Churches pulls fossil fuel investments. *The Guardian*. https://www.theguardian.com/environment/2014/jul/11/world-council-of-churches-pulls-fossil-fuel-investments. Accessed 12 March 2018.

Weber, M. (1992). *The Protestant ethic and the spirit of capitalism*. London/New York: Routledge.

White, L. (1967). The historical roots of our ecologic crisis. *Science, 155*(3767), 1203–1207. https://doi.org/10.1126/science.155.3767.1203.

Wilkinson, K. K. (2012). *Between god and green: How Evangelicals are cultivating a middle ground on climate change*. New York: Oxford University Press.

Wood, R. L. (1994). Faith in action: Religious resources for political success in three congregations. *Sociology of Religion, 55*(4), 397–417. https://doi.org/10.2307/3711979.

Wood, R. L. (2002). *Faith in action: Religion, race, and democratic organizing in America*. Chicago: University of Chicago Press.

Infectious Diseases, Religion, and Spirituality

Doug Oman and Lee W. Riley

Abstract This chapter reviews theories and empirical evidence on relations between religion and spirituality (R/S) and infectious diseases, issues especially relevant to the laboratory-based field of concentration of 2%–3% of public health students nationwide. We discuss six lines of R/S-health evidence pertaining to immune competence, immunization, infection risk behavior, rates of infection, adherence to treatments for infections, and programs for prevention or treatment.

More than two dozen studies link R/S measures to indicators of immune competence including CD-4 cell counts, lymphocyte proliferation, cell-mediated immune response, and susceptibility to infection. Some smaller religious groups resist immunization, but a study in a US nationally representative sample found R/S was linked to more frequent vaccination. Most religious rituals pose few risks of infection, and religiously involved adolescents engage in fewer infectious disease risk behaviors. R/S factors have been linked to lower rates of infection in Western samples. In Africa, religious approaches can be more effective than non-religious, biomedical approaches in reducing risks of HIV infection. R/S factors have shown mixed relations with adherence to treatment for infections, with better adherence linked to greater experience of spiritual transformation and lower rates of fatalistic belief that God is in control of one's health. Programs to prevent or treat infectious diseases are hosted in many R/S organizations, especially congregations.

This chapter is one of thirteen reviews in this volume providing a public health perspective on the empirical evidence relating R/S to physical and mental health.

Keywords Religion · Spirituality · Public health · Health behavior · Immune competence, Immunization · Infection risk · Infection rates · Treatment adherence · Infection prevention

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Infectious diseases are a topic of historical and continuing importance in public health. With advances in hygiene, anti-infectives, and vaccines, such diseases appeared to be largely under control in the mid-twentieth century industrialized world. But late in the twentieth century, the continued importance of controlling infectious diseases was underscored by emerging threats such as HIV/AIDS, drug-resistant forms of tuberculosis and other bacterial and viral diseases, and the continued tendency of pathogens to mutate, as shown by the influenza virus and other common infectious agents (Schneider 2011). Thus, many schools of public health house laboratories for studying infectious diseases. Since the mid-1990s, between 2% and 3% of public health students nationwide have concentrated in infectious diseases or other biomedical or laboratory sciences (see chapter "Reviewing Religion/Spirituality Evidence from a Public Health Perspective: Introduction", this volume, Table 1). Less appreciated and recognized is the growing importance of the impact of infectious diseases on chronic non-communicable diseases. As populations age and develop chronic diseases, infectious diseases become even more common. A great deal of evidence has emerged in recent decades showing that infectious agents function as direct causes of many of the fatal and nonfatal complications that accompany widely prevalent chronic diseases, including diabetes, many forms of cancer, chronic kidney disease, chronic obstructive pulmonary disease (COPD), and Alzheimers's disease.

Much of the everyday work of infectious disease (ID) researchers is pursued in the laboratory and has little direct relationship with religious and spiritual factors. But as part of the larger interdisciplinary endeavor of public health, ID professionals often need to draw upon an understanding of how at-risk populations behave, and might be persuaded to change their behavior. Such behavioral understanding may be needed for most efficiently uncovering how infections are transmitted to people and interpersonally, as well as for designing optimally effective interventions. Thus, R/S factors at the level of the individual are relevant to ID professionals because of their role in affecting health behaviors, either favorably or unfavorably. Individual-level R/S factors may also be relevant as influences upon immune competence and other forms of host resistance, and group-level R/S factors may influence the biosocial environment in which transmission occurs. Thus, ID professionals may encounter influences from R/S factors through all three components of the classic agent-host-environment triad (Levin 1996).

Six lines of previous R/S-health research appear most directly relevant to ID professionals: immune competence, immunization, infection risk behavior, rates of infection, adherence to treatments for infections, and programs for prevention or treatment. Whereas studies of immune competence are seldom linked to particular diseases, research on R/S and infections has focused largely, but not exclusively, on HIV/AIDS.

Immune Competence   While no refereed systematic reviews are available, Koenig et al. (2012) reviewed several lines of evidence suggesting that engagement with R/S will often be linked to improved immune competence. First, they identified

sixteen modifiable risk factors linked to immune functions, noting that "all sixteen tend to be related to R/S in ways that should enhance immune functions [providing] a powerful rationale for hypothesizing that R/S involvement ought to be related to healthier immunity" (p. 408). These sixteen factors –all empirically linked to R/S in multiple studies – include alcohol consumption, illicit drug use, cigarette smoking, poor diet, suffering from sexually transmitted diseases, psychological stress, depression, anxiety, anger/hostility, low social support, pessimism, and the lack of positive psychological variables that include positive emotions, sense of meaning/purpose, sense of coherence, personality traits such as conscientiousness, and the experience of psychological growth following trauma.

Koenig et al. (2012, pp. 408–414, 840–844) also identified 25 studies directly and most often favorably linking R/S factors to various indicators of immune competence, including CD-4 cell counts, NK cell counts, total lymphocytes, lymphocyte proliferation, neutrophil functioning, cell-mediated immune response, interleukin-6, interferon-gamma, and susceptibility to infection. One example of individual study findings is from a four-year prospective study of HIV seropositive people (n = 101) by Ironson et al. (2011). They reported that a negative view of God (as judgmental and punishing) predicted a faster CD4+ cell decline and greater increase in viral load, whereas a positive view of God (as loving and merciful) predicted significantly higher CD4+ cell counts and lower viral load, after controlling for antiretroviral medication for each timepoint, age, gender, ethnicity, education, and baseline CD4 or viral load.

Other studies have reported favorable relations between immune status and meditation, sometimes called a "borderline spiritual construct" because it exists in both spiritual and secular forms (for discussion see chapter entitled "Model of Individual Health Effects: Supporting Evidence", this volume). For example, one study by Davidson et al. (2003) randomly allocated participants to either an 8 week mindfulness meditation intervention (n = 25), or to a wait-list control (n = 16). Those in the intervention group experienced greater rise in immune competence, as measured by antibody titers gathered after influenza vaccinations. A recent meta-analysis supports effects of meditation on immune competence, especially C-reactive protein (d = 0.40, 95%CI = 0.02 to 0.77, Morgan et al. 2014).

Immunization Historically, R/S factors have shown mixed relations with rates of immunization. A small number of recent studies have documented favorable associations between degree of religiosity and rates of immunization. In one of the best-designed of these studies, Benjamins and Brown (2004) prospectively studied a nationally representative sample of older US adults (n = 6055). After controlling for demographics, socioeconomic status, and physical and mental health, respondents who indicated at baseline that religion was very important to them were 75% more likely to obtain flu shots in the next 2 years (OR = 1.75, p < 0.01) than those indicating that religion was not important. Two other studies of degree of R/S and immunization identified by Koenig et al. (2012, pp. 567–569, 912) both used small convenience samples (ns = 283, 170), with one showing a favorable R/S-immunization

relation, and the other yielding null findings. However, it has long been documented that some small religious groups have resisted vaccination programs, sometimes leading to disease outbreaks in these groups (see five studies identified by Koenig et al. 2001). Ten post-2000 R/S-vaccination studies identified by Koenig et al. (2012) have continued to document differences in vaccination rates between religious groups, such as between Christians and Muslims in Nigeria, or between non-Jews and orthodox Jews in the UK, although some of these studies lacked controls for other demographics. Some studies have also documented that within religious denominations, rates can differ between local communities (e.g., between Amish communities – see Koenig et al. 2012). In the US, a national survey indicates that vaccination refusal is comparatively "rare" (e.g., about 7 refusals per 1000 immunized), and that religious reasons for refusal are cited less commonly than having heard negative messages through television, radio, or word of mouth (Fredrickson et al. 2004, p. 435). Thus, while emerging evidence suggests that the overall relation between R/S and immunization may be positive, the strength as well as valence of the relation can be moderated by denominational factors.

Infection Risk Behavior Pellerin and Edmond (2013) reviewed evidence that a variety of traditional R/S rituals, including sharing a communion cup, can transmit infection, finding that "In general, most practices are safe and have been practiced for generations" (p. e948). Such issues have been debated for more than a century in public health and medical journals (Anonymous 1922, 1924).

On the other hand, the relation between R/S and risk behaviors for HIV infection appears to be generally protective. A recent review by Shaw and El-Bassel (2014) identified 77 empirical studies of the association between degree of R/S and HIV risk behaviors, discovering that favorable links between R/S and lower risk were reported by more than two thirds of studies (52/77 or 68%), with null relations reported by more than half of the remainder (13 studies or 17%), unfavorable links to greater risk reported by only 8 studies (10%), and mixed results by only 4 of the 77 studies (5%). Similarly, a review by Burdette et al. (2015) reported that R/S factors – usually affiliation or attendance at worship services – have been linked to generally lower levels of brief sexual "hooking up" among college student acquaintances, the absence or delay of premarital sex among young adults, fewer sexual partners among never-married adults, less marital infidelity, less adult female sexual risk-taking (e.g., sex with intravenous drug users). R/S factors have also been associated with fewer sexual partners and less likelihood of unprotected or risky sexual behaviors In a US nationally representative sample of people with HIV, after adjusting for demographics and other relevant covariates (n = 932, Galvan et al. 2007). Similarly, a recent systematic review suggests that R/S factors show mixed but largely favorable and protective associations in a small number of studies of HIV risk behaviors among men who have sex with men (Lassiter and Parsons 2016).

R/S also appears generally protective against adolescent sexual risk behavior. A systematic review by House et al. (2010) reported that among adolescents, religiosity was protective against (a) ever having had sex, (b) early sexual debut, and (c) frequency of sex (see also the chapters "Model of Individual Health Effects from Religion/Spirituality: Supporting Evidence", and "Maternal/Child Health, Religion, and Spirituality," this volume). Research on this topic has continued, with a recent study, for example, reporting that formal religious practices were associated with lower levels of risk-taking behavior among young transgender women aged 16–25 years (n = 92, OR = 0.29, p < 0.05, Dowshen et al. 2011). In the US, several conservative religious denominations have also campaigned for adolescents to engage in "abstinence pledges" (Regnerus 2007, p. 99). These campaigns have generated a somewhat ambiguous legacy, with pledging associated with a mixed impact on sexual risk behaviors, and no measured difference in rates of infection by sexually transmitted diseases (see further discussion in the chapter "Maternal/Child Health, Religion, and Spirituality", this volume). Similarly, R/S measures have shown mixed associations with US teenage immunization rates against the sexually transmitted human papillomavirus (HPV), although there has been little evidence of such associations elsewhere in the world (see chapter entitled "Public Health Education, Promotion, and Intervention: Relevance of Religion and Spirituality", this volume).

Both favorable and unfavorable R/S influences have also been noted with regard to behaviors during life-threatening epidemics. In the recent epidemic spread of Ebola in West Africa, "change of [religiously sanctioned] funeral practices was imperative to reversing the epidemic and religious leaders (modern and traditional, Muslim and Christian) had to be involved" (Marshall and Smith 2015, p. e25). In such contexts, although religiously sanctioned practices may put people at risk, religious traditions themselves may also offer some teachings that aid needed change. For example, Bah and Aljoudi (2014) describe several helpful Islamic teachings, such as the permissibility of not washing bodies of deceased relatives if washing them would expose washers to harm. Religious communities also often exercised leadership roles in combatting the epidemic, for example, the "Religious Leaders' Ebola Response Task Force that focused on framing and disseminating media messages on prevention and how to respond when cases were suspected" (Marshall 2016, p. 16) (see also chapter on "International and Global Perspectives on Spirituality, Religion, and Public Health", this volume).

Rates of Infection Koenig et al. (2012, pp. 414–416, 844–845) noted a body of evidence on the relation between R/S factors and infection rates, revealing a pattern of favorable linkages between R/S and lower rates of infection. Of 13 identified studies, nine reported that R/S factors were associated with lower rates of infection or lower viral load (and none with higher). Such findings are consistent with the possibility of stronger immune competence, although lower infection rates may have been primarily attributable to behavioral differences (e.g., less sexual activity by adolescents higher in R/S, Ford et al. 2005).

More recently, well-regarded work by Trinitapoli and colleagues (Trinitapoli 2009; Trinitapoli 2011; Trinitapoli and Yeatman 2011; Trinitapoli and Regnerus 2006; Trinitapoli and Weinreb 2012) has synthesized much data to understand HIV and religion in Africa, concluding that "many religious approaches to AIDS… reduce the risk of infection more effectively than anything that non-religious, bio-medical approaches have to offer" (Trinitapoli and Weinreb 2012, p. 210) (see also chapter "International and Global Perspectives on Spirituality, Religion, and Public Health", this volume).

Adherence to Treatment for Infection Some recent studies suggest that several dimensions of R/S may be associated favorably with adherence to treatment regimens for infectious diseases, while other R/S dimensions may be associated unfavorably. Koenig et al. (2012, pp. 569–570, 913–915) identified eight post-2000 studies of degree of R/S and adherence to HIV-related treatments, revealing six favorable associations, one mixed set of associations, and one absence of associations. An example of a favorable finding is Ironson and Kremer's (2009, p. 265) report that an experience of spiritual transformation ("dramatic changes in spiritual beliefs, behaviors, self-view, and attitudes") was associated with better adherence to treatment regimens by HIV patients (n = 147, p < 0.05). Similarly, Park and Nachman (2010) reported that R/S (intrinsic religious belief) was associated with better adherence among adolescent HIV-infected patients (n = 18). In a study in the developing world, Kisenyi et al. (2013) studied HIV patients in Uganda (n = 220), finding that religiosity was strongly associated with adherence to antiretroviral therapies (r = 0.618, p < 0.01). However, on the negative side, Finocchario-Kessler et al. (2011, p. 103) reported that a fatalistic belief that God is in control of one's health was negatively associated with antiretroviral therapy adherence among HIV-infected community clinic patients (n = 204). Consistent with the more favorable patterns, a recent systematic review of US-based HIV studies (k = 33) revealed largely favorable associations, supported by findings from at least a half-dozen separate studies, linking the R/S dimensions of private religious practices, positive R/S coping, and spiritual meaning, with better HIV treatment adherence and/or outcomes (Kendrick 2017, Table 2).

Programs for Prevention or Treatment Many R/S organizations, especially religious congregations, have hosted programs to prevent or treat infectious diseases. A recent systematic review by Williams et al. (2011) uncovered eleven refereed studies of congregational programs to prevent HIV. They reported that most congregational efforts focused primarily on HIV prevention, although a few also provided care and support and/or addressed substance use and mental health issues. Most were developed in partnerships with outside organizations, tailored to target audiences, and used community-based participatory research (CBPR) approaches. Several programs have targeted adolescent HIV prevention (see chapter "Maternal/

Child Health, Religion, and Spirituality", this volume). One of the more successful recent programs, the Your Blessed Health program based in Michigan, has targeted both adults and adolescents, engaging hundreds of religious leaders from at least nine different denominations in delivering HIV-prevention interventions "congruent with [their] doctrine and teachings" (Griffith et al. 2010, p. 213; Tanner et al. 2014). With regard to providing care when prevention has not succeeded, a systematic review by Adedoyin (2013) uncovered seven studies of R/S organizations or congregations that provided supportive care to African Americans living with HIV/AIDS, characterizing the range of approaches. Finally, a systematic review by Sorsdahl et al. (2009) noted multiple interventions for educating traditional healers about STD and HIV medicine.

More generally, R/S has been drawing increased attention as a social force that can guide and shape the overall societal response to infectious diseases in ways that may either help or hinder prevention efforts. In this regard, HIV/AIDS has drawn the most attention. As early as 2004, R/S factors were mentioned in prominent calls for finding common ground in addressing the HIV epidemic (Halperin et al. 2004). In 2011, *Global Public Health* published a special issue on HIV and religious cultures, describing religious responses in societies ranging from Mozambique and Brazil to the United States. In their editors' introduction, Muñoz-Laboy et al. (2011a, p. S129) stated that:

> Sometimes, religious cultures have reproduced values and practices that have seriously impeded more effective approaches to mitigate the epidemic. At other times, religious movements have provided among the most powerful forces for the mobilisation of individuals and communities in response to the social vulnerability, economic exclusion and public health risk associated with HIV. By highlighting these complex and sometimes contradictory social processes, [this issue will] provide new insights not only into the relationship between religion and the HIV epidemic, but between religion and global public health more broadly… helping to open up a crucial new area of global public health research.

The R/S-HIV relationship has also been the focus of publications in the *American Journal of Public Health* (e.g., Muñoz-Laboy et al. 2011b; Wingood et al. 2013). In particular, Muñoz-Laboy et al. (2011b) presented a detailed analysis of how different religious communities have responded to HIV in Brazil. They argued broadly that earlier public health failures to cultivate in-depth understandings has "minimized our ability to effectively draw upon the most positive contributions of religious organizations (and protect against negative contributions) when designing and implementing programs and policies aimed at confronting the epidemic" (p. 6). Part of this religious organizational capacity to contribute positively to the HIV situation in Brazil may be connected to the long tradition of liberation in Brazil (Murray et al. 2011).

Box 1: Ideas for Application to Public Health Practice: Infectious Diseases

Knowledge of the diverse ways that infectious diseases are affected by spiritual practices and religious organizations can vitally inform public health professionals' prevention efforts as well as partnership building with religious/spiritual communities:

✓ Be aware that R/S communities have responded to infectious diseases in diverse ways, not always beneficial (e.g., encouraging refusal of vaccines), and that community responses may change over time;
✓ Support R/S community partners and learn from congregations observed to be more effective in helping members prevent and effectively treat HIV and AIDS;
✓ Consider partnering with R/S communities to improve outreach and prevent or treat the spread of infectious diseases.

Please see chapters in Part II of this volume for in-depth discussion of the relevance of religion and spirituality to applied public health work. See Part I's first chapter for an overview of major application themes.

Summary: Infectious Diseases

Several ideas for application to public health practice are provided in Box 1. In summary, published literature relevant to R/S and infectious diseases suggests that

- Immune competence: R/S has been empirically linked in more than two dozen studies, most often favorably, to numerous indicators of immune competence ranging from CD-4 cell counts and lymphocyte proliferation to cell-mediated immune response and susceptibility to infection (Koenig et al. 2012);
- Immunization: While some smaller religious groups resist immunization, one of the few US nationally representative studies found perceived importance of R/S was associated with higher rates of influenza vaccination, after controlling for demographics and health (Benjamins and Brown 2004);
- Risk behavior: Religious rituals pose few risks of infection, and evidence suggests that religiously involved adolescents engage in comparatively less behavior that puts them at risk of infectious diseases (House et al. 2010);
- Rates of infection: Evidence from several Western studies suggests that R/S factors are associated with lower rates of infection, and evidence from Africa indicates that religious approaches can be more effective than non-religious, biomedical approaches in reducing risks of HIV infection (Koenig et al. 2012; Trinitapoli and Weinreb 2012);

- Adherence: R/S factors have shown mixed relations with adherence to treatment for infections, with better adherence linked to greater experience of spiritual transformation and lower rates of fatalistic belief that God is in control of one's health (Ironson and Kremer 2009; Finocchario-Kessler et al. 2011; Kendrick 2017);
- Programs for prevention or treatment of infectious diseases are hosted in many R/S organizations, especially congregations, and diverse responses to HIV have been shown by religious traditions (Williams et al. 2011) (Muñoz-Laboy et al. 2011b).

References

Adedoyin, C. (2013). A Systematic review of the roles of congregations and faith-based organizations in the care and support of African Americans living with HIV/AIDS in the United States. *Social Work and Christianity, 40*(2), 184–205.

Anonymous. (1922). The common communion cup. *American Journal of Public Health, 14*(3), 949–950.

Anonymous. (1924). The hygiene of the communion cup. *The Lancet, 203*(5242), 371. https://doi.org/10.1016/S0140-6736(01)04996-0.

Bah, S. M., & Aljoudi, A. S. (2014). Taking a religious perspective to contain Ebola. *The Lancet, 384*(9947), 951. https://doi.org/10.1016/s0140-6736(14)61344-1.

Benjamins, M. R., & Brown, C. (2004). Religion and preventative health care utilization among the elderly. *Social Science and Medicine, 58*(1), 109–118. https://doi.org/10.1016/S0277-9536(03)00152-7.

Burdette, A. M., Hill, T. D., & Myers, K. (2015). Understanding religious variations in sexuality and sexual health. In J. DeLamater & R. F. Plante (Eds.), *Handbook of the sociology of sexualities* (pp. 349–370). New York: Springer.

Davidson, R. J., Kabat-Zinn, J., Schumacher, J., Rosenkrantz, M., Muller, D., Santorelli, S. F., et al. (2003). Alterations in brain and immune function produced by mindfulness meditation. *Psychosomatic Medicine, 65*(4), 564–570. https://doi.org/10.1097/01.PSY.0000077505.67574.E3.

Dowshen, N., Forke, C. M., Johnson, A. K., Kuhns, L. M., Rubin, D., & Garofalo, R. (2011). Religiosity as a protective factor against HIV risk among young transgender women. *Journal of Adolescent Health, 48*(4), 410–414. https://doi.org/10.1016/j.jadohealth.2010.07.021.

Finocchario-Kessler, S., Catley, D., Berkley-Patton, J., Gerkovich, M., Williams, K., Banderas, J., et al. (2011). Baseline predictors of ninety percent or higher antiretroviral therapy adherence in a diverse urban sample: The role of patient autonomy and fatalistic religious beliefs. *AIDS Patient Care and STDs, 25*(2), 103–111. https://doi.org/10.1089/apc.2010.0319.

Ford, C. A., Pence, B. W., Miller, W. C., Resnick, M. D., Bearinger, L. H., Pettingell, S., et al. (2005). Predicting adolescents' longitudinal risk for sexually transmitted infection: Results from the National Longitudinal Study of Adolescent Health. *Archives of Pediatrics & Adolescent Medicine, 159*(7), 657–664. https://doi.org/10.1001/archpedi.159.7.657.

Fredrickson, D. D., Davis, T. C., Arnould, C. L., Kennen, E. M., Hurniston, S. G., Cross, J. T., et al. (2004). Childhood immunization refusal: Provider and parent perceptions. *Family Medicine, 36*(6), 431–439.

Galvan, F. H., Collins, R. L., Kanouse, D. E., Pantoja, P., & Golinelli, D. (2007). Religiosity, denominational affiliation, and sexual behaviors among people with HIV in the United States. *Journal of Sex Research, 44*(1), 49–58. https://doi.org/10.1080/00224490709336792.

Griffith, D. M., Pichon, L. C., Campbell, B., & Allen, J. O. (2010). YOUR Blessed Health: A faith-based CBPR approach to addressing HIV/AIDS among African Americans. *AIDS Education and Prevention, 22*(3), 203–217. https://doi.org/10.1521/aeap.2010.22.3.203.

Halperin, D. T., Steiner, M. J., Cassell, M. M., Green, E. C., Hearst, N., Kirby, D., et al. (2004). The time has come for common ground on preventing sexual transmission of HIV. *The Lancet, 364*(9449), 1913–1915. https://doi.org/10.1016/S0140-6736(04)17487-4.

House, L. D., Mueller, T., Reininger, B., Brown, K., & Markham, C. M. (2010). Character as a predictor of reproductive health outcomes for youth: A systematic review. *Journal of Adolescent Health, 46*(3, Suppl), S59–S74. https://doi.org/10.1016/j.jadohealth.2009.11.218.

Ironson, G., & Kremer, H. (2009). Spiritual transformation, psychological well-being, health, and survival in people with HIV. *International Journal of Psychiatry in Medicine, 39*(3), 263–281. https://doi.org/10.2190/PM.39.3.d.

Ironson, G., Stuetzle, R., Ironson, D., Balbin, E., Kremer, H., George, A., et al. (2011). View of God as benevolent and forgiving or punishing and judgmental predicts HIV disease progression. *Journal of Behavioral Medicine, 34*(6), 414–425. https://doi.org/10.1007/s10865-011-9314-z.

Kendrick, H. M. (2017). Are religion and spirituality barriers or facilitators to treatment for HIV: A systematic review of the literature. *AIDS Care, 29*(1), 1–13. https://doi.org/10.1080/09540121.2016.1201196.

Kisenyi, R. N., Muliira, J. K., & Ayebare, E. (2013). Religiosity and adherence to antiretroviral therapy among patients attending a public hospital-based HIV/AIDS clinic in Uganda. *Journal of Religion and Health, 52*(1), 307–317. https://doi.org/10.1007/s10943-011-9473-9.

Koenig, H. G., King, D. E., & Carson, V. B. (2012). *Handbook of religion and health* (2nd ed.). Oxford/New York: Oxford University Press.

Koenig, H. G., McCullough, M. E., & Larson, D. B. (2001). *Handbook of religion and health*. New York: Oxford University Press.

Lassiter, J. M., & Parsons, J. T. (2016). Religion and spirituality's influences on HIV syndemics among MSM: A systematic review and conceptual model. *AIDS and Behavior, 20*(2), 461–472. https://doi.org/10.1007/s10461-015-1173-0.

Levin, J. S. (1996). How religion influences morbidity and health: Reflections on natural history, salutogenesis and host resistance. *Social Science and Medicine, 43*(5), 849–864. https://doi.org/10.1016/0277-9536(96)00150-5.

Marshall, K. (2016). Re*sponding to the Ebola epidemic in West Africa: What role does religion play?* Georgetown University (Ed.). Washington, DC: Berkley Center for Religion, Peace, and World Affairs http://wvi.org/sites/default/files/Berkley%20Center%20Religion%20and%20Ebola%20Case%20Study.pdf

Marshall, K., & Smith, S. (2015). Religion and Ebola: Learning from experience. *The Lancet, 386*(10005), e24–e25. https://doi.org/10.1016/S0140-6736(15)61082-0.

Morgan, N., Irwin, M. R., Chung, M., & Wang, C. (2014). The effects of mind-body therapies on the immune system: Meta-analysis. *PLoS ONE, 9*(7), e100903. https://doi.org/10.1371/journal.pone.0100903.

Muñoz-Laboy, M., Garcia, J., Moon-Howard, J., Wilson, P. A., & Parker, R. (2011a). Religious responses to HIV and AIDS: Understanding the role of religious cultures and institutions in confronting the epidemic. *Global Public Health, 6*(sup2), S127–S131. https://doi.org/10.1080/17441692.2011.602703.

Muñoz-Laboy, M. A., Murray, L., Wittlin, N., Garcia, J., Terto, V., Jr., & Parker, R. G. (2011b). Beyond faith-based organizations: Using comparative institutional ethnography to understand religious responses to HIV and AIDS in Brazil. *American Journal of Public Health, 101*(6), 972–978. https://doi.org/10.2105/AJPH.2010.300081.

Murray, L. R., Garcia, J., Muñoz-Laboy, M., & Parker, R. G. (2011). Strange bedfellows: The Catholic Church and Brazilian National AIDS Program in the response to HIV/AIDS in Brazil. *Social Science and Medicine, 72*(6), 945–952. https://doi.org/10.1016/j.socscimed.2011.01.004.

Park, J., & Nachman, S. (2010). The link between religion and HAART adherence in pediatric HIV patients. *AIDS Care, 22*(5), 556–561. https://doi.org/10.1080/09540120903254013.

Pellerin, J., & Edmond, M. B. (2013). Infections associated with religious rituals. *International Journal of Infectious Diseases, 17*(11), e945–e948. https://doi.org/10.1016/j.ijid.2013.05.001.

Regnerus, M. D. (2007). *Forbidden fruit: Sex and religion in the lives of American teenagers*. New York: Oxford University Press.

Schneider, M.-J. (2011). *Introduction to public health* (3rd ed.). Sudbury: Jones and Bartlett.

Shaw, S. A., & El-Bassel, N. (2014). The influence of religion on sexual HIV risk. *AIDS and Behavior, 18*(8), 1569–1594. https://doi.org/10.1007/s10461-014-0714-2.

Sorsdahl, K., Ipser, J. C., & Stein, D. J. (2009). Interventions for educating traditional healers about STD and HIV medicine. *Cochrane Database of Systematic Reviews, 2009*(4), 1–16. https://doi.org/10.1002/14651858.CD007190.pub2.

Tanner, A. E., Philbin, M. M., & Ma, A. (2014). HIV prevention interventions with adolescents: Innovations and challenges in partnerships across the integrated transitions model. In S. D. Rhodes (Ed.), *Innovation in HIV prevention research and practice through community engagement* (pp. 77–104). New York: Springer.

Trinitapoli, J. (2009). Religious teachings and influences on the ABCs of HIV prevention in Malawi. *Social Science and Medicine, 69*(2), 199–209. https://doi.org/10.1016/j.socscimed.2009.04.018.

Trinitapoli, J. (2011). The AIDS-related activities of religious leaders in Malawi. *Global Public Health: An International Journal for Research, Policy and Practice, 6*(1), 41–55. https://doi.org/10.1080/17441692.2010.486764.

Trinitapoli, J., & Regnerus, M. D. (2006). Religion and HIV risk behaviors among married men: Initial results from a study in rural Sub-Saharan Africa. *Journal for the Scientific Study of Religion, 45*(4), 505–528. https://doi.org/10.1111/j.1468-5906.2006.00325.x.

Trinitapoli, J., & Yeatman, S. (2011). Uncertainty and fertility in a generalized AIDS epidemic. *American Sociological Review, 76*(6), 935–954. https://doi.org/10.1177/0003122411427672.

Trinitapoli, J. A., & Weinreb, A. (2012). *Religion and AIDS in Africa*. Oxford/New York: Oxford University Press.

Williams, M. V., Palar, K., & Derose, K. P. (2011). Congregation-based programs to address HIV/AIDS: Elements of successful implementation. *Journal of Urban Health, 88*(3), 517–532. https://doi.org/10.1007/s11524-010-9526-5.

Wingood, G. M., Robinson, L. R., Braxton, N. D., Er, D. L., Conner, A. C., Renfro, T. L., et al. (2013). Comparative effectiveness of a faith-based HIV intervention for African American women: Importance of enhancing religious social capital. *American Journal of Public Health, 103*(12), 2226–2233. https://doi.org/10.2105/ajph.2013.301386.

Public Health Nutrition, Religion, and Spirituality

Doug Oman

Abstract This chapter reviews theories and empirical evidence on religion and spirituality (R/S) as factors relevant to public health nutrition, the field of concentration of about 3% of public health students nationwide. We discuss R/S-health evidence pertaining to fruit, vegetable, and fat intake, overweight status, eating disorders, and fasting and cholesterol.

Findings indicate that engagement with R/S activities shows generally favorable associations with greater fruit and vegetable intake. R/S has shown a mixture of favorable and unfavorable associations with fat intake and overweight status, and a mix of favorable and curvilinear relations with measures of overall dietary quality. Religious fasting, especially Ramadan fasting by healthy individuals or those with cardiovascular disease, shows generally favorable associations with lower cholesterol and weight status, but these patterns do not generalize to diabetics. R/S shows a complex relation with eating disorders (EDs), with some R/S dimensions, such as secure divine attachment, showing favorable associations with lower ED. Integration of attention to R/S issues in ED treatment is widespread and evidence suggests it may enhance effectiveness compared to treatments based solely on cognitive or emotional support. Most evidence on R/S and nutrition comes from US-based or other Western samples, primarily Christian, although several studies have examined Muslim Ramadan fasting, and scattered studies have also examined other traditions, as well as non-denominational spirituality measures.

This chapter is one of thirteen reviews in this volume providing a public health perspective on the empirical evidence relating R/S to physical and mental health.

Keywords Religion · Spirituality · Public health · Nutrition · Diet · Vegetable · Fat · Cholesterol · Eating disorder · Fasting

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Ensuring adequate nutrition has been an interest of public health for more than a century, at least since the establishment of milk stations in the 1890s as part of maternal/child health programs. In responding to the Great Depression of the 1930s, the US federal government established several food assistance programs for poor families that were the ancestors of many food assistance programs that have continued to operate (Schneider 2011). At present, almost 3% of public health students are enrolled in programs focusing on public health nutrition (see chapter "Reviewing Religion/Spirituality Evidence from a Public Health Perspective: Introduction", this volume, Table 1).

There are numerous reasons to expect that religious and/or spiritual (R/S) factors may be associated with nutritional variables of interest. A generic model for how R/S factors may affect physical health outcomes was introduced earlier (Chapter "Model of Individual Health Effects: Supporting Evidence", this volume). This generic model suggests that R/S will often be associated with better nutrition because dietary choices are a primary health behavior. Parallel to other health behaviors, engagement with R/S may motivate better dietary choices out of a desire to stay healthy for service to family, neighbor, or God, or out of a sense that one should practice positive stewardship of the body. Some religious traditions may supply specific directives, such as Jewish or Muslim injunctions to observe kosher or halal. In a recent review, Tan et al. (2013) note that religious dietary restrictions may be either ongoing, stable, and distinctive (e.g., kosher or halal), or temporally circumscribed (e.g., fasting during Ramadan by Muslims, or before communion by Eastern Orthodox Christians).

The present review is based upon and constrained by the body of available empirical studies of R/S and nutrition, which is comparatively smaller than for many other public health subfields, but has begun charting answers to a broad range of important questions. The following subsections examine relations between R/S and diet and nutritional status, cholesterol and fasting, overweight status, eating disorders, congregational intervention programs, and denominational dietary differences.

Diet and Nutritional Status Koenig et al. (2012, pp. 538–540, 883–886) listed 22 studies of diet or nutritional status since 2000. Many of these were encompassed in a recent systematic review by Tan et al. (2013), which examined the relation between R/S and fruit, vegetable and fat intake. These researchers found 39 relevant peer-reviewed studies in English, all cross-sectional. Of 25 studies that examined degree of R/S, a majority (88%) adjusted for demographic covariates such as age, gender and years of education. Out of 17 studies reporting associations between degree of R/S and fruit/vegetable intake, a majority (n = 9) reported positive associations with degree of R/S, one reported negative associations, one reported mixed associations, and the remainder (n = 6) reported null associations. Findings were more mixed for 15 studies reporting associations between degree of R/S and fat intake: Three studies reported favorable associations linking higher degree of R/S with reduced fat intake, three showed unfavorable associations, two showed mixed associations, and seven showed null associations. Most studies of the degree of R/S studied Christian

populations, although one reported that more highly orthodox Jews consumed less total fat and saturated fat, more unsaturated fat, and have a higher polyunsaturated to saturated fat ratio (Shatenstein et al. 1993). The investigators called for more studies that were longitudinal and more studies of non-Christian populations.

Various measures of overall diet quality have also been employed as outcomes in a few R/S-health studies of R/S and nutrition. Tan et al. (2016) reported that intrinsic religiosity and Sabbath-keeping were independent favorable predictors of a 10-item measure of better diet among Malaysian Seventh Day Adventists (n = 574). Similarly, Rew et al. (2007) reported a favorable correlation between R/S and an 8-item measure of healthy eating among undergraduates (n = 28). However, mixed associations have also been observed. Li et al. (2016) reported very small and curvilinear associations involving a 12-component measure of dietary quality among US nurses (n = 48,984), with slightly poorer dietary quality among those attending religious services weekly than those attending more often, or those attending less often. And Hill et al. (2006) reported somewhat poorer dietary quality (self-reported in a single-item) among adults in Texas (n = 1442) who attended worship services less than monthly, compared to those who never attended or attended more often. The field appears to lack a systematic review of this heterogeneous body of overall dietary quality studies. For future work, Tan et al. 2014, p. 806) observed that dietary scales, "even though… convenient to use, do not provide specific dietary intake," and recommended that future work should also include "golden standard" dietary intake records, such as the 24-hour dietary recall.

Cholesterol and Fasting Koenig et al. (2012, pp. 540–541, 883–884) identified 23 studies of cholesterol and R/S activities of various kinds, including fasting. A majority (n = 12, 52%) reported that R/S activities or an R/S intervention were favorably associated with lower cholesterol levels, while many fewer found unfavorable associations (n = 3, 13%), and the remainder found null associations (n = 8, 35%). Six of these studies investigated Ramadan fasting, all but one reporting lower cholesterol during Ramadan, with higher cholesterol during Ramadan reported among one sample of diabetic women (n = 60, Khaled et al. 2006). Several of these studies were also incorporated in a systematic review by Salim et al. (2013), who reported that Ramadan fasting among normal healthy individuals and patients with stable cardiac illness was associated with favorable changes in lipid profiles, body mass index and blood pressure.

Overweight Status Unlike other health behavioral indicators, many studies have found unfavorable associations between R/S factors and overweight and obesity. Six out of seven studies before 2000 reported significant unfavorable associations (Koenig et al. 2012). Combined with more recent findings, Koenig et al. (2012, pp. 541–542, 886–889) identified 36 studies of R/S and weight, of which seven reported lower weight among the more R/S, 14 reported greater weight, and the remainder reported associations that were mixed (n = 2) or null (n = 36). When reviewing studies with the highest quality ratings, "cross-sectional analyses suggest that religious involvement is related to greater obesity and greater BMI, especially

in populations where a significant proportion are minorities" (p. 544). Most of these studies were among Christian or Jewish populations, although a recent study of South Asian immigrants to the US reported that higher religiousness was associated with greater odds of overweight among Hindu and Sikh immigrants, but not Muslim immigrants (Bharmal et al. 2013).

Compared to most other health behaviors, findings of mixed or adverse (unfavorable) relationship of R/S with measures of overweight and obesity, are much more common. The reasons for this contrast are unclear. Cline and Ferraro (2006) listed several potential explanations, including treating overeating as an "accepted vice" (p. 271) viewed as less harmful than other behaviors such as smoking, excessive alcohol consumption, and sexual promiscuity; that food, rather than alcohol, is the "celebratory good to be consumed" (p. 271); or that religious organizations may function as welcoming settings for people who are obese and seeking protection from social stigma. Such speculation underscores the fact that R/S is multidimensional and is theorized to affect health behaviors through *culture*. The presence of mixed findings is a reminder both that R/S is multidimensional, and that R/S cultures may evolve over time at all levels. Behaviors that are sanctified at one time may become desanctified later, or vice-versa (see also the discussion of a dynamic evolving model of religion/spirituality in chapters "Social and Community-Level Factors in Health Effects from Religion/Spirituality", and "Questions on Assessing the Evidence Linking Religion/Spirituality to Health", this volume). Further studies are clearly needed of R/S, weight, and eating behaviors, with particular attention to cultural factors, multiple dimensions of R/S, and longitudinal designs.

Eating Disorders Eating disorders (ED) are a nutrition-related issue of concern in public health (Austin 2011; Austin and Sonneville 2013). Various authors have theorized specific pathways by which R/S factors might affect EDs. For example, several researchers have theorized that EDs may often – as is commonly said about alcoholism – represent a misdirected attempt to fill a spiritual hunger (Richards et al. 2013). Eating disorders are also often linked to body image disturbances. Spangler (2010) has theorized three broad pathways by which R/S factors might affect body image disturbance and eating disorders either favorably or adversely: teachings about the nature and purpose of the body (e.g., as sacred gift versus as needing control of carnality); teachings about the nature of the self (e.g. as a valued child of God versus as a sinner); and specific dietary and grooming prescriptions.

A recent systematic review by Akrawi et al. (2015) identified 22 studies of R/S and EDs, yielding evidence that "strong and internalised religious beliefs coupled with having a secure and satisfying relationship with God were associated with lower levels of disordered eating, psychopathology and body image concern" (p. 7). Favorable R/S relations were clearer for body image (12 of 15 studies favorable) than for measures of ED-related psychopathology (6/15 favorable, 4/15 unfavorable, 2/15 mixed). Slightly earlier, Koenig et al. (2012, pp. 821–822) identified 18 studies of R/S and EDs published since 2000, of which 8 reported favorable

associations with R/S, and 2 reported unfavorable associations. Reviewing empirical evidence, Richards et al. (2013) suggested four tentative conclusions:

> (a) Religious rationales may be used to justify anorexic behaviors, (b) religious orientation may be predictive of ED symptoms, (c) secure attachment to God is negatively associated with ED risk factors, and (d) religious affiliation may predict the severity of ED symptoms. (p. 323)

Richards et al. (2013) also review various lines of evidence supporting the conclusion that attending to R/S issues facilitates ED treatment. They tabulate more than half a dozen published approaches to integrating R/S into ED treatment, ranging from feminist and 12-step to theistic (Table 16.1, p. 328). An internet search conducted by these authors revealed that websites for 43% (64) of 150 US-based ED treatment programs indicate that R/S issues are programmatically addressed in some way. A randomized trial by Richards et al. (2006) reported that compared to participants in groups for cognitive support (n = 35) and for emotional support (n = 44), participants in a non-denominational spiritually-infused support group (n = 43) showed significantly greater reduction in a variety of measures of ED symptoms.

Intervention Programs Lancaster et al. (2014) identified 27 studies of obesity interventions in African American faith-based organizations, finding that majorities reported success in reducing weight (70%) and increasing fruit and vegetable intake (60%). However, various needs for improved reporting were also noted in a methodologically-focused systematic review by Timmons (2015) that identified five published reports of faith-based weight-management interventions for African American women.

One program in New York City's South Bronx neighborhood engaged congregants (n = 253) at 15 churches in a 12-week R/S-tailored program supporting dietary changes for diabetes prevention. Compared to pretests, participants at posttest reported eating more fruit and being better able to judge portion sizes, and measurements revealed mean body weight reductions of 2% (4.38 lbs., Gutierrez et al. 2014).

Denominational Differences in Diet As noted earlier, a variety of religious traditions endorse specific dietary directives. These include Jewish injunctions to eat kosher, Muslim injuctions to eat halal, Seventh Day Adventist injunctions to eat vegetarian, and many others. Empirical research has sought to document some of the resultant dietary patterns as well as potential health consequences, giving rise to a notable literature on denominational dietary differences. Tan et al. (2013) identified 18 studies that examined denominational dietary differences, with most (n = 14) focused exclusively on denomination (i.e., lacking a degree of R/S measure), and nearly half (n = 8) comparing Seventh Day Adventists (SDAs) with members of other denominations. Major findings included that SDAs consumed more fruit and vegetables and less saturated fat. Some studies have not measured diet directly, but have used denominational dietary norms or teachings as a basis to hypothesize denominational differences in health outcomes. For example, Troyer (1988) reviewed cancer rates among Amish, Hutterites, SDAs, and Mormons, finding only intermittent support for expectations based on previous research on dietary and

other lifestyle risk factors (e.g., smoking, age of first childbearing, socioeconomic status). The frequent inconsistencies led the author to suggest that "the etiology of cancers is often multifactorial, involving perhaps a combination of numerous risk factors as well as protective factors… [that] may be additive or multiplicative… it may be just as valid and more realistic to consider composite risk factors (or lifestyles) as to try to implicate isolated, discrete risk factors" (p. 1014).

Seventh Day Adventists, because of their overall exceptionally good health profiles seemingly attributable partly to diet, have also been popularized in the mass media as a so-called "Blue Zone" community with an exceptional proportion of members living to the age of one hundred years (Buettner 2012). Several such exceptional communities have been identified worldwide, including SDAs in Loma Linda, California, as well as primarily geographically based communities in Okinawa in Japan, Sardinia in Italy, Ikaria in Greece, and Nicoya in Costa Rica. Findings were consistent with the idea that diet and R/S factors may each contribute to an overall community lifestyle that facilitates longevity, Although spirituality and diet – along with other lifestyle factors and community social relationships are common themes in both centenarian self-perceptions and scientific studies, their precise contributions and the relation between them remains incompletely understood (Cassidy 2008; Freeman et al. 2013; Bishop 2011).

Box 1: Ideas for Application to Public Health Practice: Public Health Nutrition

Knowledge of the diverse ways that religious/spiritual teachings and community norms affect nutrition can vitally inform public health nutritional efforts as well as partnership building with religious/spiritual communities:

- ✓ Be aware that R/S communities may engage in a mixture of dietary practices that are partly nutritionally favorable, and partly unfavorable, depending on community and context;
- ✓ When seeking to address obesity and overweight issues in African American and other communities, consider using or building upon numerous previous church-based interventions;
- ✓ When seeking to address or prevent eating disorders, consider employing R/S-tailored prevention strategies or R/S-infused treatments, which have shown empirical support.

Please see chapters in Part II of this volume for in-depth discussion of the relevance of religion and spirituality to applied public health work. See Part I's first chapter for an overview of major application themes.

1 Summary: Nutrition

Several ideas for application to public health practice are provided in Box 1. In summary, reviews of research on R/S-nutrition findings reveal that

- Engagement with R/S activities shows generally favorable associations with greater fruit and vegetable intake (Tan et al. 2013).
- R/S has shown a mixture of favorable and unfavorable associations with fat intake and overweight status (Tan et al. 2013; Koenig et al. 2012).
- In a small handful of studies investigating how R/S relates to overall dietary quality, two have reported favorable associations, whereas two others have reported curvilinear (mixed) associations;
- Religious fasting, especially Ramadan fasting by healthy individuals or those with cardiovascular disease, shows generally favorable associations with lower cholesterol and weight status, but these patterns do not generalize to diabetics (Salim et al. 2013).
- R/S shows a complex relation with eating disorders, with some R/S dimensions, such as secure divine attachment, showing favorable associations with less ED. Integration of attention to R/S issues in ED treatment is widespread and evidence suggests it may enhance effectiveness compared to treatments based solely on cognitive or emotional support (Richards et al. 2013).
- Intervention programs in African American church congregations can be effective in reducing weight and increasing fruit and vegetable intake (Lancaster et al. 2014).
- Different traditions and denominations sometimes offer distinctive dietary injunctions, although such differences, even when viewed in combination with other lifestyle factors, have to date been found only intermittently predictive of group differences in patterns of disease (Troyer 1988);
- Most evidence on R/S and nutrition comes from US-based or other Western samples, primarily Christian, although several studies have examined Muslim Ramadan fasting, and scattered studies have also examined other traditions (Beeri et al. 2008; Shatenstein et al. 1993; Bharmal et al. 2013), as well as nondenominational spirituality measures (Reid and Smalls 2004).

References

Akrawi, D., Bartrop, R., Potter, U., & Touyz, S. (2015). Religiosity, spirituality in relation to disordered eating and body image concerns: A systematic review. *Journal of Eating Disorders, 3*(1), 29. https://doi.org/10.1186/s40337-015-0064-0.

Austin, S. B. (2011). The blind spot in the drive for childhood obesity prevention: Bringing eating disorders prevention into focus as a public health priority. *American Journal of Public Health, 101*(6), e1–e4. https://doi.org/10.2105/AJPH.2011.300182.

Austin, S. B., & Sonneville, K. R. (2013). Closing the "know-do" gap: Training public health professionals in eating disorders prevention via casemethod teaching. *The International Journal of Eating Disorders, 46*(5), 533–537. https://doi.org/10.1002/eat.22111.

Beeri, M. S., Davidson, M., Silverman, J. M., Schmeidler, J., Springer, R. R., Noy, S., et al. (2008). Religious education and midlife observance are associated with dementia three decades later in Israeli men. *Journal of Clinical Epidemiology, 61*(11), 1161–1168. https://doi.org/10.1016/j.jclinepi.2007.09.011.

Bharmal, N., Kaplan, M. R., Shapiro, M. F., Kagawa-Singer, M., Wong, M. D., Mangione, C. M., et al. (2013). The association of religiosity with overweight/obese body mass index among Asian Indian immigrants in California. *Preventive Medicine, 57*(4), 315–321. https://doi.org/10.1016/j.ypmed.2013.06.003.

Bishop, A. J. (2011). Spirituality and religiosity connections to mental and physical health among the oldest old. In L. W. Poon & J. Cohen-Mansfield (Eds.), *Understanding well-being in the oldest old* (pp. 227–239). New York: Cambridge University Press.

Buettner, D. (2012). *The Blue Zones: 9 lessons for living longer from the people who've lived the longest*. Washington, DC: National Geographic.

Cassidy, K. A. (2008). Centenarians. In S. J. D. Loue & M. Sajatovic (Eds.), *Encyclopedia of Aging and Public Health* (pp. 200–201). Boston: Springer US.

Cline, K. M. C., & Ferraro, K. F. (2006). Does religion increase the prevalence and incidence of obesity in adulthood? *Journal for the Scientific Study of Religion, 45*(2), 269–281. https://doi.org/10.2307/3838317.

Freeman, S., Garcia, J., & Marston, H. R. (2013). Centenarian self-perceptions of factors responsible for attainment of extended health and longevity. *Educational Gerontology, 39*(10), 717–728. https://doi.org/10.1080/03601277.2012.750981.

Gutierrez, J., Devia, C., Weiss, L., Chantarat, T., Ruddock, C., Linnell, J., et al. (2014). Health, community, and spirituality: Evaluation of a multicultural faith-based diabetes prevention program. *The Diabetes Educator, 40*(2), 214–222. https://doi.org/10.1177/0145721714521872.

Hill, T. D., Burdette, A. M., Ellison, C. G., & Musick, M. A. (2006). Religious attendance and the health behaviors of Texas adults. *Preventive Medicine, 42*(4), 309–312. https://doi.org/10.1016/j.ypmed.2005.12.005.

Khaled, B. M., Bendahmane, M., & Belbraouet, S. (2006). Ramadan fasting induces modifications of certain serum components in obese women with type 2 diabetes. *Saudi Medical Journal, 27*(1), 23–26.

Koenig, H. G., King, D. E., & Carson, V. B. (2012). *Handbook of religion and health* (2nd ed.). Oxford/New York: Oxford University Press.

Lancaster, K. J., Carter-Edwards, L., Grilo, S., Shen, C., & Schoenthaler, A. M. (2014). Obesity interventions in African American faith-based organizations: A systematic review. *Obesity Reviews, 15*, 159–176. https://doi.org/10.1111/obr.12207.

Li, S., Okereke, O. I., Chang, S.-C., Kawachi, I., & VanderWeele, T. J. (2016). Religious service attendance and lower depression among women—A prospective cohort study. *Annals of Behavioral Medicine, 50*(6), 876–884. https://doi.org/10.1007/s12160-016-9813-9.

Reid, T. L. B., & Smalls, C. (2004). Stress, spirituality and health promoting behaviors among African American college students. *Western Journal of Black Studies, 28*(1), 283–291.

Rew, L., Wong, Y. J., Torres, R., & Howell, E. (2007). A linguistic investigation of mediators between religious commitment and health behaviors in older adolescents. *Issues in Comprehensive Pediatric Nursing, 30*(3), 71–86. https://doi.org/10.1080/01460860701525147.

Richards, P. S., Berrett, M. E., Hardman, R. K., & Eggett, D. L. (2006). Comparative efficacy of spirituality, cognitive, and emotional support groups for treating eating disorder inpatients. *Eating Disorders: The Journal of Treatment & Prevention, 14*(5), 401–415. https://doi.org/10.1080/10640260600952548.

Richards, P. S., Weinberger-Litman, S. L., Susov, S., & Berrett, M. E. (2013). Religiousness and spirituality in the etiology and treatment of eating disorders. In K. I. Pargament, A. Mahoney, & E. P. Shafranske (Eds.), *APA handbook of psychology, religion, and spirituality (Vol. 2): An applied psychology of religion and spirituality* (pp. 319–333). Washington, DC: American Psychological Association. https://doi.org/10.1037/14045-010.

Salim, I., Al Suwaidi, J., Ghadban, W., Alkilani, H., & Salam, A. M. (2013). Impact of religious Ramadan fasting on cardiovascular disease: A systematic review of the literature. *Current Medical Research and Opinion, 29*(4), 343–354. https://doi.org/10.1185/03007995.2013.774 270.

Schneider, M.-J. (2011). *Introduction to public health* (3rd ed.). Sudbury: Jones and Bartlett.

Shatenstein, B., Ghadirian, P., & Lambert, J. (1993). Influence of the Jewish religion and Jewish dietary laws (Kashruth) on family food habits in an ultra-orthodox population in Montreal. *Ecology of Food and Nutrition, 31*(1–2), 27–44. https://doi.org/10.1080/03670244.1993.999 1348.

Spangler, D. L. (2010). Heavenly bodies: Religious issues in cognitive behavioral treatment of eating disorders. *Cognitive and Behavioral Practice, 17*(4), 358–370. https://doi.org/10.1016/j. cbpra.2009.05.004.

Tan, M. -M., Chan, C. K. Y., & Reidpath, D. D. (2013). Religiosity and spirituality and the intake of fruit, vegetable, and fat: A systematic review. *Evidence Based Complementary and Alternative Medicine, 2013*, Article ID 146214. https://doi.org/10.1155/2013/146214.

Tan, M.-M., Chan, C. K. Y., & Reidpath, D. D. (2014). Faith, food and fettle: Is individual and neighborhood religiosity/spirituality associated with a better diet? *Religions, 5*(3), 801–813. https://doi.org/10.3390/rel5030801.

Tan, M.-M., Chan, C. K. Y., & Reidpath, D. D. (2016). Religiosity, dietary habit, intake of fruit and vegetable, and vegetarian status among Seventh-Day Adventists in West Malaysia. *Journal of Behavioral Medicine, 39*(4), 675–686. https://doi.org/10.1007/s10865-016-9736-8.

Timmons, S. (2015). Review and evaluation of faith-based weight management interventions that target African American women. *Journal of Religion and Health, 54*(2), 798–809. https://doi. org/10.1007/s10943-014-9912-5.

Troyer, H. (1988). Review of cancer among 4 religious sects: Evidence that life-styles are distinctive sets of risk factors. *Social Science and Medicine, 26*(10), 1007–1017. https://doi. org/10.1016/0277-9536(88)90218-3.

Maternal/Child Health, Religion, and Spirituality

Doug Oman

Abstract This chapter reviews theories and empirical evidence on religion and spirituality (R/S) as factors relevant to maternal and child health, the field of concentration of about 3% of public health students nationwide.

Initial evidence from small numbers of studies suggests favorable associations between R/S factors and birthweight outcomes, better health behaviors among pregnant women, less maternal anxiety and depression, and greater likelihood of breastfeeding, but mixed associations with under-5 year child mortality. Some studies have reported favorable R/S associations with rates of immunization, but many denominational differences exist, and about 10 US child deaths per year have been attributed to medical care withheld by parents on religious grounds.

Dozens of studies link R/S to reduced adolescent health risk behaviors such as the use of alcohol, tobacco, marijuana, and other drugs. Evidence shows favorable R/S associations with youth exercise, seat belt use, diet, and sexual restraint. Dozens of studies also document favorable R/S associations with adolescent well-being, self-esteem, reduced delinquency, and reduced depression, but not less anxiety. R/S factors play an important role in family coping with child special needs (e.g., developmental disabilities or chronic illness).

This chapter is one of thirteen reviews in this volume providing a public health perspective on the empirical evidence relating R/S to physical and mental health.

Keywords Religion · Spirituality · Public health · Maternal/child health · Birthweight · Breastfeeding · Immunization · Adolescence · Health behavior · Mental health

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Maternal/Child Health (MCH) has been an important area of public health concern in Europe and the US since the late nineteenth century, where it has represented one of the highest public health priorities (Rosenfield and Min 2009; Schneider 2011, p. 326). Maternal and child health are closely linked, especially while the mother is pregnant and during nursing, although maternal and child health can continue to exert mutual influence through adolescence and beyond. From earliest times, MCH health initiatives have focused on maternal and child nutrition, and contemporary emphases include breast-feeding and adolescent health (Schneider 2011). In recent years, approximately 3% of US public health students nationwide have been enrolled in MCH programs (see chapter "Reviewing Religion/Spirituality Evidence from a Public Health Perspective: Introduction" this volume, Table 1).

A considerable body of empirical research has now examined the role of religious and spiritual (R/S) factors in maternal/child health. As a microcosm of the entirety of public health, MCH encompasses a very diverse set of topics. In this chapter, we do not attempt to comprehensively discuss all potential R/S-MCH topics, instead focusing on R/S-MCH topics that have already drawn empirical research. Accordingly, the present chapter focuses especially on R/S influences on prenatal, infant, child, and adolescent health. Less attention is given to influences directly on maternal health. Although a substantial number of R/S-health studies have investigated health-related behaviors of mothers (e.g., breastfeeding), fewer have focused explicitly on the *health* of mothers, perhaps because many findings about adult women can plausibly be extrapolated to mothers. Elsewhere, a review by Gaydos et al. (2010) identified over 400 publications on R/S and reproductive health, although much of this literature pertains especially to *potential* mothers, and it remains unclear how many of these studies may have examined infant or child outcomes.

A generic R/S-health model was described earlier (see chapter entitled "Model of Individual Health Effects from Religion/Spirituality: Supporting Evidence," this volume). This generic model suggests several pathways through which R/S factors might affect child health. Importantly, most studies of R/S-health relations among pre-adolescent children have measured R/S factors at the level of the family rather than of the child, whose independent views of religion and spirituality are more difficult to conceptualize and measure. Pathways through which maternal and family R/S might affect child health vary somewhat by age, but at all ages include health behaviors as well as the type and degree of parental and family support and caring provided to the child (Oman and Thoresen 2006). Especially important for children is their *socialization* by parents and family into mentally and physically healthy ways of life. Impressions formed early can be long-lasting. Some evidence even suggests that social conditioning can begin before birth, supporting the plausibility of traditional religious/spiritual teachings that spiritual engagement during pregnancy can benefit an unborn child both physically and mentally, although such pathways remain empirically untested.[1]

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[1] Prenatal auditory experience has been shown to influence postnatal auditory preferences in animal species ranging from chickens and guinea pigs to sheep. Similarly, human newborns demonstrate statistically significant preferences for hearing their mothers recite stories that have been

   Distinctive or recurring topics investigated in the literature include associations of R/S factors with neonatal and infant health and survival, maternal health behaviors, family social environments, child medical care and neglect, and coping by families of children with special needs, as well as adolescents' health behaviors, mental health, resilience and developmental assets, abstinence pledges, and delinquency. The following subsections summarize key findings reported in these literatures.

Neonatal and Infant Health and Survival Birthweight has long been recognized as an important indicator of neonate health. Burdette et al. (2012) used data from Fragile Families and Child Wellbeing Study (FFCWB), an American longitudinal birth cohort study of 4898 children. They reported that "each unit increase in the frequency of religious attendance reduces the odds of low birth weight by 15%", and that this association was not explained by mental health, alcohol use, illicit drug use, poor nutrition, or prenatal care. Similarly, a study of Australian mothers (n = 6566) reported that more intense R/S involvement was associated with higher birthweight, after sociodemographic adjustments (Najman et al. 1988).

   A few studies have also examined relations between R/S factors and infant or child mortality. Koenig et al. (2012, p. 863) tabulated five studies that focused on children age 5 years or younger. Three only tested for denominational differences. The two remaining studies produced mixed findings, with the importance of prayer among Chinese households (n = 907) linked to higher child mortality, but subjective religiousness among Israeli parents of infants with brain hemorrhages (n = 102) linked to lower infant mortality (Foggin et al. 2001).

Maternal Health Behaviors in Pregnancy and Infancy A scattered set of studies in several cultural settings suggest primarily positive relations between R/S factors and maternal health-related behavior and mental health during pregnancy and infancy, although this body of research appears never to have been systematically reviewed. One study investigated a US national sample of pregnant and postpartum Black, Hispanic and White women (n > 1000), finding that attendance at religious services showed strong associations with reduced consumption of alcohol (Odds Ratio [OR] = 0.21) and smoking (OR = 0.16, Page et al. 2009). Similarly, a study of Australian mothers (n = 6566) reported that more intense religiousness was associated with less alcohol consumption and smoking, after demographic adjustments (Najman et al. 1988). A third study reported that religiousness was associated with lower rates of smoking among pregnant African American women (n = 81), but not among pregnant low-income white women (n = 59) (Jesse et al. 2006).

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recited prenatally, in comparison to other stories (DeCasper and Spence 1986). Oman and Thoresen (2006) note that "religiously or spiritually devout mothers in many cultures participate in frequent singing of spiritual songs or chanting of a holy or divine name… Repeated exposure to such stimuli could condition the developing fetal nervous system positively toward the specific holy names or songs, thereby indirectly predisposing the child toward the associated spiritual ways of life" (p. 408). Child health effects from such practices may also occur through other potential causative pathways, such as reduced maternal fear (e.g., Hunter et al. 2011).

R/S has also been linked to better maternal mental health. In an Indian study, religiousness was associated with less anxiety and better birth outcomes among pregnant women (n = 200) (Kumari et al. 2013). In a study of pregnant mothers in the US (n = 178), negative religious coping was tied to more anxiety and depression, and positive religious coping was tied to stress-related growth (Lucero et al. 2013). Another US study of pregnant mothers (n = 345) reported links between religiousness and lower depression (Mann et al. 2007).

In neonates and infants, breastfeeding has been linked to many positive outcomes, and has long been the focus of public health interest. In a national one-year longitudinal study of disadvantaged new mothers (n = 4166), more frequent attendance at religious services was associated with greater likelihood of initiating breastfeeding (OR = 1.49, Burdette and Pilkauskas 2012). Earlier studies had also reported positive associations between breastfeeding and religiousness in Muslim and Jewish samples in Israel (Azaiza and Palti 1997; Birenbaum et al. 1993). In US-based ecological analyses at the state level, however, religion has been reported to be negatively associated with rates of breastfeeding (Reeve and Basalik 2011).

Family Social Environments R/S factors have been linked to indicators of the quality of family as a social environment. Mahoney et al. (2001) meta-analyzed 94 studies of R/S and home life, concluding that greater religiousness was associated with lower divorce rates and higher marital satisfaction, although the effect was small.

Child Medical Care and Child Neglect Elsewhere, we described the available research on immunization and health (see chapter on "Infectious Diseases, Religion, and Spirituality," this volume, section "Immunization"). This research tends to show favorable overall patterns between R/S factors and immunization. Much of this work has focused on denominational differences or has investigated adult vaccination rates. However, especially relevant to this chapter is one study that focused on child vaccination, finding that a religious commitment predicted greater intent by Dutch parents (n = 283) to vaccinate their children (Hak et al. 2005). Similarly, as noted in this volume's chapter on "Infectious Diseases, Religion, and Spirituality" (section on "Adherence to Treatment for Infection"), one study has examined adherence to pediatric HIV treatment regimens, reporting that better adherence was associated with higher levels of religious belief and practice (Park and Nachman 2010).

Importantly, on the negative side, links have also been documented between some forms of R/S and child medical neglect. A half dozen such studies were identified and reviewed by Koenig et al. (2001, pp. 68–69). One study reported that between 1975 and 1995, deaths had been documented of 172 children nationwide that could be attributed to parental withholding of medical care on religious grounds (Asser and Swan 1998).

Coping with Childhood Chronic Illness and Special Needs A small emerging empirical literature is examining the role of R/S factors in coping with childhood chronic illness, developmental disability, and psychiatric illness – sometimes

collectively called childhood special needs (Cotton et al. 2013). More than 18% of US children under age 18, more than 12 million individuals, have been estimated to suffer from such a chronic condition that "required health and related services of a type or amount beyond that required by children generally" (Newacheck et al. 1998, p. 117). Cotton et al. (2013) identified about a dozen studies documenting favorable links between R/S factors and coping with childhood special needs, and at least three that documented links between R/S "struggles" and worse outcomes, indicating that R/S could at times be a source of distress for such families (p. 409; see also chapters "Model of Individual Health Effects from Religion/Spirituality: Supporting Evidence," and "Mental Health, Religion, and Spirituality," this volume). Most of these studies have focused on coping by parents of children with special needs, but a few have examined coping by the children themselves (e.g., benefits reported by Cotton et al. 2009). A few have documented similar processes in minority religious groups or in samples outside the developed world (e.g., Azar-Nassiry 2014; Silva et al. 2008).

Such R/S coping processes and their implications appear to be unevenly recognized and taken into account by healthcare systems. Interviews by Cadge et al. (2009) with elite US pediatricians (n = 30) revealed that they view R/S as "both a barrier and a bridge to medical care," and "see how information about patients' religion and spirituality can be relevant to their work but are hesitant to ask about it directly in everyday practice" (p. 715). Cotton et al. (2013) have describe a variety of assessment methods and strategies for integrating awareness of R/S coping and its implications into primary care and healthcare settings that serve children with special needs.

Adolescent Health Behaviors One of the most common empirical foci of R/S and pre-adult health is adolescent health behaviors. A meta-analysis by Yonker et al. (2012) synthesized findings from 27 studies that were published from 1990 to 2010 on R/S and health risk behaviors published from 1990 to 2010. These studies collectively revealed significantly favorable effects of R/S on alcohol (r = −0.17), tobacco smoking (r = −0.13), and marijuana use (r = −0.12). Similarly, a meta-analysis of 22 studies of R/S and adolescent substance abuse found an overall inverse correlation (r = −0.16), significant regardless of the definitions of religiosity, with significant protection against use of cigarettes (r = −0.18), alcohol (r = −0.16), marijuana (r = −0.14), and other drugs (r = −0.18) (Yeung et al. 2009). And an earlier systematic review by Rew and Wong (2006) of 43 studies (10 longitudinal) found that most studies (84%) reported that R/S measures showed favorable associations with adolescents' health behaviors and attitudes ranging from smoking and substance abuse to exercise, seat belt usage, diet, and sexual restraint. In a more recent systematic review of 87 studies (36 longitudinal and 51 cross-sectional) pertaining to adolescent reproductive health, House et al. (2010) concluded that religiosity was associated with lower rates of (a) ever having had sex, (b) early sexual debut, and (c) frequency of sex.

Several noteworthy individual studies of adolescent health behaviors have used nationally representative samples. One nationally representative study of adolescents grade 7–12 (n = 16,306) reported that public and/or private religiosity were favorably associated with a variety of health behaviors such as lower smoking, lower alcohol use, lower rates of ever having had sex, and higher rates of self-reported use of effective birth control at first sex (Nonnemaker et al. 2003). Another national study of adolescents (n = 17,705) used latent class analyses to examine R/S linkages to substance use, fighting, and theft, concluding that fewer problem behaviors are predicted not by religious beliefs and attitudes alone, but by a combination of social and attitudinal/belief dimensions of religiousness (Salas-Wright et al. 2012). A third national study of adolescents aged 12–17 (n = 18,314) reported that alcohol use attitudes mediated the association of religiosity with lower use of alcohol, and that similar patterning was evident across four ethnic groups (Vaughan et al. 2011).

More mixed and sometimes unfavorable R/S associations are apparent, however, with adolescent utilization of health services related to reproductive health. For example, frequent attendance at religious services has been linked to lower utilization of routine gynecologic services such as Pap smear screening (see chapter "Health Policy and Management, Religion, and Spirituality," this volume), and R/S measures have shown mixed associations with rates of teen immunization against human papillomavirus (HPV; see chapter "Public Health Education, Promotion, and Intervention: Relevance of Religion and Spirituality," this volume).

Adolescent Mental Health   A meta-analysis by Yonker et al. (2012) synthesized findings from numerous studies of R/S and psychological outcomes from 1990 to 2010, reporting significant and favorable overall correlations with depression (r = −0.11 from k = 24 studies), well-being (r = 0.15, k = 8), and self-esteem (r = 11, k = 15), but not anxiety (r = −0.06, k = 15, p > 0.05), with moderating effects present for age, race, and type of R/S measure. Similar favorable associations were reported in an earlier systematic review by Dew et al. (2008), who identified 115 studies from 1969 to 2005 of R/S factors and psychiatric symptoms among adolescents aged 12–21 years, reporting that 92% of studies found at least one significant (p < 0.05) relation of religiousness and better mental health.

Using a somewhat broader definition of mental health that includes positive well-being, a systematic review by Wong et al. (2006) identified 20 studies of adolescent R/S and mental health published from 1998 to 2004, reporting that 90% of studies found positive findings in the relationships between adolescent R/S and mental health measures. Among individual studies, one was notably cross-cultural: Scales et al. (2014) used data from 12 to 25-year-olds (n > 7000) in eight countries (Australia, Cameroon, Canada, India, Thailand, Ukraine, UK, USA), finding that higher spiritual development scores were linked with better well-being outcomes for youth of diverse cultures and spiritual and religious beliefs.

Adolescent Resilience and Developmental Assets of Children and Youth   In recent years, some researchers have argued for greater recognition by public health

of the roles among children and adolescents of positive and protective factors, sometimes called *developmental assets* (Fergus and Zimmerman 2005; Morgan and Ziglio 2007). Research programs by multiple investigators have employed standardized measures of adolescent developmental assets, finding many predictive relationships with outcomes of interest (Lerner and Benson 2003). Major measurement instruments of developmental assets incorporate items to measure engagement with religion/spirituality (e.g., Oman et al. 2010). Importantly, R/S factors are often predictive of other developmental assets that have already been more widely recognized in public health, such as educational attainment. For example, Koenig et al. (2012, pp. 786–787) listed 12 studies of R/S and education, some well-controlled and of high quality, with all but one study reporting only positive associations between R/S and educational attainment.

Adolescent Abstinence Pledges Beginning in the mid-1990s, various conservative religious denominations and a various interdenominational organizations in the United States began encouraging adolescents to take an "abstinence pledge" to refrain from sexual intercourse until marriage (Regnerus 2007, p. 91; see also Burdette et al. 2015). Data from the well-known US nationally representative adolescent health survey Add Health, from its first wave (n ≈ 20,000, 1994–1995), reveal that 13% of adolescent respondents nationwide had taken such a pledge. At one point the number of pledgers was estimated at more than 2.5 million (Bearman and Bruckner 2001; Regnerus 2007). Rates of pledging have been highest among Evangelical Protestant and Mormon adolescents (e.g., 22–27%), somewhat lower among other sizeable traditions (8–12%), and lowest among Jewish and unaffiliated adolescents (2–6%), and have generally been higher among those who attend religious services weekly (22%) than less often (5–10%) or never (4–6%) (Regnerus 2007). Like the "borderline spiritual constructs" discussed elsewhere in this volume, both spiritual and non-spiritual forms of abstinence pledges can be envisioned (see chapter on "Model of Individual Health Effects from Religion/Spirituality: Supporting Evidence"). An initial evaluation using the Add Health data indicated that in comparison to non-pledgers, adolescent pledgers were substantially more likely to delay first sexual intercourse (e.g., "baseline rate is reduced by 34%" on average for most demographic groups – see Bearman and Bruckner 2001, p. 881). However, follow-up research has given rise to considerable doubt about the extent to which such pledges result in enduring benefits, especially after adjustments for religiosity and other well-established influences on sexual behaviors and risks. Various follow-up analyses and further studies have reported that pledgers and non-pledgers show similar rates of sexually transmitted infections, and that pledgers show lower rates of some protective behaviors, such as using a condom at sexual debut as well as seeking medical testing for sexually transmitted infections, and that many who reported pledging later deny that they have taken a pledge (see Brückner and Bearman 2005; Burdette et al. 2015; Rosenbaum 2009).

Youth Delinquency One meta-analysis by Cheung and Yeung (2011) synthesized findings by 40 studies from 1995 to 2009 of R/S-delinquency relationships, yielding

a favorable overall estimated correlation of r = −0.21 between religious involve-ment and delinquency. A meta-analysis by Yonker et al. (2012) synthesized findings from 10 studies from 1990 to 2010 of R/S and deviant behavior (i.e., stealing, van-dalism), yielding a nearly identical favorable estimated overall correlation of r = −0.21. An earlier systematic review by Johnson et al. (2000) came to non-quantitative but similar conclusions.

Faith/Health Partnerships and Spiritual Interventions About one out of every ten religious congregations in the US are estimated to participate in health-focused partnerships with a secular agency (Steinman and Bambakidis 2008; Trinitapoli et al. 2009). Many faith-health collaborations have targeted adults, as described in published systematic reviews and elsewhere in this volume (see chapter "Public Health Education, Promotion, and Intervention: Relevance of Religion and Spirituality," this volume; DeHaven et al. 2004). Child and adolescent health have also been promoted through faith-health partnerships, but published reports are con-siderably fewer in number.

Prevention of adolescent HIV risk is the focus of perhaps the largest number of published reports, with empirical studies emerging from both the US and lesser developed countries. In the US, partnerships with African American churches have received almost all of the attention. A US-based empirical outcomes study followed African American adolescents aged 13–14 years (n = 34) who received an HIV risk-reduction curriculum collaboratively developed by churches and health profession-als. Results showed significantly less use of marijuana and other drugs than used by a similar comparison group (n = 17) (Marcus et al. 2004). Other US-based reports have focused on processes of collaboration, intervention development, or curricula (Steinman et al. 2005; Torrence and Guidry 2007). Your Blessed Health, a notable collaborative effort based in Michigan, has successfully engaged hundreds of lead-ers affiliated with least nine different denominations in delivering HIV-prevention interventions "congruent with [their] doctrine and teachings" to more than 15,000 congregants (Griffith et al. 2010, p. 213; Tanner et al. 2014). One of five primary components is training faith leaders to implement a sexual health curriculum for adolescents in their congregations (Williams et al. 2011).

Such successes appear to reflect deeper worldview alignments. Based on exten-sive recent interviews and focus groups held in African American churches in Baltimore, Weeks et al. (2016) concluded that "the priorities of church stakeholders are consistent, rather than discordant, with the current paradigms of evidence-based sexual health programs and intervention adaptation" (p. 699). Similarly, Tanner et al. (2014) reported that available HIV-prevention efforts have "demonstrated two types of partnerships that have been most successful: academic researchers, clini-cians, and other providers partnering directly with adolescents or partnering with community- and faith-based organizations that serve youth" (p. 82).

A slightly different but also successful approach to HIV prevention has been pursued in Kenya, the site of a recent a randomized trial of a church-based interven-tion among rural adolescents aged 10–16 (n = 237). The investigators documented

significant effects that included better family communication, greater involvement by fathers, improved self-efficacy for HIV risk-reduction, and fewer risky sexual behaviors (Puffer et al. 2016).

Other faith-health partnerships have targeted additional age groups as well as other MCH-related variables such as physical activity and nutrition. Few if any published reports describe faith-health partnerships for maternal or infant health, although such approaches have recently been advocated (Lumpkins and Saint Onge 2017). Among US schoolchildren and youths, empirically oriented reports have documented the feasibility in ethnically and theologically diverse religious settings of interventions to promote physical activity or improved nutrition. However, sample sizes have sometimes been small and the particular interventions under study have been uneven in generating significant changes in the targeted outcomes (Dodani et al. 2015; Kahan and Nicaise 2012; Trost et al. 2009; Thompson et al. 2013). Detailed descriptions of partnered intervention development strategies, for purposes such reducing childhood obesity, have also been published (e.g., Reifsnider et al. 2010).

Finally, some spiritually-focused interventions have been directed to MCH populations, even apart from any faith-health partnerships. For example a recent intervention trial by Rickhi et al. (2015) randomized Canadian adolescents aged 13–18 years (n = 30) with major depressive disorder to either a waitlist or to receive an eight-week online intervention based on "spiritually informed principles (e.g. forgiveness, gratitude, compassion)… identified to be consistent across a wide range of spiritual practices and religious beliefs" (p. 2). Compared to wait-listed participants, those receiving the intervention showed reduced depression severity and improved self-concept.

A few spiritually-oriented meditative or mindfulness intervention studies have also been reported for addressing mental or physical health concerns among populations ranging from pregnant mothers to late adolescents, often but not always reporting significantly favorable effects, sometimes beyond those obtained from similar non-spiritual interventions (Hunter et al. 2011; Wachholtz and Austin 2013; Wachholtz et al. 2017; Cobb et al. 2016; see chapter "Model of Individual Health Effects from Religion/Spirituality: Supporting Evidence," this volume). More broadly, a growing empirical literature is exploring the effects of teaching meditation and/or mindfulness practices to grade school children or youth through channels such as school curricula or clinical interventions, with research showing generally favorable psychosocial and physiological effects (Black et al. 2009; Waters et al. 2015; Zoogman et al. 2015; see also chapter on "Mental Health, Religion, and Spirituality," this volume). However, the implication of these broader findings for R/S intervention is ambiguous, because meditation and mindfulness represent "borderline spiritual constructs" that exist in both spiritual and non-spiritual forms, with the appropriate classification of individual studies sometimes unclear (see discussion in chapter "Model of Individual Health Effects from Religion/Spirituality: Supporting Evidence," this volume, section "Borderline Spiritual Constructs").

Box 1: Ideas for Application to Public Health Practice: Maternal/Child Health

Knowledge of the various ways that maternal and child health are supported and affected by religious organizations and/or spiritual engagement can inform public health professionals' health promotion and partnership building efforts with religious/spiritual communities:

✓ Be aware of findings showing favorable relations between R/S factors and various dimensions of maternal well-being, and between R/S and improved birthweight;

✓ Be aware and open to diverse and mixed associations between R/S traditions and rates of immunization against some diseases, such as human papillomavirus (HPV);

✓ Be aware that R/S has been identified as a "developmental asset" with favorable associations documented between R/S factors and many health-related adolescent outcomes, including health behaviors such as smoking, substance use, exercise, and sexual restraint, as well as with psychological well-being and lower delinquency;

✓ Consider partnering with R/S communities to reduce adolescent HIV risk, to improve child or youth physical activity or nutrition, or to enhance stress management and other living skills through conveying culturally appropriate forms of meditation or mindfulness.

Please see chapters in Part II of this volume for in-depth discussion of the relevance of religion and spirituality to applied public health work. See Part I's first chapter for an overview of major application themes.

Summary: Maternal/Child Health

Several ideas for application to public health practice are provided in Box 1. In summary, reviews of research on R/S-MCH reveal that:

- Findings from few studies have shown favorable associations between R/S and birthweight, as well as mixed associations between R/S engagement and under-5 year child mortality;
- Several studies have reported linkages between R/S and better health behaviors among pregnant women, less maternal anxiety and depression, and greater likelihood of breastfeeding;
- Favorable associations between higher rates of immunization and R/S engagement have been reported in a few studies, yet differences exist between denominations, and one study documented approximately 10 US child deaths per year nationwide due to medical care withheld by parents on religious grounds;

- R/S factors play an important role in coping by families of children with special needs (e.g., with developmental disabilities or chronic illness), and are generally linked to more favorable outcomes, except that measures of religious "struggles" have been linked to worse outcomes;
- Favorable associations have been documented between R/S and reduced adolescent use of alcohol, tobacco, marijuana, and other drugs, in meta-analyses and dozens of studies, and favorable associations have also been documented between R/S factors and exercise, seat belt usage, diet, and sexual restraint;
- Favorable associations between R/S and adolescent depression, well-being, and self-esteem, but not anxiety, have been reported in dozens of studies and in corresponding reviews and meta-analyses;
- Religion/spirituality has been identified and measured as a youth developmental asset, and often predicts other developmental assets, such as education;
- Adolescent "abstinence pledges" to refrain from sexual intercourse until marriage have been widely advocated by some conservative US religious denominations, although empirical research has raised questions about their efficacy;
- R/S has been linked to lower rates of youth delinquency in several dozen studies, and in corresponding reviews and meta-analyses.

References

Asser, S. M., & Swan, R. (1998). Child fatalities from religion-motivated medical neglect. *Pediatrics, 101*(4), 625–629. https://doi.org/10.1542/peds.101.4.625.

Azaiza, F., & Palti, H. (1997). Determinants of breastfeeding among rural Moslem women in Israel. *Families, Systems & Health, 15*(2), 203–211. https://doi.org/10.1037/h0089801.

Azar-Nassiry, M. Z. (2014). *Muslim mothers' use of spirituality when parenting a child with special needs* (Unpublished doctoral dissertation). Irvine: Alliant International University.

Bearman, P. S., & Bruckner, H. (2001). Promising the future: Virginity pledges and first intercourse. *American Journal of Sociology, 106*(4), 859–912. https://doi.org/10.1086/320295.

Birenbaum, E., Vila, Y., Linder, N., & Reichman, B. (1993). Continuation of breast-feeding in an Israeli population. *Journal of Pediatric Gastroenterology and Nutrition, 16*(3), 311–315.

Black, D. S., Milam, J., & Sussman, S. (2009). Sitting-meditation interventions among youth: A review of treatment efficacy. *Pediatrics, 124*(3), e532–e541. https://doi.org/10.1542/peds.2008-3434.

Brückner, H., & Bearman, P. (2005). After the promise: The STD consequences of adolescent virginity pledges. *Journal of Adolescent Health, 36*(4), 271–278. https://doi.org/10.1016/j.jadohealth.2005.01.005.

Burdette, A. M., & Pilkauskas, N. V. (2012). Maternal religious involvement and breastfeeding initiation and duration. *American Journal of Public Health, 102*(10), 1865–1868. https://doi.org/10.2105/AJPH.2012.300737.

Burdette, A. M., Weeks, J., Hill, T. D., & Eberstein, I. W. (2012). Maternal religious attendance and low birth weight. *Social Science and Medicine, 74*(12), 1961–1967. https://doi.org/10.1016/j.socscimed.2012.02.021.

Burdette, A. M., Hill, T. D., & Myers, K. (2015). Understanding religious variations in sexuality and sexual health. In J. DeLamater & R. F. Plante (Eds.), *Handbook of the sociology of sexualities* (pp. 349–370). Cham: Springer.

Cadge, W., Ecklund, E. H., & Short, N. (2009). Religion and spirituality: A barrier and a bridge in the everyday professional work of pediatric physicians. *Social Problems, 56*(4), 702–721. https://doi.org/10.1525/sp.2009.56.4.702.

Cheung, C.-k., & Yeung, J. W.-k. (2011). Meta-analysis of relationships between religiosity and constructive and destructive behaviors among adolescents. *Children and Youth Services Review, 33*(2), 376–385. https://doi.org/10.1016/j.childyouth.2010.10.004.

Cobb, E. F., McClintock, C. H., & Miller, L. J. (2016). Mindfulness and spirituality in positive youth development. In I. Ivtzan, & T. Lomas (Eds.), *Mindfulness in positive psychology: The science of meditation and wellbeing* (pp. 245–264). New York: Routledge.

Cotton, S., Grossoehme, D., Rosenthal, S. L., McGrady, M. E., Roberts, Y. H., Hines, J., et al. (2009). Religious/spiritual coping in adolescents with sickle cell disease: A pilot study. *Journal of Pediatric Hematology/Oncology, 31*(5), 313–318. https://doi.org/10.1097/MPH.0b013e31819e40e3.

Cotton, S., Yi, M. S., & Weekes, J. C. (2013). The interface among spirituality, religion, and illness in families of children with special health care needs. In K. I. Pargament, A. Mahoney, & E. P. Shafranske (Eds.), *APA handbook of psychology, religion, and spirituality (Vol 2): An applied psychology of religion and spirituality* (pp. 405–419). Washington, DC: American Psychological Association. https://doi.org/10.1037/14046-021.

DeCasper, A. J., & Spence, M. J. (1986). Prenatal maternal speech influences newborns' perception of speech sounds. *Infant Behavior & Development, 9*(2), 133–150. https://doi.org/10.1016/0163-6383(86)90025-1.

DeHaven, M., Hunter, I. B., Wilder, L., Walton, J. W., & Berry, J. (2004). Health programs in faith-based organizations: Are they effective? *American Journal of Public Health, 94*(6), 1030–1036. https://doi.org/10.2105/AJPH.94.6.1030.

Dew, R. E., Daniel, S. S., Armstrong, T. D., Goldston, D. B., Triplett, M. F., & Koenig, H. G. (2008). Religion/spirituality and adolescent psychiatric symptoms: A review. *Child Psychiatry & Human Development, 39*(4), 381–398. https://doi.org/10.1007/s10578-007-0093-2.

Dodani, S., Sealey, P. C., Arora, S., Khosla, N., Lynch, S., James, D. S., et al. (2015). Short term outcomes of a faith-based obesity attenuation and prevention program for low income African American children: CHHIL feasibility and efficacy study. *Nutrition & Food Sciences, 5*(6), 1000435. https://doi.org/10.4172/2155-9600.

Fergus, S., & Zimmerman, M. A. (2005). Adolescent resilience: A framework for understanding healthy development in the face of risk. *Annual Review of Public Health, 26*, 399–419. https://doi.org/10.1146/annurev.publhealth.26.021304.144357.

Foggin, P., Armijo-Hussein, N., Marigaux, C., Zhu, H., & Liu, Z. (2001). Risk factors and child mortality among the Miao in Yunnan, Southwest China. *Social Science and Medicine, 53*(12), 1683–1696. https://doi.org/10.1016/S0277-9536(00)00452-4.

Gaydos, L. M., Smith, A., Hogue, C. J. R., & Blevins, J. (2010). An emerging field in religion and reproductive health. *Journal of Religion and Health, 49*(4), 473–484. https://doi.org/10.1007/s10943-010-9323-1.

Griffith, D. M., Pichon, L. C., Campbell, B., & Allen, J. O. (2010). YOUR blessed health: A faith-based CBPR approach to addressing HIV/AIDS among African Americans. *AIDS Education and Prevention, 22*(3), 203–217. https://doi.org/10.1521/aeap.2010.22.3.203.

Hak, E., Schönbeck, Y., Melker, H. D., Essen, G. A. V., & Sanders, E. A. M. (2005). Negative attitude of highly educated parents and health care workers towards future vaccinations in the Dutch childhood vaccination program. *Vaccine, 23*(24), 3103–3107. https://doi.org/10.1016/j.vaccine.2005.01.074.

House, L. D., Mueller, T., Reininger, B., Brown, K., & Markham, C. M. (2010). Character as a predictor of reproductive health outcomes for youth: A systematic review. *Journal of Adolescent Health, 46*(3, Suppl), S59–S74. https://doi.org/10.1016/j.jadohealth.2009.11.218.

Hunter, L., Bormann, J., Belding, W., Sobo, E. J., Axman, L., Reseter, B. K., et al. (2011). Satisfaction and use of a spiritually based mantram intervention for childbirth-related fears in couples. *Applied Nursing Research, 24*(3), 138–146. https://doi.org/10.1016/j.apnr.2009.06.002.

Jesse, D. E., Graham, M., & Swanson, M. (2006). Psychosocial and spiritual factors associated with smoking and substance use during pregnancy in African American and white low-income women. *Journal of Obstetric, Gynecologic, & Neonatal Nursing: Clinical Scholarship for the Care of Women, Childbearing Families, & Newborns, 35*(1), 68–77. https://doi.org/10.1111/j.1552-6909.2006.00010.x.

Johnson, B. R., Li, S. D., Larson, D. B., & McCullough, M. (2000). A systematic review of the religiosity and delinquency literature: A research note. *Journal of Contemporary Criminal Justice, 16*(1), 32–52. https://doi.org/10.1177/1043986200016001003.

Kahan, D., & Nicaise, V. (2012). Virtual Umra: An interdisciplinary faith-based pedometer intervention for increasing steps at school. *Journal of Physical Activity & Health, 9*(3), 402–413. https://doi.org/10.1123/jpah.9.3.402.

Koenig, H. G., McCullough, M. E., & Larson, D. B. (2001). *Handbook of religion and health*. New York: Oxford University Press.

Koenig, H. G., King, D. E., & Carson, V. B. (2012). *Handbook of religion and health* (2nd ed.). Oxford/New York: Oxford University Press.

Kumari, S., Joshi, S., & Jain, M. (2013). Religiosity, anxiety and pregnancy outcomes in Indian women. *Journal of the Indian Academy of Applied Psychology, 39*(1), 110–116.

Lerner, R. M., & Benson, P. L. (Eds.). (2003). *Developmental assets and asset-building communities: Implications for research, policy, and practice* (The Search Institute series on developmentally attentive community and society). New York: Kluwer Academic/Plenum Publishers.

Lucero, S. M., Pargament, K. I., Mahoney, A., & DeMaris, A. (2013). Links between religious and spiritual coping and adjustment among fathers and mothers during first pregnancy. *Journal of Reproductive and Infant Psychology, 31*(3), 309–322. https://doi.org/10.1080/02646838.2013.798864.

Lumpkins, C. Y., & Saint Onge, J. M. (2017). Reducing low birth weight among African Americans in the Midwest: A look at how faith-based organizations are poised to inform and influence health communication on the Developmental Origins of Health and Disease (DOHaD). *Healthcare, 5*(1), 6. https://doi.org/10.3390/healthcare5010006.

Mahoney, A., Pargament, K. I., Tarakeshwar, N., & Swank, A. B. (2001). Religion in the home in the 1980s and 1990s: A meta-analytic review and conceptual analysis of links between religion, marriage, and parenting. *Journal of Family Psychology, 15*(4), 559–596. https://doi.org/10.1037//0893-3200.15.4.559.

Mann, J. R., McKeown, R. E., Bacon, J., Vesselinov, R., & Bush, F. (2007). Religiosity, spirituality, and depressive symptoms in pregnant women. *International Journal of Psychiatry in Medicine, 37*(3), 301–313. https://doi.org/10.2190/PM.37.3.g.

Marcus, M., Walker, T., Swint, J. M., Smith, B. P., Brown, C., Busen, N., et al. (2004). Community-based participatory research to prevent substance abuse and HIV/AIDS in African-American adolescents. *Journal of Interprofessional Care, 18*(4), 347–359. https://doi.org/10.1080/13561820400011776.

Morgan, A., & Ziglio, E. (2007). Revitalising the evidence base for public health: An assets model. *Promotion & Education, 14*(2 suppl), 17–22. https://doi.org/10.1177/10253823070140020701x.

Najman, J. M., Williams, G. M., Keeping, J. D., Morrison, J., & Andersen, M. J. (1988). Religious values, practices and pregnancy outcomes: A comparison of the impact of sect and mainstream Christian affiliation. *Social Science and Medicine, 26*(4), 401–407. https://doi.org/10.1016/0277-9536(88)90308-5.

Newacheck, P. W., Strickland, B., Shonkoff, J. P., Perrin, J. M., et al. (1998). An epidemiologic profile of children with special health care needs. *Pediatrics, 102*(1), 117–123. https://doi.org/10.1542/peds.102.1.117.

Nonnemaker, J. M., McNeely, C. A., & Blum, R. W. (2003). Public and private domains of religiosity and adolescent health risk behaviors: Evidence from the National Longitudinal Study of adolescent health. *Social Science and Medicine, 57*(11), 2049–2054. https://doi.org/10.1016/S0277-9536(03)00096-0.

Oman, D., & Thoresen, C. E. (2006). Religion, spirituality, and Children's physical health. In E. C. Roehlkepartain, P. E. King, L. Wagener, & P. L. Benson (Eds.), *The handbook of spiritual development in childhood and adolescence* (pp. 399–415). Thousand Oaks: Sage.

Oman, R. F., Vesely, S. K., Tolma, E. L., Aspy, C. B., & Marshall, L. D. (2010). Reliability and validity of the youth asset survey: An update. *American Journal of Health Promotion, 25*(1), e13–e24. https://doi.org/10.4278/ajhp.081009-QUAN-242.

Page, R. L., Ellison, C. G., & Lee, J. (2009). Does religiosity affect health risk behaviors in pregnant and postpartum women? *Maternal and Child Health Journal, 13*(5), 621–632. https://doi.org/10.1007/s10995-008-0394-5.

Park, J., & Nachman, S. (2010). The link between religion and HAART adherence in pediatric HIV patients. *AIDS Care, 22*(5), 556–561. https://doi.org/10.1080/09540120903254013.

Puffer, E. S., Green, E. P., Sikkema, K. J., Broverman, S. A., Ogwang-Odhiambo, R. A., & Pian, J. (2016). A church-based intervention for families to promote mental health and prevent HIV among adolescents in rural Kenya: Results of a randomized trial. *Journal of Consulting and Clinical Psychology, 84*(6), 511–525. https://doi.org/10.1037/ccp0000076.

Reeve, C. L., & Basalik, D. (2011). A state level investigation of the associations among intellectual capital, religiosity and reproductive health. *Intelligence, 39*(1), 64–73. https://doi.org/10.1016/j.intell.2010.09.007.

Regnerus, M. D. (2007). *Forbidden fruit: Sex and religion in the lives of American teenagers*. New York: Oxford University Press.

Reifsnider, E., Hargraves, M., Williams, K. J., Cooks, J., & Hall, V. (2010). Shaking and rattling: Developing a child obesity prevention program using a faith-based community approach. *Family & Community Health, 33*(2), 144–151. https://doi.org/10.1097/FCH.0b013e3181d59487.

Rew, L., & Wong, Y. J. (2006). A systematic review of associations among religiosity/spirituality and adolescent health attitudes and behaviors. *Journal of Adolescent Health, 38*(4), 433–442. https://doi.org/10.1016/j.jadohealth.2005.02.004.

Rickhi, B., Kania-Richmond, A., Moritz, S., Cohen, J., Paccagnan, P., Dennis, C., et al. (2015). Evaluation of a spirituality informed e-mental health tool as an intervention for major depressive disorder in adolescents and young adults – a randomized controlled pilot trial. *BMC Complementary and Alternative Medicine, 15*. https://doi.org/10.1186/s12906-015-0968-x.

Rosenbaum, J. E. P. A. M. (2009). Patient teenagers? A comparison of the sexual behavior of virginity pledgers and matched nonpledgers. *Pediatrics, 123*(1), e110–e120. https://doi.org/10.1542/peds.2008-0407.

Rosenfield, A., & Min, C. (2009). A history of international cooperation in maternal and child health. In J. Ehiri (Ed.), *Maternal and child health* (pp. 3–17). New York: Springer.

Salas-Wright, C. P., Vaughn, M. G., Hodge, D. R., & Perron, B. E. (2012). Religiosity profiles of American youth in relation to substance use, violence, and delinquency. *Journal of Youth and Adolescence, 41*(12), 1560–1575. https://doi.org/10.1007/s10964-012-9761-z.

Scales, P. C., Syvertsen, A. K., Benson, P. L., Roehlkepartain, E. C., & Sesma, A., Jr. (2014). Relation of spiritual development to youth health and well-being: Evidence from a global study. In A. Ben-Arieh, F. Casas, I. Frønes, & J. E. Korbin (Eds.), *Handbook of child well-being* (pp. 1101–1135). Dordrecht: Springer.

Schneider, M.-J. (2011). *Introduction to public health* (3rd ed.). Sudbury: Jones and Bartlett.

Silva, R. A. R., Rocha, V. M., Davim, R. M. B., & Torres, G. D. V. (2008). Ways of coping with AIDS: Opinion of mothers with HIV children. *Revista Latino-Americana de Enfermagem, 16*(2), 260–265. https://doi.org/10.1590/S0104-11692008000200014 .

Steinman, K. J., & Bambakidis, A. (2008). Faith-health collaboration in the United States: Results from a nationally representative study. *American Journal of Health Promotion, 22*(4), 256–263. https://doi.org/10.4278/061212152R.1.

Steinman, K. J., Wright, V., Cooksey, E., Myers, L. J., Price-Spratlen, T., & Ryles, R. (2005). Collaborative research in a faith-based setting: Columbus congregations for healthy youth. *Public Health Reports, 120*(2), 213–216.

Tanner, A. E., Philbin, M. M., & Ma, A. (2014). HIV prevention interventions with adolescents: Innovations and challenges in partnerships across the integrated transitions model. In S. D. Rhodes (Ed.), *Innovation in HIV prevention research and practice through community engagement* (pp. 77–104). New York: Springer.

Thompson, W. M., Berry, D., & Hu, J. (2013). A church-based intervention to change attitudes about physical activity among black adolescent girls: A feasibility study. *Public Health Nursing, 30*(3), 221–230. https://doi.org/10.1111/phn.12009.

Torrence, W. A., & Guidry, J. J. (2007). An initiative for the development of a rural church-based adolescent sexuality education intervention. *American Journal of Health Education, 38*(3), 172–174. https://doi.org/10.1080/19325037.2007.10598965.

Trinitapoli, J., Ellison, C. G., & Boardman, J. D. (2009). US religious congregations and the sponsorship of health-related programs. *Social Science and Medicine, 68*(12), 2231–2239. https://doi.org/10.1016/j.socscimed.2009.03.036.

Trost, S. G., Tang, R., & Loprinzi, P. D. (2009). Feasibility and efficacy of a church-based intervention to promote physical activity in children. *Journal of Physical Activity & Health, 6*(6), 741–749. https://doi.org/10.1123/jpah.6.6.741.

Vaughan, E. L., de Dios, M. A., Steinfeldt, J. A., & Kratz, L. M. (2011). Religiosity, alcohol use attitudes, and alcohol use in a national sample of adolescents. *Psychology of Addictive Behaviors, 25*(3), 547–553. https://doi.org/10.1037/a0024660.

Wachholtz, A. B., & Austin, E. T. (2013). Contemporary spiritual meditation: Practices and outcomes. In K. I. Pargament, J. J. Exline, & J. W. Jones (Eds.), *APA handbook of psychology, religion, and spirituality (Vol 1): Context, theory, and research* (pp. 311–327). Washington, DC: American Psychological Association. https://doi.org/10.1037/14045-017.

Wachholtz, A. B., Malone, C. D., & Pargament, K. I. (2017). Effect of different meditation types on migraine headache medication use. *Behavioral Medicine, 43*(1), 1–8. https://doi.org/10.1080/08964289.2015.1024601.

Waters, L., Barsky, A., Ridd, A., & Allen, K. (2015). Contemplative education: A systematic, evidence-based review of the effect of meditation interventions in schools. *Educational Psychology Review, 27*(1), 103–134. https://doi.org/10.1007/s10648-014-9258-2.

Weeks, F. H., Powell, T. W., Illangasekare, S., Rice, E., Wilson, J., Hickman, D., et al. (2016). Bringing evidence-based sexual health programs to adolescents in black churches. *Health Education and Behavior, 43*(6), 699–704. https://doi.org/10.1177/1090198116633459.

Williams, T. T., Griffith, D. M., Pichon, L. C., Campbell, B., Allen, J. O., & Sanchez, J. C. (2011). Involving faith-based organizations in adolescent HIV prevention. *Progress in Community Health Partnerships: Research, Education, and Action, 5*(4), 425–431.

Wong, Y. J., Rew, L., & Slaikeu, K. D. (2006). A systematic review of recent research on adolescent religiosity/spirituality and mental health. *Issues in Mental Health Nursing, 27*(2), 161–183. https://doi.org/10.1080/01612840500436941.

Yeung, J. W. K., Chan, Y.-C., & Lee, B. L. K. (2009). Youth religiosity and substance use: A meta-analysis from 1995 to 2007. *Psychological Reports, 105*(1), 255–266. https://doi.org/10.2466/PR0.105.1.255-266.

Yonker, J. E., Schnabelrauch, C. A., & DeHaan, L. G. (2012). The relationship between spirituality and religiosity on psychological outcomes in adolescents and emerging adults: A meta-analytic review. *Journal of Adolescence, 35*(2), 299–314. https://doi.org/10.1016/j.adolescence.2011.08.010.

Zoogman, S., Goldberg, S. B., Hoyt, W. T., & Miller, L. (2015). Mindfulness interventions with youth: A meta-analysis. *Mindfulness, 6*(2), 290–302. https://doi.org/10.1007/s12671-013-0260-4.

Health Policy and Management, Religion, and Spirituality

Check for updates

Doug Oman and Timothy T. Brown

Abstract This chapter reviews theories and empirical evidence on relations between religion and spirituality (R/S) and variables of interest to health policy and management, a public health subfield of concentration for about one-fifth of public health students nationwide. R/S factors may affect health through pathways including health behaviors, social support, psychological states, and religious/spiritual coping, either favorably or adversely.

Spiritual care is an emerging topic in many national healthcare systems including the UK, Australia, and the US, where a capacity for spiritual assessment is mandatory for many healthcare organizations. Overall, access to healthcare is often enhanced by R/S-healthcare partnerships, although inclusion of some services remains contested. Apart from some distinctive religious or cultural groups, R/S is most commonly linked to higher rates of immunization, screening, and adherence to treatment for many diseases. Mixed associations have been observed between R/S factors and utilization of reproductive health services, dementia care, mental health care for schizophrenia, and treatment for sickle cell disease. Several studies suggest that engaging in meditation may be cost-effective for enhancing quality of life, reducing overall medical expenses, and treating medically acute respiratory infections. Published resources, including self-study materials, support professional training in R/S-health issues, skills, and related legal and ethical issues. Studied outcomes from faith-based social services include criminal recidivism, substance abuse, education, employment, wages, and psychosocial skills, with most relationships being favorable.

This chapter is one of thirteen reviews in this volume providing a public health perspective on the empirical evidence relating R/S to physical and mental health.

Keywords Religion · Spirituality · Public health · Ethics · Health services · Healthcare access · Healthcare utilization · Cost-effectiveness analysis · Immunization · Treatment adherence

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About one-fifth of US-based public health students are enrolled in a group of programs related to health policy or to the management of health services, collectively sometimes called "health services administration" (see Table 1, chapter "Reviewing Religion/Spirituality Evidence from a Public Health Perspective: Introduction," this volume). Programs of this type may also focus on related tasks such as hospital administration, health services research, health law, and evaluation research. The relevance of R/S factors to health policy and management – the focus of a small emerging literature – is a natural corollary from the relevance of R/S factors to healthcare *practice*, as reviewed elsewhere in this volume (e.g., chapters "Public Health Education, Promotion, and Intervention: Relevance of Religion and Spirituality", and "Clinical Practice, Religion, and Spirituality").

There are many pathways through which R/S factors might affect outcomes of interest to health managers and policy-makers. The generic mediation model described elsewhere in this volume identifies several pathways through which R/S factors may affect mental and physical health status outcomes (e.g., pathways including health behaviors, social support, psychological states, and coping – see chapter "Model of Individual Health Effects from Religion/Spirituality: Supporting Evidence", this volume). Such pathways and outcomes are closely related to variables of major interest to healthcare policy-makers and managers, such as utilization of screening tests and other preventive measures, as well as average annual healthcare costs per patient. The generic model suggests that R/S may often be related to these variables in favorable ways on both individual and community levels – for example, R/S teachings about stewardship of the body may enhance motivation to utilize health services.

However, R/S may also at times impede these generic salutary processes or cause other negative effects on conventionally measured health policy outcomes, such as utilization and access. For example, on the individual level, various R/S traditions may encourage interpretations of modesty that impede female patients from receiving some types of services from male healthcare providers. On the community level, R/S groups may advocate for conceptions of healthcare that result in restrictions on access to certain services, such as contraception and abortion. Phenomena of negative R/S effects have also been noted elsewhere in this volume, where it has been suggested that religious traditions may at times be in a state of *dynamic adjustment* to changing sociocultural and technological conditions (e.g., see chapters "Social and Community-Level Factors in Health Effects from Religion/Spirituality", "Environmental Health Sciences, Religion, and Spirituality", and "Questions on Assessing the Evidence Linking Religion/Spirituality to Health", this volume).

The following review is structured into two major sections, the first focusing on health system policy, and the second on healthcare management. Such a division is partly arbitrary and reflects perceived degree of prima facie relevance rather than an airtight division, because policy-making and management are interrelated areas of expertise (Remme et al. 2010). Most topics reviewed here possess relevance to both fields of work.

1 Policy

Health policy may be understood as referring to "decisions, plans, and actions that are undertaken to achieve specific healthcare goals within a society" (WHO 2013). Around the world, common goals of health policy-making include attempts to expand a national population's access to high-quality healthcare, to ensure effective utilization, and to manage and reduce cost. Underlying all efforts to attain such goals is a society's understanding of what constitutes legitimate and worthwhile healthcare – what might be called the scope and content of healthcare, which is sometimes a source of disagreement *within* societies. R/S factors are relevant to all four of these concerns: Scope, access, utilization, and cost, which we now examine in turn.

1.1 Policy: Scope and Content of Healthcare

Religious/spiritual communities and modern secularly-organized healthcare systems are often not fully aligned on their views of the legitimate scope of healthcare. R/S influences have operated both to expand and restrict the scope of what is recognized as healthcare. In this subsection we examine the recently heightened sensitivity towards and acknowledgement of R/S factors in healthcare systems, as well as the continued contestation of whether healthcare systems should include specific types of controversial services, such as contraception and abortion.

National Healthcare Policies and Systemic Provision of Spiritual Care Most if not all premodern approaches to healthcare affirmed a close connection between spiritual factors and physical and mental health. In contrast – and in the words of three medical educators –for much of its history, modern medicine has been "shorn of every vestige of mystery, faith, or moral portent, [leaving it] actually an aberration in the world scene" (Barnard et al. 1995, p. 807). In certain limited respects, however, modern healthcare systems in the past two decades have made major progress in re-incorporating an awareness of R/S factors, especially with regard to their subjective importance for patients. These changes have occurred in slightly different ways in different national healthcare systems, and several relevant reviews have been published (e.g., Pearce 2013; Rumbold et al. 2012).

Rumbold et al. (2012) have described and compared the role of R/S in healthcare systems in the US, the UK, and Australia. They note that in all three systems, initial interest in spiritual care emerged in palliative care, now supported by networks of practitioners and academics, and a much broader "groundswell of interest" (p. 387). Each national system has its distinctive features (e.g., centralized in the UK, market-driven in the US). These features have different strengths and weaknesses, and the different systems and networks of interested professionals are beginning to learn from each other. Rumbold et al. suggest that spiritual care holds wider implications for healthcare systems, concluding that

> Spiritual care.… provides specific strategies for grounding the aspirational values expressed in current health policy (person-centered care etc) that as yet lack consistent implementation. It compensates for the contracting [manager-centered] approaches that translated the scientific discourse of the health professions into actions that marginalized or neglected the art of care. It re-establishes values at the centre of care. In all these respects it can be seen to make a constructive contribution to contemporary health policy. (Rumbold et al. 2012, p. 388)

Similarly, a recent US-based review by Pearce (2013) described a variety of roles of R/S that are inevitable, necessary or appropriate. These include R/S as a coping factor, its role in medical decision-making and adherence, expectations by patients that physicians will address R/S issues, and the existence of R/S needs among both patients and providers. Pearce reviews best practices for spiritual history-taking, R/S interventions for patients, and R/S interventions for providers. Last but not least, integrating R/S and healthcare

> is relevant and important because numerous medical guidelines, regulations, codes of ethics, and criteria for institutional accreditation… now require health care providers to address patients' spirituality and spiritual needs. (Pearce 2013, p. 530)

Pearce cites codes or guidelines that include those of the Institute of Medicine, National Hospice and Palliative Care Organization, International Council of Nurses; and the Joint Commission on Accreditation of Healthcare Organizations (see also chapter on "Clinical Practice, Religion, and Spirituality", this volume).

Debates on Legitimate Scope of Healthcare Increased incorporation of spiritual care into healthcare systems represents a noteworthy step towards greater alignment between R/S and health system views of healthcare. However, as noted above, various types of philosophical non-alignment continue to exist. Perhaps most notable are substantial and persisting differences with regard to the ethical legitimacy of various services related to human reproduction or its control, such as the provision of contraceptives and abortion. Views have also differed with regard to procedures such as euthanasia. We will consider these issues in greater detail below in the subsection entitled "Access." It should be remembered that views differ regarding whether these are primarily issues of access to legitimate healthcare procedures, or primarily issues of resistance to activities deemed immoral.

1.2   Policy: Access to Healthcare

Although access to healthcare may be viewed dichotomously as either available or unavailable, few barriers to care are absolute, and the professional literature often conceives access to healthcare as a matter of degree that may be affected by numerous potential impediments and facilitators (e.g., Levesque et al. 2013). Access to healthcare that makes possible healthcare utilization is sometimes characterized as "realized access" (Levesque et al. 2013, p. 19). Literature on these two interrelated topics is examined in the present subsection focused on access, and the following subsection focused on utilization.

Healthcare Partnerships with Religious Organizations Recent decades have seen a steady increase in recognition by health policymakers of the value of partnerships with religious organizations. Such recognition is gaining both in the United States and internationally, including in the developing world. Such partnerships can facilitate access by populations that otherwise might be unaware of how to access modern healthcare systems, and can also guide policy-makers in understanding the perceptions and needs of such populations.

In the US, increasingly sophisticated partnering models, involving carefully structured divisions of responsibility at various stages of illness and care trajectories, have been implemented in North Carolina and in Memphis, Tennessee (see Cutts 2011; Cutts and King 2016; for further information see Cutts and Gunderson in this volume, chapter "Implications for Public Health Systems and Clinical Practitioners: Strengths of Congregations, Religious Health Assets and Leading Causes of Life").

In many parts of the world, religious organizations may be responsible for delivering large fractions of healthcare – estimated nearly two decades ago to be between 40% and 50% in many parts of sub-Saharan Africa (Green et al. 2002). Healthcare activities by religious communities may be highly localized and poorly understood by outsiders, and African health professionals have recently developed techniques for conceptualizing and systematically mapping even highly localized "religious health assets," finding evidence for an unsuspected pervasiveness indicating that such religious health assets "could and should be more effectively mobilized and linked for scale up to universal access" (ARHAP 2006, October, p. 2). Sub-Saharan African evidence reveals that faith-based healthcare providers help expand the reach of healthcare systems by disproportionately serving the poorest population sectors (Olivier et al. 2015). Further discussion of both US and African work in is available elsewhere in this volume (see chapter on "International and Global Perspectives on Spirituality, Religion, and Public Health").

Religious Resistance to Specific Services Religion and spirituality may also affect access to healthcare through resistance to the delivery of particular services, such as contraception, abortion or (where legal) euthanasia. Such resistance may occur at individual, organizational, and political/systemic levels. On the individual level, varying proportions of health professionals in the US and elsewhere do not want to administer some of the contested procedures. Some professionals also want to avoid giving referrals to where such procedures can be obtained. Provider refusals to participate in such procedures are often called "conscientious objection," which may arise from a variety of religious and non-religious motivations (Chavkin et al. 2013). Religious views, even regarding controversial issues such as abortion, are more diverse than is commonly supposed (e.g., Maguire 2001). Nonetheless, surveys in the US and Europe have found links between religion and higher support for various types of conscientious objection among samples of healthcare providers that include general practitioners in the UK, OB/GYNs and midwives in Sweden and Denmark, OB/GYNs in New York, nurses in Idaho, pharmacists in Texas, and medical students in Norway (see Chavkin et al. 2013; Nordstrand et al. 2014; see also Peragallo and Thorp 2017). Especially when common in a local community,

such conscientious refusals may generate "institutional-level implications" that adversely affect access, such as scheduling problems and delays for patients, or failure to offer certain procedures such as abortion (Chavkin et al. 2013, p. S44).

Organizations may also resist provision of certain procedures, adversely affecting access, even when providers are willing to offer them. This has occurred in hospitals in Poland and Slovakia (Chavkin et al. 2013, p. S44). More broadly, many religiously affiliated hospitals worldwide, most prominently Roman Catholic hospitals, may refuse to offer certain reproductive health services. Objection by *non-healthcare organizations* to specific services is also an important phenomenon in the United States, because many people obtain health insurance through their employers. More specifically, the US Supreme Court's 2014 *Hobby Lobby* ruling, by a 5–4 split decision, upheld the right of employers to receive a religious exemption from their obligation under the Affordable Care Act to offer their employees insurance that covers contraceptive services (Cohen et al. 2014). Of course, religion may also affect the legal environment itself in ways that affect access to services – for example, evidence suggests that a stronger presence of Roman Catholicism in a country is associated with less availability of abortion services (Minkenberg 2002), although political opposition to various types of reproductive services has historically been present in a wide range of religious traditions (Gaydos and Page 2014).

Such organizational stances regarding access restrictions cannot be interpreted as necessarily representing the views of the rank and file members of these religious groups, however, as was documented in a recent nationally representative survey of US women. The survey reported that women who were religiously affiliated or more frequently attended religious services were indeed more likely to oppose provision of contraception and abortion services, and more likely to support employer exemptions from paying for such services. However, support for contraceptive services and employer non-exemption was high even among women who were religiously affiliated (e.g., 45%–63% support for contraceptive services among members of all major denominational categories) (Patton et al. 2015).

1.3 Policy: Utilization of Health Services

Health Service Utilization: Immunization, Screening and Disease Detection Koenig et al. (2012) have identified studies reporting associations between R/S and various dimensions of health service utilization related to disease prevention and adherence to treatment. Evidence reviewed elsewhere suggests that apart from certain exceptional religious groups, R/S factors are positively associated with obtaining immunizations (see chapter on "Infectious Diseases, Religion, and Spirituality", this volume). In addition, Koenig et al. (2012, pp. 562–567, 906–911), identified 44 studies that had examined relations between R/S factors and screening, of which 28 (64%) reported positive relationships and 8 (18%) reported negative relationships (p. 564). Several studies reporting positive relationships employed US nationally representative samples and multiple adjustments. For example, Benjamins and Brown

(2004) prospectively studied a nationally representative sample of older US adults (n = 6055). After controlling for demographics, socioeconomic status, and physical and mental health, respondents who indicated at baseline that religion was very important to them were significantly more likely in the next 2 years to obtain cholesterol screening (odds ratio [OR] = 1.76), PAP smear (OR = 2.04), and prostate screening (OR = 1.76), compared to those indicating that religion was not important.

In another study, Benjamins (2007) examined a random sample of community-dwelling adults in Mexico (n = 9890). In analyses adjusted for demographics, health status, and access to healthcare, she found that respondents who said that religion was very important were significantly more likely after 2 years to have had blood pressure screening (OR = 1.60, 95%CI = 1.28–2.00) and cholesterol screening (OR = 1.35, 95%CI = 1.08–1.70), although there was no difference in diabetes screening. In contrast, in an unfavorable finding, Azaiza and Cohen (2006) examined a random sample of Arab women in Israel (n = 528), finding that secular women were significantly more likely (OR = 1.98, 95%CI = 1.29–2.14) to obtain breast cancer screenings, but not mammograms (OR = 0.64, 95%CI = 0.28–1.46), than religious women. The authors noted that clinical breast examination "involves an invasion of a woman's privacy and is usually performed by a male physician (unlike mammography, usually administered by female technicians) [and] thus causes greater feelings of embarrassment, which might explain why religious women avoid it more than mammography" (p. 527). Somewhat similarly, Hall et al.'s (2012, p. 745) analysis of a US nationally representative sample of young women aged 15–24 (n = 4421) reported that frequent attenders at religious services were less likely to use "routine gynecologic services (Pap smear screening, pelvic examinations)," although the explanation for this difference was unclear. Some possible explanations may involve perceptions that such examinations are not needed when women are not sexually active.

Health Service Utilization: Adherence to Treatment Koenig et al. (2012, pp. 569–572, 913–916), found that degree of R/S and treatment adherence was examined in 22 post-2000 studies, of which 11 (50%) reported favorable associations, and three (14%) reported unfavorable associations (p. 570; others were nonsignificant or mixed). Some of these studies examined links with substance abuse, where evidence reveals primarily favorable associations (5 studies; see also chapter entitled "Model of Individual Health Effects from Religion/Spirituality: Supporting Evidence", this volume). Several studies have also examined links between R/S and adherence to treatment for infections, revealing primarily favorable associations (8 studies, see chapter "Infectious Diseases, Religion, and Spirituality", this volume). A recent systematic review of US-based HIV studies (k = 33) revealed largely favorable associations, supported by findings from at least a half-dozen separate studies, linking the R/S dimensions of private religious practices, positive R/S coping, and spiritual meaning, with better HIV treatment adherence and/or outcomes (Kendrick 2017, Table 2).

Other types of adherence, such as to cardiovascular disease treatment regimens, have also been studied, revealing mixed but primarily favorable patterns of association with degree of R/S. For example, among favorable findings, Park et al. (2008)

studied adherence to medical advice by congestive heart failure (CHF) patients in Ohio (n = 202). Significant favorable cross-sectional associations were observed between several R/S dimensions and adherence to treatment recommendations pertaining to diet, smoking and alcohol avoidance, and CHF-related behaviors including reporting new symptoms, exercising, taking medication, and managing stress. After controlling for age, gender, race, baseline adherence, and other religious measures, baseline religious commitment predicted better adherence 2 years later to CHF-specific treatment recommendations. Similarly, Koenig et al. (1998) studied older adults diagnosed with high blood pressure (n = 747), finding significantly higher rates of taking prescribed medications by those who attended worship services frequently (85% versus 80%, p < 0.05), after adjusting for demographics, physical functioning, and health behaviors. In another example, Harris et al. (1995) studied heart transplant patients (n = 40), finding less reported difficulty in adhering to medical regimens among those who engaged in prayer or had a collaborative R/S coping style.

However, unfavorable associations have also emerged, as in a study of hypertensive patients in Ghana (n = 400, 90% Christian, 5% Muslim). In this study, Kretchy et al. (2013) reported that high adherence to medication was infrequent overall (27/400 or 7%), and was predicted by *lower* levels of spirituality (OR = 2.68, p < 0.05). Also on the unfavorable side, Sivan et al. (2004) studied adherence by Jewish parents of newborn infants in Israel (n = 608) to medical recommendations on how to avoid Sudden Infant Death Syndrome (SIDS), finding significantly less likelihood of adherence among parents who were orthodox or ultra-orthodox (e.g., at 2 months of age, 20% non-adherence among nonreligious and traditional versus 44% non-adherence among ultra-orthodox). The authors suggested that "the explanation should be looked for in the way more religious people accept and trust information that comes from non-religious services" (p. 537).

Psychological mediators of adherence have occasionally been probed. In an Ohio-based study, Grossoehme et al. (2012) studied parents (n = 28) of children with cystic fibrosis. They found that perceived sanctification of the body and collaborative religious coping styles were significantly associated with predictors of adherence that included self-efficacy for adherence and belief in the utility of treatment. Religious tradition and denomination were not reported.

Finally, a systematic review by Gearing et al. (2011) examined 70 studies of R/S and schizophrenia, finding a small but somewhat inconsistent body of studies (n = 4) linking R/S factors to equal or increased adherence to psychiatric treatment and medications (see also chapter on "Mental Health, Religion, and Spirituality", this volume).

Health Service Utilization: Other Services R/S factors are sometimes associated in positive or negative ways with other types of utilization of health services. For example, by 2010, the "emerging field" of R/S and reproductive health had produced nearly 400 publications in refereed journals (Gaydos et al. 2010; see chapter on "Maternal/Child Health, Religion, and Spirituality", this volume). Of these, a small fraction has focused on R/S and reproductive health service utilization. An example is Greil et al.'s (2010) study of 2183 infertile women in the United States, which reported an "indirect and complex relationship" – no direct relationship, but religiosity was associated with greater belief in the importance of motherhood,

which in turn was associated with increased likelihood of helpseeking for infertility. Religiosity was also associated with greater ethical concerns about infertility treatment, which were associated with decreased likelihood of helpseeking (see also more recent research by Burdette et al. 2014). The aforementioned US national study by Hall et al. (2012) found less utilization of sexual and reproductive health services, such as contraception and testing/treatment of sexually transmitted infections, among women with frequent religious participation, regardless of sexual experience. In a developing country, Gyimah et al. (2006) reported that Muslim women were less likely than Christian women to use reproductive health services, even after demographic adjustments.

R/S-utilization relationships have also been investigated in relation to mental health (see chapter "Mental Health, Religion, and Spirituality", this volume). A systematic review by Smolak et al. (2013) identified 10 studies that investigated perceptions by family, community, or professionals of useful sources of help for individuals suffering from schizophrenia. It reported that "individuals often sought the help of traditional/spiritual healers before seeking help of mental health professionals" (p. 447). A systematic review of the impact of religion on dementia care by Regan et al. (2013) reported that while religion can assist with the coping process, it was also associated with reluctance to seek professional dementia care, partly due to fear of cultural insensitivity towards religious behavior.

R/S relations with utilization of other types of conditions have also been reported. An example is a study by Bediako et al. (2011) of US adults with sickle cell disease (n = 95). Participants who used higher levels of positive religious coping reported nearly 3 fewer hospital admissions per year (M = 1.29 versus 4.23, p < 0.05 in multiple regressions).

1.4 Policy: Cost of Health Services

R/S-Related Costs and Savings Health-related policy and management choices often imply a complex set of costs and benefits for a variety of actors, including patient groups, the general public, and healthcare professionals and organizations. Many health-related choice alternatives have been evaluated for their economic impacts. Consolidated reporting standards for such health economic analyses have been published (e.g., Husereau et al. 2013), and health economic evaluations have been applied to a wide range of mental health care interventions and complementary and alternative therapies, as reflected in systematic reviews (e.g., Hamberg-van Reenen et al. 2012; Ostermann et al. 2011; Zechmeister et al. 2008).

Health economic evaluations could potentially be applied to many R/S-oriented interventions that have been developed – in this volume see chapters "Public Health Education, Promotion, and Intervention: Relevance of Religion and Spirituality", "Mental Health, Religion, and Spirituality", and "Clinical Practice, Religion, and Spirituality". However, few health economic evaluations appear to have examined

either R/S interventions or interventions reflecting other dimensions of cultural tailoring. An empirical case for the added value of R/S components in psychotherapy is still only emergent (see Worthington et al. 2011). Perhaps for this reason, health economic evaluations of R/S factors and interventions are rare. In what follows, we describe an analysis by Hall (2006) that suggests the potential magnitude of benefits and cost-savings from R/S factors, as well as several cost-effectiveness studies of meditation, and a review of research on multi-disciplinary care teams.

In what he intended as a provocative "thought experiment," Hall (2006, p. 104) offered an analysis comparing the cost-effectiveness of religious attendance with statin-type lipid-lowering agents commonly prescribed to heart disease patients. Using actuarial tables and published odds ratios for worship attendance and mortality, Hall estimated costs per additional life-year of $4000–$14,000 for statin-type agents and $3000–$10,000 for regular religious attendance, suggesting that "religious attendance may be more cost-effective than statins" (p. 103). Hall acknowledged theological and ethical nonequivalence, remarking that "it is not at all clear that 'instrumental faith' is sufficiently genuine to accrue the observed reduction in mortality" (p. 107), but argued that the comparability of this R/S factor with a widely accepted therapy underscored that it would be "fruitful to invest the necessary resources to better understand the nature and relevance of the associations between religious attendance and health" (p. 108).

Some studies have also investigated the cost-effectiveness of meditation. The earliest studies used quasi-experimental designs to evaluate impacts on healthcare expenditures from practicing Transcendental Meditation. Three contributions to this literature are from Robert Herron and colleagues, with each publication relying on the same sample of meditators and demographically matched non-meditators, both residing in the Canadian province of Quebec (n = 2836). The government supplied medical expense data from 1981 to 1994. In the most recent publication that analyzed these data, Herron (2011) compared annual healthcare expenditures in the highest-spending 10% of each group. Expenses were similar between meditators and non-meditators before the meditators began meditating. Control group expenses were essentially unchanged 5 years later, but the meditators' costs had been reduced by 28% (p < 0.05). Similarly favorable findings were reported in earlier comparisons that included the lower-expenditure 90% of the groups, and that focused on individuals of age 65 or older (Herron and Hillis 2000; Herron and Cavanaugh 2005).

Several studies, including at least three randomized trials, have also evaluated the economic effects of modernized mindfulness-based interventions, which are of uncertain spiritual classification (e.g., whether R/S versus secular classification – see chapter entitled "Model of Individual Health Effects from Religion/Spirituality: Supporting Evidence", this volume, section on "Borderline Spiritual Constructs"). Addressing a widely prevalent illness in society, the potential economic savings related to acute respiratory infection (ARI, e.g., common colds and influenza) were investigated by Rakel et al. (2013), based on a randomized trial of mindfulness meditation among adults over 50 years old (n = 154). Conservative estimates of ARI-related costs were based on medications, clinic visits, and missed work days, but did not take into account additional savings from reduced losses in productivity. Mean

annual ARI-related costs were lower in the meditation group ($65, 95% CI: $34–$104) than the controls ($214, 95% CI $105–$358), which would correspond to a US nationwide general-population savings of approximately $28 billion annually. The authors note that the $450 per individual cost of the meditation intervention "would negate the initial [conservatively estimated] cost savings for ARI but not the potential long-term benefits that would accrue… these interventions would be undervalued if we limited their benefit to just one ARI season. The challenge is knowing where education fades and when there is a need to reinvest to encourage these behaviours" (p. 395).

Based on another randomized trial, Lengacher et al (2015) estimated costs per additional quality-adjusted life year (QALY) from a mindfulness intervention with breast cancer patients (n = 96). Compared to usual care, an additional expense of less than $1300 ($666 for providers and $592 for patients out of pocket) resulted in an estimated lifetime increase of 1.95 QALYs, a relatively low expense in comparison to other published breast cancer interventions.

A third randomized trial by van Ravesteijn et al. (2013) estimated the cost-savings from using mindfulness-based cognitive therapy to treat medically unexplained symptoms (MUS), which account for approximately one-sixth (16%) of the US healthcare budget. Compared to enhanced usual care, the total costs were not significantly different, but the mindfulness intervention brought about "a shift in the use of healthcare resources as mental health care costs were higher and hospital care costs lower" (p. 197). In addition, a pre/post study by Singh et al. (2008) computed cost-savings from a mindfulness-based intervention for physical aggression in offenders with mild intellectual disabilities (n = 6). Comparing the 12 months prior to and following the intervention revealed a 95.7% reduction, from $51,508 to $2244, in staff absenteeism and medical costs attributable to incidents of offender physical aggression. Another pre-post study by Singh et al. (2014) studied a 7-day intensive Mindfulness-Based Positive Behavior Support training for professional staff (n = 9) working with the developmentally disabled. Compared to a 40-week pre-training period, the 40-week post-training period yielded an 87% cost reduction (from $152 K to $18.6 K) in expenses for staff injuries and resulting lost days of work, medical costs, accident compensation costs, and cost of temporary or replacement staff. Finally, a pre/post study by Roth and Stanley (2002) found reduced healthcare utilization by inner-city medical patients (n = 47) in the year following training in mindfulness meditation, compared to the year before.

For generations, chaplains have provided spiritual care at hospitals, and the work and effects of chaplaincy has been the focus of increasing empirical research (e.g., Candy et al. 2012; Iler et al. 2001; see also chapter on "Clinical Practice, Religion, and Spirituality", this volume). Studies that attempt to quantify the impact of chaplains' work in terms of costs and benefits are exceedingly rare, perhaps in part because of the difficulties of applying economic rationalism (e.g., Newell and Carey 2000). However, at least two studies have evaluated the cost-efficiency of multidisciplinary care teams that included chaplains, finding mixed results (Ke et al. 2013). Recently, Swift et al. (2012) provided an overview of chaplaincy services across the US, UK, and Australia. They noted a variety of functions performed by

chaplains, including being "tasked with discerning spiritual needs as they are encountered and shaping with the patient a response that may not sit within a single tradition," being "frequently required to teach the spiritual care elements of training for a host of other health professions" (p. 188), and engaging in a "wide-ranging presence throughout the organization, including attendance during the night and on holidays, leading to a potentially impressive level of awareness about how the hospital is functioning [that] supplies an important narrative to accompany performance data and broaden the management's understanding of the organization as a whole" (p. 188).

2   Management

R/S factors may affect the day-to-day operations of healthcare organizations in a variety of ways. In this section, we review major types of available information in the categories of (i) acquiring and (ii) providing R/S-related professional training, dealing with R/S-related ethical and legal issues. Finally, because these represent a large part of the service provision sector in most countries, we examine (iii) information on best practices for managing faith-based health and social service organizations.

Professional Training in R/S-Health   The growing recognition of the importance of R/S factors in health and healthcare has been accompanied by increased interest in how to provide adequate training. Various published resources are available. One systematic review by Paal et al. (2015) identified 46 studies of spiritual care training across diverse professional settings, including multi-professional settings (k = 9), nursing (k = 21), pastoral care (k = 6), and medical professionals and students (k = 10), Most studies were pre/post, with outcomes demonstrating training benefits for integrating spirituality in clinical practice and patient communication, and some evidence also suggesting that "without attending to one's own beliefs and needs, addressing spirituality in patients will not be forthcoming" (p. 28).The authors argue that on an organizational level, "a successful integration process needs role models and clearly identified mentors who accompany the integration process" (p. 28).

Other reviews have often focused on specific professions, with Koenig et al. (2012, p. 942) listing nine publications from 2000 to 2007 on R/S in medical or psychiatric education. Some investigators have examined the efficacy of self-study programs for clinicians to learn about R/S (Taylor et al. 2009), or have conducted reviews of R/S in education of clinicians (e.g., nursing undergraduates, Cooper et al. 2013). Sorsdahl et al. (2009) reported a Cochrane Collaboration systematic review of interventions for educating traditional healers about STDs and HIV medicine. Finding only two published reviews, they concluded that more research, using higher quality designs, was needed. A systematic review by Lewinson et al. (2015) identified 28 studies relevant to training for nurses in R/S-health issues, finding examples of innovation and major themes of spiritual awareness, spiritual assessment, and spiritual competence. One study of 250 baccalaureate nursing education programs found that most (82%) integrated spirituality throughout the curriculum,

with some (16%) offering an elective spiritual care course (Lemmer 2002). A systematic review by Jafari (2016, p. 264) identified six empirical studies of R/S training in accredited clinical/counselling psychology programs, finding that training was predominantly occurring in supervisory settings, "outside of curriculum-based contexts."

Ethical and Legal Issues Addressing R/S in healthcare requires attending to both ethical and legal issues. For example, healthcare administrators must ensure that their organizations comply with relevant laws and offer appropriate training to support ethical conduct by clinicians and others responsible for patient care. Furthermore, at both the organizational and societal levels, policies that support skillful integration of R/S into healthcare can be developed by health policy professionals.

Legal and ethical issues are closely interrelated, and ethical issues are mentioned, sometimes briefly, in many of the reviews in this volume (see overview in this volume's chapter "Questions on Assessing the Evidence Linking Religion/Spirituality to Health", section on "Q7: What about Ethics?"). Compared to ethical issues, legal issues related to R/S and healthcare are the focus of a comparatively smaller number of publications. Examples of publications that emphasize legal issues, R/S, and healthcare include a practitioner-focused review of legal issues by Taylor (2012), emphasizing concerns affecting nurses. She reviews relevant laws (e.g., First Amendment, Title VII of the 1964 Civil Rights Act, Religious Freedom Restoration Act) and their application to several common issues (e.g., "Can a nurse ask patients about their religiosity?", "Can a nurse wear religious clothing while caring for patients?", pp. 66, 67). Many issues of managing employee R/S expression, including employee R/S diversity, were recently discussed by Benefiel et al. (2014). They contrast a "legalistic approach" deemed less effective, with a "non-interventionist approach" that includes such elements as providing organizational space and employing a "personal days" policy to accommodate R/S activities and needs (p. 182).

Warnock (2009) also discusses legal issues related to R/S tailoring of healthcare. She suggests that there may be "a new ethical dilemma [that] stems from a conflict between the First Amendment to the United States Constitution, commonly known as requiring separation of church and state, and the [need for] provision of spiritual care within public healthcare facilities by staff paid with public funds" (p. 470). She describes how this ethical issue or dilemma generated a 2006 lawsuit against the Veterans Administration (VA). While noting that the judge had ruled in favor of the VA, Warnock proposed a "resolution" that involves "allowing patients to define religion and spirituality for themselves and using culture and religion neutral terminology" for spiritual assessments (p. 477).

Managing Faith-Based Service Organizations A literature review by Hong described best practices for managing faith based health and social service organizations (Hong 2012). Best practices were identified in four areas: appropriate staffing, humanized leadership, diversity of funding, and utilization of faith. Hong also offered policy recommendations intended to better serve and protect clients. Several systematic reviews have also examined outcomes from faith-based social services

(see chapter on "Public Health Education, Promotion, and Intervention: Relevance of Religion and Spirituality", this volume). Studied outcomes from faith-based social services include criminal recidivism, substance abuse, education, employment, wages, and psychosocial skills, with most relationships favorable (DeHaven et al. 2004; Ferguson et al. 2007; Hankerson and Weissman 2012; Williams et al. 2011).

3 Summary: Health Policy and Management

Several ideas for application to public health practice are provided in Box 1. In summary, published literature relevant to R/S and health policy and management suggests that

- R/S and national healthcare policies and systems: Spiritual care is an emerging topic in many national healthcare systems in the English-speaking world (US, UK, Australia), and the capacity for spiritual assessment is mandatory for many healthcare organizations in the US (Rumbold et al. 2012);

Box 1: Ideas for Application to Public Health Practice: Health Policy and Management

The theories and evidence reviewed in this chapter suggest diverse practical activities by both health policy-makers and healthcare managers, such as:

✓ Be aware of evidence linking R/S with rates of adherence to treatment that are largely but not entirely higher, including better adherence to treatments for infectious diseases, cardiovascular disease, and substance abuse;

✓ Health policymakers at different levels of government can design and advocate for policies that foster collaborative partnerships between health systems and religious organizations in ways that maximize access, maximize utilization, and minimize cost.

✓ Healthcare managers can seek to ensure that R/S factors are properly and effectively addressed in organizational procedures for intake and interaction with patients, and that their staff is well-educated about the importance of addressing R/S factors.

✓ Healthcare managers can also promote and encourage increased attention to R/S-infused interventions (see chapters "Public Health Education, Promotion, and Intervention: Relevance of Religion and Spirituality", "Mental Health, Religion, and Spirituality", and "Clinical Practice, Religion, and Spirituality", this volume).

Please see chapters in Part II of this volume for in-depth discussion of the relevance of religion and spirituality to applied public health work. See Part I's first chapter for an overview of major application themes.

- Partnerships between healthcare systems and religious organizations are important in both the US and internationally, and can facilitate access and reach of healthcare systems (see chapters "Implications for Public Health Systems and Clinical Practitioners: Strengths of Congregations, Religious Health Assets and Leading Causes of Life", "International and Global Perspectives on Spirituality, Religion, and Public Health");
- Individuals and organizations may differ in their views of the legitimate scope of healthcare on issues such as contraception and abortion, and such views are often associated with R/S engagement, although diverse views often also exist within R/S communities. Such differences may result in restrictive policies or professional "conscientious objection" that affect access to contested services;
- Immunization and screening: R/S tends most commonly to be associated with higher rates of immunization and screening, although unfavorable associations are sometimes found in distinctive religious or cultural groups (Benjamins and Brown 2004; Koenig et al. 2012, pp. 562–567, 906–911);
- Adherence to treatment: Although findings are mixed, R/S is most often favorably associated with better adherence to treatment for conditions that include infectious diseases, cardiovascular disease, schizophrenia, and substance abuse (Koenig et al. 2012, pp. 569–572, 913–916; Park et al. 2008);
- Utilization of other health services: R/S factors may also be associated with higher or lower rates of utilization of other health services, including reproductive health services, dementia care, mental health care for schizophrenia, and treatment for sickle cell disease;
- R/S-related costs and savings: Cost-effectiveness studies of R/S are rare, although several studies suggest that engaging in meditation reduces an individual's overall medical expenses and may be cost-effective for enhancing quality of life, reducing overall medical expenses, and treating medically acute respiratory infections and unexplained symptoms (e.g., Rakel et al. 2013). It has also been argued that attendance at religious services is more cost-effective for preventing heart disease than are statin-type agents (Hall 2006);
- Professional training in R/S-health: A small body of published resources is available, including self-study materials (Koenig et al. 2012, p. 942; Taylor et al. 2009);
- R/S and ethical and legal issues: Legal and ethical issues of addressing R/S in healthcare are intertwined; a few resources focus especially on legal issues (Taylor 2012; Warnock 2009);
- Managing faith-based organizations: Studied outcomes from faith-based social services include criminal recidivism, substance abuse, education, employment, wages, and psychosocial skills, with most relationships favorable (e.g., DeHaven et al. 2004); best practices for managing faith based organizations have been identified (Hong 2012).

References

ARHAP. (2006, October). *Appreciating assets: The contribution of religion to universal access in Africa*. Cape Town: The African Religious Health Assets Program (ARHAP).

Azaiza, F., & Cohen, M. (2006). Health beliefs and rates of breast cancer screening among Arab women. *Journal of Women's Health, 15*(5), 520–530. https://doi.org/10.1089/jwh.2006.15.520.

Barnard, D., Dayringer, R., & Cassel, C. K. (1995). Toward a person-centered medicine: Religious studies in the medical curriculum. *Academic Medicine, 70*(9), 806–813.

Bediako, S. M., Lattimer, L., Haywood, C., Jr., Ratanawongsa, N., Lanzkron, S., & Beach, M. C. (2011). Religious coping and hospital admissions among adults with sickle cell disease. *Journal of Behavioral Medicine, 34*(2), 120–127. https://doi.org/10.1007/s10865-010-9290-8.

Benefiel, M., Fry, L. W., & Geigle, D. (2014). Spirituality and religion in the workplace: History, theory, and research. *Psychology of Religion and Spirituality, 6*(3), 175–187. https://doi.org/10.1037/a0036597.

Benjamins, M. R. (2007). Predictors of preventive health care use among middle-aged and older adults in Mexico: The role of religion. *Journal of Cross-Cultural Gerontology, 22*(2), 221–234. https://doi.org/10.1007/s10823-007-9036-4.

Benjamins, M. R., & Brown, C. (2004). Religion and preventative health care utilization among the elderly. *Social Science and Medicine, 58*(1), 109–118. https://doi.org/10.1016/S0277-9536(03)00152-7.

Burdette, A. M., Haynes, S. H., Hill, T. D., & Bartkowski, J. P. (2014). Religious variations in perceived infertility and inconsistent contraceptive use among unmarried young adults in the United States. *Journal of Adolescent Health, 54*(6), 704–709. https://doi.org/10.1016/j.jadohealth.2013.11.002.

Candy, B., Jones, L., Varagunam, M., Speck, P., Tookman, A., & King, M. (2012). Spiritual and religious interventions for well-being of adults in the terminal phase of disease. *Cochrane Database of Systematic Reviews, 2012*(5), 1–53. https://doi.org/10.1002/14651858.CD007544.pub2.

Chavkin, W., Leitman, L., Polin, K., & for Global Doctors for, C. (2013). Conscientious objection and refusal to provide reproductive healthcare: A white paper examining prevalence, health consequences, and policy responses. *International Journal of Gynecology & Obstetrics, 123*(December Suppl), S41–S56. https://doi.org/10.1016/S0020-7292(13)60002-8.

Cohen, I. G., Lynch, H. F., & Curfman, G. D. (2014). When religious freedom clashes with access to care. *New England Journal of Medicine, 371*(7), 596–599. https://doi.org/10.1056/NEJMp1407965.

Cooper, K. L., Chang, E., Sheehan, A., & Johnson, A. (2013). The impact of spiritual care education upon preparing undergraduate nursing students to provide spiritual care. *Nurse Education Today, 33*(9), 1057–1061. https://doi.org/10.1016/j.nedt.2012.04.005.

Cutts, T. (2011). The Memphis model: ARHAP theory comes to ground in the congregational health network. In J. R. Cochrane, B. Schmid, & T. Cutts (Eds.), *When religion and health align: Mobilizing religious health assets for transformation* (pp. 193–209). Pietermaritzburg: Cluster Publications.

Cutts, T., & King, R. (2016). Community asset mapping: Integrating and engaging community and health systems. In T. F. Cutts & J. R. Cochrane (Eds.), *Stakeholder health: Insights from new systems of health* (pp. 73–95). USA: Stakeholder Health.

DeHaven, M., Hunter, I. B., Wilder, L., Walton, J. W., & Berry, J. (2004). Health programs in faith-based organizations: Are they effective? *American Journal of Public Health, 94*(6), 1030–1036. https://doi.org/10.2105/AJPH.94.6.1030.

Ferguson, K. M., Wu, Q., Spruijt-Metz, D., & Dyrness, G. (2007). Outcomes evaluation in faith-based social services: Are we evaluating faith accurately? *Research on Social Work Practice, 17*(2), 264–276. https://doi.org/10.1177/1049731505283698.

Gaydos, L. M., & Page, P. Z. (2014). Religion and reproductive health. In E. L. Idler (Ed.), *Religion as a social determinant of public health* (pp. 179–202). New York: Oxford University Press.

Gaydos, L. M., Smith, A., Hogue, C. J. R., & Blevins, J. (2010). An emerging field in religion and reproductive health. *Journal of Religion and Health, 49*(4), 473–484. https://doi.org/10.1007/s10943-010-9323-1.

Gearing, R. E., Alonzo, D., Smolak, A., McHugh, K., Harmon, S., & Baldwin, S. (2011). Association of religion with delusions and hallucinations in the context of schizophrenia: Implications for engagement and adherence. *Schizophrenia Research, 126*(1–3), 150–163. https://doi.org/10.1016/j.schres.2010.11.005.

Green, A., Shaw, J., Dimmock, F., & Conn, C. (2002). A shared mission? Changing relationships between government and church health services in Africa. *The International Journal of Health Planning and Management, 17*(4), 333–353. https://doi.org/10.1002/hpm.685.

Greil, A., McQuillan, J., Benjamins, M., Johnson, D. R., Johnson, K. M., & Heinz, C. R. (2010). Specifying the effects of religion on medical helpseeking: The case of infertility. *Social Science and Medicine, 71*(4), 734–742. https://doi.org/10.1016/j.socscimed.2010.04.033.

Grossoehme, D. H., Opipari-Arrigan, L., VanDyke, R., Thurmond, S., & Seid, M. (2012). Relationship of adherence determinants and parental spirituality in cystic fibrosis. *Pediatric Pulmonology, 47*(6), 558–566. https://doi.org/10.1002/ppul.21614.

Gyimah, S. O., Takyi, B. K., & Addai, I. (2006). Challenges to the reproductive-health needs of African women: On religion and maternal health utilization in Ghana. *Social Science and Medicine, 62*(12), 2930–2944. https://doi.org/10.1016/j.socscimed.2005.11.034.

Hall, D. E. (2006). Religious attendance: More cost-effective than lipitor? *Journal of the American Board of Family Medicine, 19*(2), 103–109. https://doi.org/10.3122/jabfm.19.2.103.

Hall, K. S., Moreau, C., & Trussell, J. (2012). Lower use of sexual and reproductive health services among women with frequent religious participation, regardless of sexual experience. *Journal of Women's Health, 21*(7), 739–747. https://doi.org/10.1089/jwh.2011.3356.

Hamberg-van Reenen, H. H., Proper, K. I., & van den Berg, M. (2012). Worksite mental health interventions: A systematic review of economic evaluations. *Occupational and Environmental Medicine, 69*(11), 837–845. https://doi.org/10.1136/oemed-2012-100668.

Hankerson, S. H., & Weissman, M. M. (2012). Church-based health programs for mental disorders among African Americans: A review. *Psychiatric Services, 63*(3), 243–249. https://doi.org/10.1176/appi.ps.201100216.

Harris, R. C., Dew, M. A., Lee, A., Amaya, M., Buches, L., Reetz, D., et al. (1995). The role of religion in heart-transplant recipients' long-term health and well-being. *Journal of Religion and Health, 34*(1), 17–32. https://doi.org/10.1007/BF02248635.

Herron, R. E. (2011). Changes in physician costs among high-cost transcendental meditation practitioners compared with high-cost nonpractitioners over 5 years. *American Journal of Health Promotion, 26*(1), 56–60. https://doi.org/10.4278/ajhp.100729-ARB-258.

Herron, R. E., & Cavanaugh, K. L. (2005). Can the transcendental meditation program reduce the medical expenditures of older people? A longitudinal cost-reduction study in Canada. *Journal of Social Behavior and Personality, 17*(1), 415–442, 591.

Herron, R. E., & Hillis, S. L. (2000). The impact of the transcendental meditation program on government payments to physicians in Quebec: An update. *American Journal of Health Promotion, 14*(5), 284–291. https://doi.org/10.4278/0890-1171-14.5.284.

Hong, Y. J. (2012). Best practices in managing faith-based organizations through charitable choice and faith-based initiatives. *Journal of Social Service Research, 38*(2), 130–143. https://doi.org/10.1080/01488376.2011.615268.

Husereau, D., Drummond, M., Petrou, S., Carswell, C., Moher, D., Greenberg, D., et al. (2013). Consolidated health economic evaluation reporting standards (CHEERS) statement. *BMC Medicine, 11*, 80. https://doi.org/10.1186/1741-7015-11-80.

Iler, W. L., Obenshain, D., & Camac, M. (2001). The impact of daily visits from chaplains on patients with chronic obstructive pulmonary disease (COPD): A pilot study. *Chaplaincy Today, 17*(1), 5–11. https://doi.org/10.1080/10999183.2001.10767153.

Jafari, S. (2016). Religion and spirituality within counselling/clinical psychology training programmes: A systematic review. *British Journal of Guidance & Counselling, 44*(3), 257–267. https://doi.org/10.1080/03069885.2016.1153038.

Ke, K. M., Blazeby, J. M., Strong, S., Carroll, F. E., Ness, A. R., & Hollingworth, W. (2013). Are multidisciplinary teams in secondary care cost-effective? A systematic review of the literature. *Cost Effectiveness and Resource Allocation, 11*(1), 1–13. https://doi.org/10.1186/1478-7547-11-7.

Kendrick, H. M. (2017). Are religion and spirituality barriers or facilitators to treatment for HIV: A systematic review of the literature. *AIDS Care, 29*(1), 1–13. https://doi.org/10.1080/09540121.2016.1201196.

Koenig, H. G., George, L. K., Hays, J. C., Larson, D. B., Cohen, H. J., & Blazer, D. G. (1998). The relationship between religious activities and blood pressure in older adults. *International Journal of Psychiatry in Medicine, 28*(2), 189–213. https://doi.org/10.2190/75JM-J234-5JKN-4DQD.

Koenig, H. G., King, D. E., & Carson, V. B. (2012). *Handbook of religion and health* (2nd ed.). Oxford/New York: Oxford University Press.

Kretchy, I., Owusu-Daaku, F., & Danquah, S. (2013). Spiritual and religious beliefs: Do they matter in the medication adherence behaviour of hypertensive patients? *BioPsychoSocial Medicine, 7*(1), 1–7. https://doi.org/10.1186/1751-0759-7-15.

Lemmer, C. (2002). Teaching the spiritual dimension of nursing care: A survey of U.S. baccalaureate nursing programs. *Journal of Nursing Education, 41*(11), 482–490.

Lengacher, C., Kip, K. E., Reich, R. R., Craig, B. M., Mogos, M., Ramesar, S., et al. (2015). A cost-effective mindfulness stress reduction program: A randomized control trial for breast cancer survivors. *Nursing Economics, 33*(4), 210–218. 232.

Levesque, J.-F., Harris, M. F., & Russell, G. (2013). Patient-centred access to health care: Conceptualising access at the interface of health systems and populations. *International Journal for Equity in Health, 12*(1), 18–26. https://doi.org/10.1186/1475-9276-12-18.

Lewinson, L. P., McSherry, W., & Kevern, P. (2015). Spirituality in pre-registration nurse education and practice: A review of the literature. *Nurse Education Today, 35*(6), 806–814. https://doi.org/10.1016/j.nedt.2015.01.011.

Maguire, D. C. (2001). *Sacred choices: The right to contraception and abortion in ten world religions*. Minneapolis: Fortress Press.

Minkenberg, M. (2002). Religion and public policy. *Comparative Political Studies, 35*(2), 221–247. https://doi.org/10.1177/0010414002035002004.

Newell, C., & Carey, L. B. (2000). Economic rationalism and the cost efficiency of hospital chaplaincy: An Australian study. *Journal of Health Care Chaplaincy, 10*(1), 37–52. https://doi.org/10.1300/J080v10n01_04.

Nordstrand, S. J., Nordstrand, M. A., Nortvedt, P., & Magelssen, M. (2014). Medical students' attitudes towards conscientious objection: A survey. *Journal of Medical Ethics, 40*(9), 609–612. https://doi.org/10.1136/medethics-2013-101482.

Olivier, J., Tsimpo, C., Gemignani, R., Shojo, M., Coulombe, H., Dimmock, F., et al. (2015). Understanding the roles of faith-based health-care providers in Africa: Review of the evidence with a focus on magnitude, reach, cost, and satisfaction. *The Lancet, 386*(10005), 1765–1775. https://doi.org/10.1016/S0140-6736(15)60251-3.

Ostermann, T., Krummenauer, F., Heusser, P., & Boehm, K. (2011). Health economic evaluation in complementary medicine. *Complementary Therapies in Medicine, 19*(6), 289–302. https://doi.org/10.1016/j.ctim.2011.09.002.

Paal, P., Helo, Y., & Frick, E. (2015). Spiritual care training provided to healthcare professionals: A systematic review. *Journal of Pastoral Care & Counseling, 69*(1), 19–30. https://doi.org/10.1177/1542305015572955.

Park, C. L., Moehl, B., Fenster, J. R., Suresh, D. P., & Bliss, D. (2008). Religiousness and treatment adherence in congestive heart failure patients. *Journal of Religion, Spirituality & Aging, 20*(4), 249–266. https://doi.org/10.1080/15528030802232270.

Patton, E. W., Hall, K. S., & Dalton, V. K. (2015). How does religious affiliation affect women's attitudes toward reproductive health policy? Implications for the Affordable Care Act. *Contraception, 91*(6), 513–519. https://doi.org/10.1016/j.contraception.2015.02.012.

Pearce, M. J. (2013). Addressing religion and spirituality in health care systems. In K. I. Pargament, A. Mahoney, & E. P. Shafranske (Eds.), *APA handbook of psychology, religion, and spiritual-*

ity (vol 2): An applied psychology of religion and spirituality (pp. 527–541). Washington, DC: American Psychological Association. https://doi.org/10.1037/14046-027.

Peragallo, R., & Thorp, J. (2017). Religion and spirituality in OBGYN. In M. J. Balboni & J. R. Peteet (Eds.), *Spirituality and religion within the culture of medicine: From evidence to practice* (pp. 15–34). New York: Oxford University Press.

Rakel, D., Mundt, M., Ewers, T., Fortney, L., Zgierska, A., Gassman, M., et al. (2013). Value associated with mindfulness meditation and moderate exercise intervention in acute respiratory infection: The MEPARI study. *Family Practice, 30*(4), 390–397. https://doi.org/10.1093/fampra/cmt008.

Regan, J. L., Bhattacharyya, S., Kevern, P., & Rana, T. (2013). A systematic review of religion and dementia care pathways in black and minority ethnic populations. *Mental Health, Religion & Culture, 16*(1), 1–15. https://doi.org/10.1080/13674676.2011.639751.

Remme, J. H. F., Adam, T., Becerra-Posada, F., D'Arcangues, C., Devlin, M., Gardner, C., et al. (2010). Defining research to improve health systems. *PLoS Medicine, 7*(11), e1001000. https://doi.org/10.1371/journal.pmed.1001000.

Roth, B., & Stanley, T.-W. (2002). Mindfulness-based stress reduction and healthcare utilization in the Inner City: Preliminary findings. *Alternative Therapies in Health and Medicine, 8*(1), 60–66.

Rumbold, B., Cobb, M., & Puchalski, C. M. (2012). Policy. In M. Cobb, C. M. Puchalski, & B. Rumbold (Eds.), *Oxford textbook of spirituality in healthcare* (pp. 383–389). New York: Oxford University Press.

Singh, N. N., Lancioni, G. E., Karazsia, B. T., Myers, R. E., Winton, A. S. W., Latham, L. L., et al. (2014). Effects of training staff in MBPBS on the use of physical restraints, staff stress and turnover, staff and peer injuries, and cost effectiveness in developmental disabilities. *Mindfulness, 6*, 1–12. https://doi.org/10.1007/s12671-014-0369-0.

Singh, N. N., Lancioni, G. E., Winton, A. S. W., Singh, A. N., Adkins, A. D., & Singh, J. (2008). Clinical and benefit-cost outcomes of teaching a mindfulness-based procedure to adult offenders with intellectual disabilities. *Behavior Modification, 32*(5), 622–637. https://doi.org/10.1177/0145445508315854.

Sivan, Y., Reisner, S., Amitai, Y., Wasser, J., Nehama, H., & Tauman, R. (2004). Effect of religious observance on infants' sleep position in the Jewish population. *Journal of Paediatrics and Child Health, 40*(9–10), 534–539. https://doi.org/10.1111/j.1440-1754.2004.00458.x.

Smolak, A., Gearing, R. E., Alonzo, D., Baldwin, S., Harmon, S., & McHugh, K. (2013). Social support and religion: Mental health service use and treatment of schizophrenia. *Community Mental Health Journal, 49*(4), 444–450. https://doi.org/10.1007/s10597-012-9536-8.

Sorsdahl, K., Ipser, J. C., & Stein, D. J. (2009). Interventions for educating traditional healers about STD and HIV medicine. *Cochrane Database of Systematic Reviews*, CD007190, https://doi.org/10.1002/14651858.CD007190.pub2.

Swift, C., Handzo, G., & Cohen, J. (2012). Healthcare chaplaincy. In M. Cobb, C. M. Puchalski, & B. Rumbold (Eds.), *Oxford textbook of spirituality in healthcare* (pp. 185–190). New York: Oxford University Press.

Taylor, E. J. (2012). Legal perspectives. In E. J. Taylor (Ed.), *Religion: A clinical guide for nurses* (pp. 59–73). New York: Springer.

Taylor, E. J., Mamier, I., Bahjri, K., Anton, T., & Petersen, F. (2009). Efficacy of a self-study programme to teach spiritual care. *Journal of Clinical Nursing, 18*(8), 1131–1140. https://doi.org/10.1111/j.1365-2702.2008.02526.x.

van Ravesteijn, H., Grutters, J., olde Hartman, T., Lucassen, P., Bor, H., van Weel, C., et al. (2013). Mindfulness-based cognitive therapy for patients with medically unexplained symptoms: A cost-effectiveness study. *Journal of Psychosomatic Research, 74*(3), 197–205. https://doi.org/10.1016/j.jpsychores.2013.01.001.

Warnock, C. J. P. (2009). Who pays for providing spiritual care in healthcare settings? The ethical dilemma of taxpayers funding holistic healthcare and the first amendment requirement for separation of church and state. *Journal of Religion and Health, 48*(4), 468–481. https://doi.org/10.1007/s10943-008-9208-8.

WHO. (2013, May 10). *Health policy*. http://www.who.int/topics/health_policy/en/. Accessed 25 Sept 2017.

Williams, M. V., Palar, K., & Derose, K. P. (2011). Congregation-based programs to address HIV/ AIDS: Elements of successful implementation. *Journal of Urban Health, 88*(3), 517–532. https://doi.org/10.1007/s11524-010-9526-5.

Worthington, E. L., Hook, J. N., Davis, D. E., & McDaniel, M. A. (2011). Religion and spirituality. *Journal of Clinical Psychology, 67*(2), 204–214. https://doi.org/10.1002/jclp.20760.

Zechmeister, I., Kilian, R., & McDaid, D. (2008). Is it worth investing in mental health promotion and prevention of mental illness? A systematic review of the evidence from economic evaluations. *BMC Public Health, 8*, 20. https://doi.org/10.1186/1471-2458-8-20.

Public Health Education, Promotion, and Intervention: Relevance of Religion and Spirituality

Doug Oman and Linda Neuhauser

Abstract This chapter reviews theories and empirical evidence on the associations between religion and spirituality (R/S) and public health education, promotion, and intervention – the public health subfield concentrations of about one-sixth of public health students nationwide. We discuss literature related to health programming at R/S sites, spiritually tailored treatments in healthcare settings, R/S interventions in workplaces, and meditation and mindfulness as spiritual interventions.

We have found a strong evidence base for positive outcomes from health programs conducted through religious organizations. Such programs have been categorized as faith-based, faith-placed, and collaborative, depending on the degree of involvement by health professionals and religious communities. Many R/S-tailored treatments have been offered in healthcare settings, and meta-analyses have shown benefits to psychological outcomes. In a few areas, especially in relation to reproductive health services, tensions may exist between religious communities and healthcare professionals that result in lower rates of utilization.

As part of a larger literature on workplace spirituality, R/S interventions that support health have been proposed for workplaces, although only rarely empirically studied.

Meditation and mindfulness interventions have a strong empirical base and are promising health-promotion activities usable in many settings ranging from workplaces to educational institutions, but it is unclear and sometimes controversial whether these practices are intrinsically R/S and/or require better tailoring to deeper R/S principles.

This chapter is one of thirteen reviews in this volume providing a public health perspective on the empirical evidence relating R/S to physical and mental health.

Keywords Religion · Spirituality · Public health · Health education · Health promotion · Health interventions · Faith-based · Faith-placed

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About one-sixth of all public health students are enrolled in areas emphasizing public health education, promotion and intervention – topics for which R/S factors can be quite important (see chapter entitled "Reviewing Religion/Spirituality Evidence from a Public Health Perspective: Introduction", this volume, Table 1). Religion and spirituality are relevant to campaigns and programs to address a wide variety of public health problems. For example, health professionals and religious organizations can collaborate to implement health programs directed towards members of religious congregations. The American Public Health Association has published a practical guide to support such efforts (Tuggle 2000). However, R/S factors also have a much broader potential relevance. For example, addressing health problems commonly requires changes in behavior, and R/S factors often connect with peoples' deepest concerns and motivations for needed behavioral changes.

Thus, as part of the more general process of cultural tailoring, health program efficacy may be enhanced by tailoring to a target population's religious/spiritual beliefs and practices (or lack thereof). This process of R/S tailoring is most straightforward when the target population is a congregation or other group that possesses shared R/S beliefs or practices. However, some R/S tailoring can also potentially enhance health programs conducted in nonreligious settings, such as workplaces or educational institutions. And in healthcare settings, some degree of R/S tailoring can often be beneficially integrated into treatments and other patient interactions. R/S traditions are the source of some widely recommended health practices such as meditation/mindfulness, and these practices may also be incorporated into health programming in a culturally and R/S-tailored manner. Yet, as described below, there are other health-related areas in which tensions have existed between religious communities and secular health professional approaches, and these tensions, too, must be navigated by those seeking to promote the health of religious communities as well as the wider society.

In what follows, we review the relevance of R/S factors to health leadership and health programming in religious, healthcare, and other secular settings, and examine additional uses of meditation interventions and roles of R/S leaders.

Religious Organizations as Health Program Sites Health ministries or healthcare programs are very widespread in US religious congregations, and these programs have generated substantial professional attention. Healthcare ministries appear especially common in larger, wealthier, and suburban congregations (Catanzaro et al. 2007; Trinitapoli et al. 2009). Analyses of data from the 1998 National Congregational Study, drawing on responses from key informants from more than 1200 congregations representative of the United States, reveal that about one-tenth of US congregations participate in some type of faith-health collaboration (Steinman and Bambakidis 2008; Trinitapoli et al. 2009). More than a decade ago, a review by DeHaven et al. (2004) identified 28 published reports of the effects of such programs, and Koenig et al. (2012, pp. 572–573, 918–923) identified publications on over 40 health promotion programs conducted in religious organizations, primarily Christian. Reviews have distinguished between "faith-placed" (etic) interventions, which are primarily driven by health professionals, versus "faith-based" (emic)

programs emanating from existing committees or groups such as health ministries within an R/S organization. A third category, "collaborative," describes interventions led by partnerships between the R/S organization and outside groups. DeHaven et al. (2004) found evidence that all three approaches could produce benefits. Providing further insight, Campbell et al. (2007) noted that R/S-situated programs, especially those led by outsiders, may either ignore the host organization's R/S culture, or tailor programs to its R/S culture. R/S cultures commonly include motivational beliefs such as staying healthy because the body is "a temple of God" (p. 217). The simplest type of religious tailoring takes into account a culture's "surface structure" – its readily observable characteristics – through approaches such as discussing healthy and unhealthy diet based on culturally relevant food items. Campbell et al. argue that such surface structure tailoring helps establish intervention feasibility, but tailoring to deeper features of R/S culture, its "deep structure" (p. 218), such as perceptions of the role of the divine in health and illness, can substantially enhance program impact (e.g., Holt and McClure 2006; Krause et al. 2000).

Additional systematic reviews have catalogued specific types of programs based in R/S organizations (for list see "Weighing the Evidence: What is Revealed by 100+ Meta-Analyses and Systematic Reviews of Religion/Spirituality and Health?", this volume, Table 1, section on programs). In particular, Williams et al. (2011) examined congregation-based programs to address HIV/AIDS, uncovering 11 refereed studies of congregational programs (see also chapter on "Infectious Diseases, Religion, and Spirituality", this volume). Reported effects from these congregation-based HIV programs included "decreased high-risk sex and drug behaviors, changed attitudes toward risk behaviors associated with HIV, increased compassion for persons with AIDS, successfully trained volunteers in delivering an HIV testing and prevention messages within their social network, increased knowledge and understanding of HIV/AIDS transmission, and generated safer sex negotiation skills and practices among adolescents" (p. 528). Another review by Adedoyin (2013) uncovered seven studies of R/S organizations or congregations that provided supportive care to African Americans living with HIV/AIDS, finding evidence for provision of a wide range of tangible and intangible services, including provision of food, clothing, housing, transportation, condoms, T-cell count testing, health information programs, financial assistance, pastoral care, substance abuse counseling, job placement, and employment workshops. A third review by Hankerson and Weissman (2012) found eight reports of programs offered through African American churches for mental health or substance abuse. Four were randomized trials, and many involved cultural tailoring. While this small body of research limits conclusions, the authors noted that methodological insights from several studies highlighted the importance of collaborating with the church community as an aid to reduce stigma, build trust, and maximize engagement. Fourth, societal outcomes were examined in a review of R/S-based social services by Ferguson et al. (2007), who identified 29 reports that investigated effects on indirectly health-related outcomes that included criminal recidivism, substance abuse, education, employment, wages, and psychosocial skills.

Most reviewed studies showed effectiveness. A fifth review by Lancaster et al. (2014) identified 27 studies of obesity interventions in African American faith-based organizations. In most of the studies, participants reported success in reducing weight (70%) as well as success in increasing fruit and vegetable intake (60%), and in more than one-third of the reviewed studies, participants reported increasing physical activity (38%). However, in a methodologically-focused systematic review that identified five published reports of faith-based weight-management interventions for African American women, Timmons (2015) concluded that improved reporting methods are needed.

Only rarely has research directly compared R/S-based programs with similar secular counterparts, and reviews have therefore called for more comparative research (Ferguson et al. 2007). In one of the few comparative studies, Wuthnow et al. (2004) examined caregiver motives and recipient experiences in healthcare and other human service providers in eastern Pennsylvania. They found few differences in perceived trustworthiness and effectiveness of caregivers from faith-based versus secular service organizations, after adjusting for client characteristics – perhaps because these organizations use similar professional styles of service delivery that are "largely indistinguishable" (p. 15). However, they found differences between religious congregations – that is, local communities who worship together in a specific location, and typically include many families as members – and other types of faith-based organizations, such as specialized agencies that may have a professional staff and/or be local affiliates of nationwide networks (e.g., Catholic Charities or Lutheran Social Services). The authors found that people who had sought assistance from religious *congregations* tended to have higher overall trust of caregivers, perhaps because of congregations' distinctive norms and provision of informal assistance. Similarly, in a much smaller non-randomized comparative study, a weight-loss intervention delivered in a church congregation was found more effective than similar interventions delivered through a university (Sbrocco et al. 2005). In contrast, for certain *non*-health outcomes such as job-placements, some studies have reported better results from secular organizations than from religious organizations (see Ferguson et al. 2007).

Various studies have explored the range of ways that R/S organizations conduct or evaluate health-focused activities. A systematic review by Yeary et al. (2012) examined how process evaluations were conducted in 67 published intervention studies, finding that on average, only three of seven possible process components were evaluated. Werber et al. (2012) examined HIV-related efforts by 14 urban congregations, finding that congregations engaged in diverse community partnerships, most often with social service organizations, healthcare providers, and other congregations. Bopp and Fallon (2013) conducted a nationwide survey of leaders of faith-based organizations, finding that the most commonly perceived barriers to sponsoring health and wellness activities were lack of lay leadership, and lack of financial resources for staff time. A variety of measurement instruments have also been developed for studying health programs in R/S organizations. For example, Thompson (2010) reported a 3-dimensional scale for measuring clergy knowledge and attitudes toward faith-based nursing. Van Olphen et al. (2003) argued that using

a Community Based Participatory Research (CBPR) approach can lead to inclusion of multiple dimensions of R/S, which may differentially affect different facets of health.

R/S-Tailored Treatments in Healthcare Settings In recent decades, much attention has been devoted to the relevance of R/S factors to treatments for individual medical and psychotherapy patients and social work clients. Many such treatments attempt to support patient R/S coping and are flexible in supporting diverse types of R/S among patients and clients (e.g., Kristeller et al. 2005). A meta-analysis by Worthington et al. (2011) synthesized 46 published reports of spiritually infused psychotherapy, finding that R/S psychotherapies outperformed both no-treatment controls (Cohen's d = 0.45 in 22 studies) and alternate secular psychotherapies (d = 0.26 in 29 studies). Three psychiatrically-oriented reviews have also been conducted. Anderson et al. (2015) meta-analyzed studies (k = 16) of Christian, Muslim, and other "faith-adapted" cognitive and behavioral treatments (CBT) for depression, finding statistically significant benefits versus standard CBT as well as versus controls, but also noting methodological limitations that reduced the strength of the findings. A broadly similar conclusion was reached by Lim et al.'s (2014) systematic review of religiously adapted CBT randomized trials (k = 10). A broader systematic review by Gonçalves et al. (2015) examined effects on mental health in randomized controlled trials of R/S interventions (k = 23), defined as "'messages to health' framed by themes of spiritual relevance…. such as taking care of the body God has provided" (p. 2938). The investigators found a "diversity of protocols and outcomes" (p. 2937), as well as a diversity of comparison groups, yielding various types of evidence for favorable effects related to meditation and/or psychotherapy on outcomes that include general anxiety, alcoholism, depression, and stress, versus comparison conditions (for further discussion of interventions, see chapter "Mental Health, Religion, and Spirituality", this volume).

Some R/S-focused interventions have also been conducted among medical patients, such as a randomized trial of a 5–7 min intervention among cancer patients that yielded significantly reduced depression, increased quality of life, and increased sense of interpersonal caring from their physician (Kristeller et al. 2005) (see chapter "Clinical Practice, Religion, and Spirituality", this volume). The relevance of R/S factors in medical treatment has also been recognized at a policy level in countries that include the US, the UK, and Australia, as described by Rumbold et al. (2012). These authors noted (p. 388) that in all three systems, interest in spiritual care initially emerged in palliative care, but expanded to other areas, helping provide "specific strategies for grounding the aspirational values expressed in current health policy (person-centered care etc.) that as yet lack consistent implementation. It compensates for the contracting [manager-centered] approaches that translated the scientific discourse of the health professions into actions that marginalized or neglected the art of care" (see also chapter "Health Policy and Management, Religion, and Spirituality", this volume).

R/S and Interventions in Other Secular Settings Attempts have also been made in workplaces and other nonreligious settings to use R/S cultural tailoring, or to address R/S factors in other ways. Most prominently, there is a large internationally emerging literature, only partly empirical, on the sources and implications of various spiritual values, supports, and perceptions in the workplace (e.g., Benefiel et al. 2014; Giacalone and Jurkiewicz 2010; Kazemipour et al. 2012; Neal 2013; Polley et al. 2005; Pawar 2009; Paterson et al. 2013; Pirkola et al. 2016). In accord with the large pre-existing research base on R/S coping, workplace spirituality is often theorized, and sometimes tested, as a potential buffer of stress (Pargament 1997). For example, one empirical study in India reported that perceptions of spirituality in the workplace moderated (buffered) the relation between stress and health, suggesting that worker health might be enhanced through appropriate support for workplace spirituality (Kumar and Kumar 2014). Similarly, Oman and Neuhauser (2012) offered a framework for how R/S factors and R/S-related workplaces might influence health outcomes among employees, citing the installation of a room for meditation or quiet prayer (e.g., usable by employees during breaks) as a possible intervention. Although some R/S intervention studies have documented benefits among healthy workplace populations, only a small number of intervention studies have emphasized workplace spirituality and work-related outcomes (e.g., Kinjerski and Skrypnek 2008; Oman et al. 2008).

R/S Tensions with Health Systems A complete description of the relevance of R/S to public health education, promotion, and intervention must also encompass the tensions that sometimes arise between R/S and health programmers with regard to the scope and value of health programming. As discussed elsewhere in this volume, R/S factors have historically shown mixed relations to the utilization rates of various preventive health services, such as immunizations (see chapter "Infectious Diseases, Religion, and Spirituality"), with documented cases of vaccine rejection by small religious groups, but R/S linked to higher rates of immunization in a recent national sample (Benjamins and Brown 2004). R/S measures have shown mixed associations with utilization of human papillomavirus (HPV) vaccine in the US, although there has been little evidence of associations in studies elsewhere (e.g., Ling et al. 2012; Shelton et al. 2013). A recent systematic review concluded that "determinants of vaccine hesitancy are complex and context-specific – varying across time, place and vaccines" (Larson et al. 2014, p. 2150).

More broadly, R/S-health programmer tensions exist in a number of areas related to reproductive health services, where R/S communities and secular health programmers may disagree on whether services such as the provision of contraception or abortion represent legitimate health services. These tensions can result in impediments to accessing these services (for further details see chapter on "Health Policy and Management, Religion, and Spirituality", this volume). In the US, many religion-based sexuality education programs have been developed, and together they "cover all age ranges, from early elementary school to adults, as well as youths with different sexual orientations and identities" (Satcher 2001, p. 363; see also chapter "Infectious Diseases, Religion, and Spirituality", this volume).

R/S and Meditation/Mindfulness Interventions A considerable body of evidence now supports the effectiveness of meditation for a variety of health-related purposes, including managing stress (Arias et al. 2006; Sedlmeier et al. 2012). Much recent evidence comes from research on widespread modernized forms of meditation and mindfulness. Yet meditation and mindfulness as broad categories are of uncertain spiritual classification, since these practices appear to exist in secular, spiritual, and perhaps also intermediate forms (see chapter on "Model of Individual Health Effects from Religion/Spirituality: Supporting Evidence", this volume, section on "Borderline Spiritual Constructs"). Documentation of meditation's benefits for mental health and psychological well-being is extensive, especially among psychotherapy clients and medical patients (Bohlmeijer et al. 2010; Keng et al. 2011; see chapters "Mental Health, Religion, and Spirituality" and "Clinical Practice, Religion, and Spirituality", this volume). Improvements in physical health symptoms or conditions, including fibromyalgia, psoriasis, and multiple sclerosis, have also been reported in some studies (Mars and Abbey 2010; Simpson et al. 2014), and meta-analyses have reported moderate effect sizes (d = 0.46) for beneficial impacts on telomerase, an indicator of physiological aging (Schutte and Malouff 2014).

Importantly, evidence from both national surveys and within-subjects comparison designs suggests that only a minority of people may prefer mindfulness meditation, and adequate R/S tailoring should take better account of these differences (Burke 2012; Burke et al. 2017; Oman 2014, 2015). Each month, an estimated 7.0 million US adults engage in some form of "spiritual meditation," nearly twice the number estimated to engage each month in mindfulness meditation (3.6 million, Burke et al. 2017, p. 1). Lack of adequate R/S tailoring has sometimes provoked criticism (Oman 2014; Purser and Milillo 2015). Strategies for the cultural and spiritual tailoring of meditation programs and interventions have to date received at most sporadic attention, although various alternative models are available (e.g., Oman et al. 2008; Sarath 2003). Some have suggested that effective strategies for respecting diversity can only be enacted at the level of an organization, rather than at the level of individual interventions or classes (Oman 2016; see also chapter on "Social and Community-Level Factors in Health Effects from Religion/Spirituality", this volume, section on "Multilevel Spiritual Interventions").

These tailoring challenges notwithstanding, meditative and mindfulness practices are drawing increasing interest as health-promotional, stress management, or even educational activities that can be integrated into sectors of modern life that include healthcare workplaces as well as educational settings and other types of workplaces. Empirical evidence to date is most substantial in supporting benefits of meditation for healthcare workers, and is more preliminary, and sometimes mixed, for other types of workplaces (van Berkel et al. 2014) and for educational settings (Shapiro et al. 2011). When implemented in a spiritually and culturally sensitive manner, integrating meditative/mindfulness practices into educational institutions and workplaces would seem to merit increased public health attention, being highly consistent with the "upstream" and preventive approaches that are most characteristic of public health.

Religious Leaders: Other Roles Religious leaders may function as partners or leaders for health in several additional ways. On the local level, there may be benefits to organizing "professional associations" of congregational leaders that cut across denominational and theological divisions to include *all* clergy in a region. The first US-based association of this kind was the Peninsula Clergy Network (PCN), uniting the 440 clergy and 310 congregations in San Mateo and northern Santa Clara Counties, California (Chaffee 2012, February 1). Formed in 2002, the PCN's activities include consultation and technical training for religious organizations and civic agencies, as well as specific projects for disaster preparedness and health education. Organizers argue that fully inclusive associations such as the PCN enable substantially greater effectiveness in a variety of civic and health-related activities (e.g., Maher 2010). On a national level, no similar efforts are underway, but Levin (2013) has advocated for more active engagement of the faith community in health efforts, arguing for a new faith-based agenda that "could more effectively advocate for core features of the traditional public health ethic, including primary prevention, the multiple determinants of population health, communitarianism and social justice, and a global perspective, supported by the historic prophetic role of the faith traditions" (p. 368).

Box 1: Ideas for Application to Public Health Practice: Public Health Education, Promotion, and Intervention

Knowledge of the rich history and diverse ways that religion and spirituality are relevant to public health education, promotion, and intervention can vitally inform public health work by encouraging skilled partnership building, cultural/spiritual tailoring, and other advances:

- ✓ Be aware of different levels of collaboration (faith-placed versus collaborative), and of the skills needed for each;
- ✓ Be aware of the substantial research base supporting meditative/mindfulness interventions, and of strategies and needs to support cultural tailoring and cultural sensitivity of meditation/mindfulness interventions;
- ✓ Consider employing spiritual and cultural tailoring, and be aware of different strategies and dimensions for cultural tailoring, and of supporting evidence;
- ✓ Consider a collaborative partnership with a religious/spiritual community or organization to promote health.

Please see chapters in Part II of this volume for in-depth discussion of the relevance of religion and spirituality to applied public health work. See Part I's first chapter for an overview of major application themes.

1 Summary: Public Health Education, Promotion, and Intervention

Several ideas for application to public health practice are provided in Box 1. In summary, published literature relevant to R/S and public health education, promotion, and action suggests the following:

- Health programs conducted through religious organizations have been the focus of more than 40 publications that have documented benefits from faith-based, faith-placed, and collaborative programs – categories of programs distinguished from each other by the degree of involvement by health professionals and religious communities (Koenig et al. 2012; Campbell et al. 2007);
- Many R/S-tailored treatments have been offered in healthcare settings, and their effectiveness for improving psychological outcomes has been supported by meta-analyses (Worthington et al. 2011);
- R/S interventions that support health are emerging in workplaces as part of the larger interest in workplace spirituality, although little empirical literature yet exists on health effects (Giacalone and Jurkiewicz 2010; Oman and Neuhauser 2012);
- Tensions sometimes arise between R/S communities and health programmers with regard to the scope and value of various types of health programming, especially in relation to reproductive health services, and such tensions may correspond to impediments to access or lower rates of utilization by religious communities;
- Meditation and mindfulness interventions have a strong empirical base and are promising health-promotion activities usable in many settings ranging from workplaces to educational institutions, but whether these practices are intrinsically R/S, and whether there is a need for improved R/S tailoring, can be unclear or controversial (Sedlmeier et al. 2012; Oman 2015);
- Religious leaders may function in diverse ways as health leaders or partners, sometimes collaborating through associations that cut across theological divides and encompass *all* congregational leaders in a region (Chaffee 2012, February 1).

References

Adedoyin, C. (2013). A systematic review of the roles of congregations and faith-based organizations in the care and support of African Americans living with HIV/AIDS in the United States. *Social Work and Christianity, 40*(2), 184–205.

Anderson, N., Heywood-Everett, S., Siddiqi, N., Wright, J., Meredith, J., & McMillan, D. (2015). Faith-adapted psychological therapies for depression and anxiety: Systematic review and meta-analysis. *Journal of Affective Disorders, 176*, 183–196. https://doi.org/10.1016/j.jad.2015.01.019.

Arias, A. J., Steinberg, K., Banga, A., & Trestman, R. L. (2006). Systematic review of the efficacy of meditation techniques as treatments for medical illness. *Journal of Alternative and Complementary Medicine, 12*(8), 817–832. https://doi.org/10.1089/acm.2006.12.817.

Benefiel, M., Fry, L. W., & Geigle, D. (2014). Spirituality and religion in the workplace: History, theory, and research. *Psychology of Religion and Spirituality, 6*(3), 175–187. https://doi.org/10.1037/a0036597.

Benjamins, M. R., & Brown, C. (2004). Religion and preventative health care utilization among the elderly. *Social Science and Medicine, 58*(1), 109–118. https://doi.org/10.1016/S0277-9536(03)00152-7.

Bohlmeijer, E., Prenger, R., Taal, E., & Cuijpers, P. (2010). The effects of mindfulness-based stress reduction therapy on mental health of adults with a chronic medical disease: A meta-analysis. *Journal of Psychosomatic Research, 68*(6), 539–544. https://doi.org/10.1016/j.jpsychores.2009.10.005.

Bopp, M., & Fallon, E. A. (2013). Health and wellness programming in faith-based organizations: A description of a Nationwide sample. *Health Promotion Practice, 14*(1), 122–131. https://doi.org/10.1177/1524839912446478.

Burke, A. (2012). Comparing individual preferences for four meditation techniques: Zen, Vipassana (mindfulness), qigong, and mantra. *Explore: The Journal of Science and Healing, 8*(4), 237–242. https://doi.org/10.1016/j.explore.2012.04.003.

Burke, A., Lam, C. N., Stussman, B., & Yang, H. (2017). Prevalence and patterns of use of mantra, mindfulness and spiritual meditation among adults in the United States. *BMC Complementary and Alternative Medicine, 17*(1), 316. https://doi.org/10.1186/s12906-017-1827-8.

Campbell, M. K., Hudson, M. A., Resnicow, K., Blakeney, N., Paxton, A., & Baskin, M. (2007). Church-based health promotion interventions: Evidence and lessons learned. *Annual Review of Public Health, 28*, 213–234. https://doi.org/10.1146/annurev.publhealth.28.021406.144016.

Catanzaro, A. M., Meador, K. G., Koenig, H. G., Kuchibhatla, M., & Clipp, E. C. (2007). Congregational health ministries: A national study of pastors' views. *Public Health Nursing, 24*(1), 6–17. https://doi.org/10.1111/j.1525-1446.2006.00602.x.

Chaffee, P. (2012, February 1). Unique clergy network empowers religion sector. *The Interfaith Observer*

DeHaven, M., Hunter, I. B., Wilder, L., Walton, J. W., & Berry, J. (2004). Health programs in faith-based organizations: Are they effective? *American Journal of Public Health, 94*(6), 1030–1036. https://doi.org/10.2105/AJPH.94.6.1030.

Ferguson, K. M., Wu, Q., Spruijt-Metz, D., & Dyrness, G. (2007). Outcomes evaluation in faith-based social services: Are we evaluating faith accurately? *Research on Social Work Practice, 17*(2), 264–276. https://doi.org/10.1177/1049731505283698.

Giacalone, R. A., & Jurkiewicz, C. L. (2010). *Handbook of workplace spirituality and organizational performance* (2nd ed.). Armonk: M.E. Sharpe.

Gonçalves, J. P. B., Lucchetti, G., Menezes, P. R., & Vallada, H. (2015). Religious and spiritual interventions in mental health care: A systematic review and meta-analysis of randomized controlled clinical trials. *Psychological Medicine, 45*(14), 2937–2949. https://doi.org/10.1017/S0033291715001166.

Hankerson, S. H., & Weissman, M. M. (2012). Church-based health programs for mental disorders among African Americans: A review. *Psychiatric Services, 63*(3), 243–249. https://doi.org/10.1176/appi.ps.201100216.

Holt, C. L., & McClure, S. M. (2006). Perceptions of the religion-health connection among African American church members. *Qualitative Health Research, 16*(2), 268–281. https://doi.org/10.1177/1049732305275634.

Kazemipour, F., Mohamad Amin, S., & Pourseidi, B. (2012). Relationship between workplace spirituality and organizational citizenship behavior among nurses through mediation of affective organizational commitment. *Journal of Nursing Scholarship, 44*(3), 302–310. https://doi.org/10.1111/j.1547-5069.2012.01456.x.

Keng, S.-L., Smoski, M. J., & Robins, C. J. (2011). Effects of mindfulness on psychological health: A review of empirical studies. *Clinical Psychology Review, 31*(6), 1041–1056. https://doi.org/10.1016/j.cpr.2011.04.006.

Kinjerski, V., & Skrypnek, B. J. (2008). The promise of spirit at work: Increasing job satisfaction and organizational commitment and reducing turnover and absenteeism in long-term care. *Journal of Gerontological Nurssing, 34*(10), 17–27. *https://doi.org/10.3928/00989134-20081001-03*.

Koenig, H. G., King, D. E., & Carson, V. B. (2012). *Handbook of religion and health* (2nd ed.). Oxford/New York: Oxford University Press.

Krause, N., Chatters, L. M., Meltzer, T., & Morgan, D. L. (2000). Using focus groups to explore the nature of prayer in late life. *Journal of Aging Studies, 14*(2), 191–212. https://doi.org/10.1016/S0890-4065(00)80011-0.

Kristeller, J. L., Rhodes, M., Cripe, L. D., & Sheets, V. (2005). Oncologist assisted spiritual intervention study (OASIS): Patient acceptability and initial evidence of effects. *International Journal of Psychiatry in Medicine, 35*(4), 329–347. https://doi.org/10.2190/8AE4-F01C-60M0-85C8.

Kumar, V., & Kumar, S. (2014). Workplace spirituality as a moderator in relation between stress and health: An exploratory empirical assessment. *International Review of Psychiatry, 26*(3), 344–351. https://doi.org/10.3109/09540261.2014.924909.

Lancaster, K. J., Carter-Edwards, L., Grilo, S., Shen, C., & Schoenthaler, A. M. (2014). Obesity interventions in African American faith-based organizations: A systematic review. *Obesity Reviews, 15*, 159–176. https://doi.org/10.1111/obr.12207.

Larson, H. J., Jarrett, C., Eckersberger, E., Smith, D. M. D., & Paterson, P. (2014). Understanding vaccine hesitancy around vaccines and vaccination from a global perspective: A systematic review of published literature, 2007–2012. *Vaccine, 32*(19), 2150–2159. https://doi.org/10.1016/j.vaccine.2014.01.081.

Levin, J. (2013). Engaging the Faith Community for public health advocacy: An agenda for the surgeon general. *Journal of Religion and Health, 52*(2), 368–385. https://doi.org/10.1007/s10943-013-9699-9.

Lim, C., Sim, K., Renjan, V., Sam, H. F., & Quah, S. L. (2014). Adapted cognitive-behavioral therapy for religious individuals with mental disorder: A systematic review. *Asian Journal of Psychiatry, 9*(20), 3–12. https://doi.org/10.1016/j.ajp.2013.12.011.

Ling, W. Y., Razali, S. M., Ren, C. K., & Omar, S. Z. (2012). Does the success of a school-based HPV vaccine programme depend on teachers' knowledge and religion? – A survey in a multicultural society. *Asian Pacific Journal of Cancer Prevention, 13*(9), 4651–4654. https://doi.org/10.7314/APJCP.2012.13.9.4651.

Maher, S. (2010, January 22). San Mateo County congregations prepare for disasters. *San Mateo County Times*.

Mars, T. S., & Abbey, H. (2010). Mindfulness meditation practise as a healthcare intervention: A systematic review. *International Journal of Osteopathic Medicine, 13*(2), 56–66. https://doi.org/10.1016/j.ijosm.2009.07.005.

Neal, J. (Ed.). (2013). *Handbook of faith and spirituality in the workplace: Emerging research and practice*. New York: Springer Science + Business Media.

Oman, D. (2014). The healing power of meditation: Living the questions. *PsycCRITIQUES, 59*(Release 12), Article 5. https://doi.org/10.1037/a0036230.

Oman, D. (2015). Cultivating compassion through holistic mindfulness: Evidence for effective intervention. In T. G. Plante (Ed.), *The psychology of compassion and cruelty: Understanding the emotional, spiritual, and religious influences* (pp. 35–57). Santa Barbara: Praeger.

Oman, D. (2016). International collaboration for living with the richness of spiritual diversity [letter]. *Journal of the Indian Academy of Applied Psychology, 42*(2), 373–378.

Oman, D., Flinders, T., & Thoresen, C. E. (2008). Integrating spiritual modeling into education: A college course for stress management and spiritual growth. *The International Journal for the Psychology of Religion, 18*(2), 79–107. https://doi.org/10.1080/10508610701879316.

Oman, D., & Neuhauser, L. (2012). Spiritual factors in occupational health and well-being: Opportunities for research translation. In P. C. Hill & B. Dik (Eds.), *Psychology of religion and workplace spirituality* (pp. 63–85). Greenwich: Information Age Publishing.

Oman, D., Richards, T. A., Hedberg, J., & Thoresen, C. E. (2008). Passage meditation improves caregiving self-efficacy among health professionals: A randomized trial and qualitative assessment. *Journal of Health Psychology, 13*(8), 1119–1135. https://doi.org/10.1177/1359105308095966.

Pargament, K. I. (1997). *The psychology of religion and coping: Theory, research, practice*. New York: Guilford.

Paterson, T. A., Specht, D., & Duchon, D. (2013). Exploring costs and consequences of religious expression in family businesses. *Journal of Management, Spirituality & Religion, 10*(2), 138–158. https://doi.org/10.1080/14766086.2012.758051.

Pawar, B. S. (2009). Individual spirituality, workplace spirituality and work attitudes: An empirical test of direct and interaction effects. *Leadership & Organization Development Journal, 30*(8), 759–777. https://doi.org/10.1108/01437730911003911.

Pirkola, H., Rantakokko, P., & Suhonen, M. (2016). Workplace spirituality in health care: An integrated review of the literature. *Journal of Nursing Management, 24*(7), 859–868. https://doi.org/10.1111/jonm.12398.

Polley, D., Vora, J., & SubbaNarasimha, P. N. (2005). Paying the devil his due: Limits and liabilities of workplace spirituality. *International Journal of Organizational Analysis, 13*(1), 50–63. https://doi.org/10.1108/eb028997.

Purser, R. E., & Milillo, J. (2015). Mindfulness revisited: A Buddhist-based conceptualization. *Journal of Management Inquiry, 24*(1), 3–24. https://doi.org/10.1177/1056492614532315.

Rumbold, B., Cobb, M., & Puchalski, C. M. (2012). Policy. In M. Cobb, C. M. Puchalski, & B. Rumbold (Eds.), *Oxford textbook of spirituality in healthcare* (pp. 383–389). New York: Oxford University Press.

Sarath, E. (2003). Meditation in higher education: The next wave? *Innovative Higher Education, 27*(4), 215–233. https://doi.org/10.1023/A:1024072313202.

Satcher, D. (2001). The surgeon General's call to action to promote sexual health and responsible sexual behavior. *American Journal of Health Education, 32*(6), 356–368. https://doi.org/10.1080/19325037.2001.10603498.

Sbrocco, T., Carter, M. M., Lewis, E. L., Vaughn, N. A., Kalupa, K. L., King, S., et al. (2005). Church-based obesity treatment for African-American women improves adherence. *Ethnicity & Disease, 15*(2), 246–255.

Schutte, N. S., & Malouff, J. M. (2014). A meta-analytic review of the effects of mindfulness meditation on telomerase activity. *Psychoneuroendocrinology, 42*, 45–48. https://doi.org/10.1016/j.psyneuen.2013.12.017.

Sedlmeier, P., Eberth, J., Schwarz, M., Zimmermann, D., Haarig, F., Jaeger, S., et al. (2012). The psychological effects of meditation: A meta-analysis. *Psychological Bulletin, 138*(6), 1139–1171. https://doi.org/10.1037/a0028168.

Shapiro, S. L., Brown, K. W., & Astin, J. (2011). Toward the integration of meditation into higher education: A review of research evidence. *Teachers College Record, 113*(3), 493–528.

Shelton, R., Snavely, A., de Jesus, M., Othus, M., & Allen, J. (2013). HPV vaccine decision-making and acceptance: Does religion play a role? *Journal of Religion and Health, 52*(4), 1120–1130. https://doi.org/10.1007/s10943-011-9553-x.

Simpson, R., Booth, J., Lawrence, M., Byrne, S., Mair, F., & Mercer, S. (2014). Mindfulness based interventions in multiple sclerosis – A systematic review. *BMC Neurology, 14*. https://doi.org/10.1186/1471-2377-14-15.

Steinman, K. J., & Bambakidis, A. (2008). Faith-health collaboration in the United States: Results from a nationally representative study. *American Journal of Health Promotion, 22*(4), 256–263. https://doi.org/10.4278/061212152R.1.

Thompson, P. (2010). Clergy knowledge and attitudes concerning faith community nursing: Toward a three-dimensional scale. *Public Health Nursing, 27*(1), 71–78. https://doi.org/10.1111/j.1525-1446.2009.00828.x.

Timmons, S. (2015). Review and evaluation of faith-based weight management interventions that target African American women. *Journal of Religion and Health, 54*(2), 798–809. https://doi.org/10.1007/s10943-014-9912-5.

Trinitapoli, J., Ellison, C. G., & Boardman, J. D. (2009). US religious congregations and the sponsorship of health-related programs. *Social Science and Medicine, 68*(12), 2231–2239. https://doi.org/10.1016/j.socscimed.2009.03.036.

Tuggle, M. B. (2000). *It is well with my soul: Churches and institutions collaborating for public health*. Washington, DC: American Public Health Association.

van Berkel, J., Boot, C. R. L., Proper, K. I., Bongers, P. M., & van der Beek, A. J. (2014). Effectiveness of a worksite mindfulness-related multicomponent health promotion intervention on work engagement and mental health: Results of a randomized controlled trial. *PLoS One, 9*(1). https://doi.org/10.1371/journal.pone.0084118.

van Olphen, J., Schulz, A., Israel, B., Chatters, L., Klem, L., Parker, E., et al. (2003). Religious involvement, social support, and health among African-American women on the east side of Detroit. *Journal of General Internal Medicine, 18*(7), 549–557. https://doi.org/10.1046/j.1525-1497.2003.21031.x.

Werber, L., Derose, K. P., Domínguez, B. X., & Mata, M. A. (2012). Religious congregations' collaborations: With whom do they work and what resources do they share in addressing HIV and other health issues? *Health Education and Behavior, 39*(6), 777–788. https://doi.org/10.1177/1090198111434595.

Williams, M. V., Palar, K., & Derose, K. P. (2011). Congregation-based programs to address HIV/AIDS: Elements of successful implementation. *Journal of Urban Health, 88*(3), 517–532. https://doi.org/10.1007/s11524-010-9526-5.

Worthington, E. L., Hook, J. N., Davis, D. E., & McDaniel, M. A. (2011). Religion and spirituality. *Journal of Clinical Psychology, 67*(2), 204–214. https://doi.org/10.1002/jclp.20760.

Wuthnow, R., Hackett, C., & Hsu, B. Y. (2004). The effectiveness and trustworthiness of faith-based and other service organizations: A study of Recipients' perceptions. *Journal for the Scientific Study of Religion, 43*(1), 1–17. https://doi.org/10.1111/j.1468-5906.2004.00214.x.

Yeary, K. H.-C. K., Klos, L. A., & Linnan, L. (2012). The examination of process evaluation use in church-based health interventions: A systematic review. *Health Promotion Practice, 13*(4), 524–534. https://doi.org/10.1177/1524839910390358.

Mental Health, Religion, and Spirituality

Doug Oman and David Lukoff

Abstract This chapter reviews theories and empirical evidence on relations between religion and spirituality (R/S), and mental health, a topic of increasing interest to public health.

Evidence supports associations of R/S with lower rates of depression, anxiety, suicide, dementia, and stress-related illness, and mixed relations with severe forms of mental illness such as schizophrenia and bipolar disease. In particular, R/S has shown small favorable correlations with less depression and anxiety, both in the US and in other countries and cultures, and in both adolescents and adults. These findings have been somewhat more consistently favorable for depression. Also both in the US and elsewhere, and among both adolescents and adults, R/S tends to be associated with lower levels of suicidal ideation, suicide attempts, and completed suicide. Regarding more severe forms of mental illness, R/S can interact with schizophrenia symptoms, functioning as either a risk factor or a protective factor. Many R/S-tailored treatments have been offered in healthcare settings, and their effectiveness for improving psychological outcomes has been supported by meta-analyses. Respectful attention to R/S factors has been increasingly integrated into US healthcare systems, especially in particular localities, but a great deal of work remains to be done. Meditation and mindfulness interventions exist in both spiritual and secular forms, and considerable evidence suggests their favorable effects on mental health outcomes in a variety of healthy and clinical populations.

This chapter is one of thirteen reviews in this volume providing a public health perspective on the empirical evidence relating R/S to physical and mental health.

Keywords Religion · Spirituality · Public health · Mental health · Depression · Anxiety · Psychopathology · Suicide · Healthcare · Meditation

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In the past two decades, mental health has been increasingly recognized as an important component of public health. The first US Surgeon General's report on mental health was released in 1999, reviewing more than 3000 research studies, and concluding that "The efficacy of mental health treatments is well documented, and a range of treatments exists for most mental disorders," while also affirming that "There is no 'one size fits all' treatment" (Satcher 2000, p. 5; U.S. Department of Health and Human Services 1999). In 2008, the Centers for Disease Control and Prevention (CDC) convened a panel of experts to address opportunities for the mental health and public health communities to work together. Recommendations included the expansion of the US health surveillance capacity to address the intersection of physical and mental health, and that public health practitioners should better understand mental/physical health linkages, and how to intervene effectively for mental health conditions (Giles and Collins 2010). More broadly, mental health is recognized worldwide as a public health concern (e.g., Reijneveld 2005; Zhou and Xiao 2015). Recent work to integrate public health and mental healthcare approaches and systems has incorporated a combination of deficit-focused and strength based, salutogenic approaches (Kobau et al. 2011; Atkins and Frazier 2011; Satcher and Druss 2010).

Mental and physical health are closely interlinked. Thus, mental health is often identified as a key potential mediator between R/S involvement and physical health, as in the generic model described in this volume's chapter "Model of Individual Health Effects from Religion/Spirituality: Supporting Evidence" (see that chapter's Fig.1). Consistent with how R/S relations with mental health have been theorized (e.g., Koenig et al. 2012, pp. 308–309), the generic model suggests that R/S may affect mental health, especially in the general population, through many of the same sets of factors by which R/S appears to affect physical health. Proposed mediators include enhanced social networks (sometimes called "social capital"), improved quality of social support, marital stability, improved processes of coping with stress, the cultivation of salutary virtues and character strengths, and pursuit of more adaptive life goals (e.g., Koenig et al. 2001, p. 223; Koenig et al. 2012, pp. 308–309) (see also Ellison and Levin 1998). For example, people who use R/S methods of coping may be less likely to turn to maladaptive coping methods, such as substance abuse.

Proposed pathways by which R/S might affect the course of severe mental illness, either beneficially or adversely, also emphasize how R/S contributes to preventing stress, to causing stress, or to coping with stress. Koenig et al. (2012, pp. 212–213) suggest that R/S may foster better adaptation to life stressors, "either by reducing the number of stressors or by providing … support…. Alternatively, R/S experiences may be so emotionally powerful that they can also exacerbate psychotic illness or precipitate the onset of psychosis [and] R/S beliefs may also provide justification for stopping anti-psychotic medication."

A large quantity of empirical work has examined relationships between R/S factors and various components of this model, such as social support (see chapter "Model of Individual Health Effects from Religion/Spirituality: Supporting Evidence", this volume). Much research has also directly examined relations between R/S factors and mental health outcomes, such as depression, anxiety, and

schizophrenia. Accordingly, in this chapter, we summarize evidence on relations of R/S to overall mental health, depression, anxiety, psychopathology, and , as well as evidence for the effectiveness of R/S-infused mental health treatments, and progress in integrating better awareness of R/S into mental healthcare systems. Adverse associations with R/S struggle are also discussed, as are the relevance of meditation and mindfulness to R/S and mental health relations. Importantly, changes in standards of organizational accreditation promulgated by The Joint Commission (formerly known as JCAHO) have also moved the broader healthcare system to a fuller recognition of the R/S needs of medical patients, potentially supporting healing and preventing psychiatric comorbidities (for discussion, see chapter "Clinical Practice, Religion, and Spirituality", this volume).

Overall Mental Health Most systematic reviews and meta-analyses have emphasized relations between R/S and specific facets of mental health (e.g., depression), but some also report omnibus analyses that aggregate various measures of mental health. Those reporting omnibus calculations include the earliest meta-analysis, by Bergin (1983), which played an important role in helping psychology as a field adopt a more empirical and favorable attitude toward R/S, moving beyond the anti-R/S perspectives enunciated by influential figures such as Sigmund Freud. Meta-analyzing 24 available studies, Bergin (1983) reported favorable overall median and mean correlations of religion with reduced psychopathology of r = 0.055 and r = 0.09, respectively. More recently Hackney and Sanders (2003) meta-analyzed 35 studies published from 1990 to 2001, reporting a small positive omnibus correlation between religiosity and various measures of psychological health (r = 0.10, p < 0.0001). The correlation magnitude driffered according to the dimension of religiosity (institutional, ideological, or personal devotion) and type of mental health outcome (psychological distress, life satisfaction, or self-actualization). Reduced psychological distress, perhaps the most clinically pertinent outcome category, correlated favorably (r = 0.11, p < 0.0001) with personal devotion, but was unrelated or slightly inversely related to ideological and institutional measures of religion, perhaps because these categories collapsed together measures usually analyzed separately, such as extrinsic religiosity with church activities (both categorized as institutional), or fundamentalism with belief salience (both categorized as ideological).

More common are systematic reviews that report results disaggregated by type of mental health outcome or dimension of R/S. These include several reviews of R/S in adolescent populations (see chapter "Maternal/Child Health, Religion, and Spirituality", this volume). For studies of R/S and mental health among adults or all age groups, the most comprehensive review is provided by Koenig's *Handbooks* (Koenig et al. 2001, 2012). Koenig has also published multi-outcome reviews of mental heath in refereed journals. Among the most recent is the report by Bonelli & Koenig (2013), who systematically reviewed 43 studies of R/S and psychiatric illness that were published in top psychiatry journals from 1990 to 2010. They reported good evidence for favorable associations of R/S with lower rates of depression and suicide (based on k = 19 and k = 3 studies, respectively), some evidence for favorable associations of R/S with less dementia (k = 2) and stress-related illness (k = 2), and

evidence for mixed relations of R/S with schizophrenia (k = 5), and mixed/negative relations with bipolar disease (k = 2). An overall narrative review of R/S and mental health is also available in Koenig (2009).

Special populations, such as prisoners and medical patients, have also been the focus of systematic reviews. Eytan (2011) systematically reviewed 12 studies of R/S and mental health during incarceration, finding that R/S was associated with lower frequency and severity of depressive episodes, and reduction of incidents and disciplinary sanctions. In addition, some investigators have systematically reviewed studies of medical patients, examining relations of R/S with psychological well-being (see chapter entitled "Clinical Practice, Religion, and Spirituality", this volume) (e.g., Mouch and Sonnega 2012).

Depression Depression is among the most commonly studied specific outcomes in the mental health literature. More than a decade ago, Smith et al. (2003) meta-analyzed 147 studies on R/S and depression (n = 98,975 total subjects). They reported an average effect size (correlation) of r = −0.10, which could not be explained by gender, age, or ethnicity. While this correlation is statistically small, the investigators note that it is of a similar magnitude to the correlation between gender and depression, which "has considerable scientific and social importance" (p. 627), and others have suggested that "few would say that the gender effect on depression is clinically insignificant" (Koenig et al. 2012, p. 149). More recently, a similar correlation of r = −0.11 among R/S and depression in adolescents was reported in a meta-analysis of 24 studies (Yonker et al. 2012) (see also chapter "Maternal/Child Health, Religion, and Spirituality", this volume).

Also in recent years, Koenig et al. (2012, pp. 145–173, 694–720) identified 339 post-2000 studies of R/S and depression. Favorable R/S associations disproportionally outnumbered unfavorable associations in all major design categories, including cross-sectional studies (272 total studies, 170 favorable versus 17 unfavorable), prospective cohort studies (45 total studies, 21 favorable versus 5 unfavorable), and clinical trials or experimental studies (22 total, 14 favorable versus 2 unfavorable). Favorable relationships were reported by a somewhat higher proportion of studies with higher versus the proportion with lower quality rankings. Several studies documenting protective associations have used nationally representative US samples (e.g., Cunningham and Knoester 2007; Van Voorhees et al. 2008), with others having occurred outside the US in locations such as Afghanistan, Iran, Israel, the Netherlands, Palestine, Taiwan, and Yugoslavia (Lopes Cardozo et al. 2004; Watson et al. 2002; Shvartzman et al. 2005; Meertens et al. 2003; Barber 2001; Hahn et al. 2004; Basoglu et al. 2005), although unfavorable associations have sometimes also been documented in national and non-US samples (e.g., Benjamins 2007; Bleich et al. 2005; Schnittker 2001).

Anxiety Disorders Koenig et al. (2012, pp. 191–206, 729–748) identified 222 post-2000 studies of R/S and anxiety disorders. Favorable R/S associations disproportionally outnumbered unfavorable associations in all major design categories, including observational studies (175 total studies, 77 favorable versus 21 unfavorable), prospective cohort studies (14 total studies, 5 favorable versus 1 unfavorable),

experimental studies (8 total, 7 favorable versus 0 unfavorable)., and clinical trials (25 total, 16 favorable versus 1 unfavorable). Among 58 studies with the highest quality rankings (7 or more out of 10), a majority (n = 31) reported a favorable (inverse relation between R/S and anxiety, whereas only 10% (n = 6) reported an unfavorable relationship. However, among adolescents, a recent meta-analysis of 15 studies found no significant relation between measures of R/S and anxiety (r = −0.06, p > 0.05, Yonker et al. 2012) (see also chapter "Maternal/Child Health, Religion, and Spirituality", this volume). As for studies of R/S and depression, some R/S-anxiety studies documenting protective associations have used nationally representative US samples, and some have occurred in non-US locations (e.g., Afghanistan, Israel, Germany, Japan, Sri Lanka) (Beutel et al. 2004; Ellison et al. 2009; Lopes Cardozo et al. 2004; Matsushita et al. 2007; Shmueli and Tamir 2007; Wickrama and Wickrama 2008), although neither type of study has reported uniformly favorable associations.

Religious/Spiritual Struggles Less salutary associations have been observed for one specific R/S dimension: *religious and/or spiritual struggles*, sometimes defined as "expressions of conflict, question and doubt regarding matters of faith, God and religious relationships" (McConnell et al. 2006, p. 1470). R/S struggles may focus on domains that include the supernatural (e.g., feeling angry at God), the interpersonal (e.g., feeling betrayed by fellow congregants or a religious leader), and the intrapersonal (e.g., being unable to forgive oneself for a transgression) (Exline 2013). R/S struggles often give rise to stress, and have often been inferred from the existence of various forms of negative religious coping (e.g., Exline 2013, p. 462). However, R/S struggles are conceptually distinct from the coping responses that they elicit (Exline et al. 2014).

Research to date has shown strong support for adverse relations between R/S struggles and well-being, including both mental and physical health (Exline 2013, p. 462). Evidence has been found for adverse relations of R/S struggle with outcomes such as depression, anxiety, difficulty adjusting to traumatic life events, paranoid ideation, suicidal ideation, and somatization, as well as immune system declines, slower rehabilitation from disease, and mortality (Pargament et al. 2001; Wilt et al. 2016). Supporting evidence comes from longitudinal studies, US nationally representative surveys, and samples that are both clinical and nonclinical and from diverse religious traditions (Abu Raiya et al. 2008, 2016; McConnell et al. 2006; Pirutinsky et al. 2011; Wortmann et al. 2012). Spiritual struggle has been found to partially mediate the relation between trauma and posttraumatic stress disorder (PTSD) symptoms (Wortmann et al. 2011).

Importantly, however, some evidence suggests that spiritual struggles may at times foster growth, an idea consistent with traditional views that spiritual growth is often catalyzed by suffering (Hill 2003). One possible contributor might be that, in Exline's (2013) words, "major stressors can encourage people to cultivate new skills or sources of social support" (p. 464). Yet findings from studies that have looked for growth are mixed, suggesting that moderating factors may affect whether growth occurs. Such moderation would be consistent with recent findings from a US nation-

ally representative sample that various dimensions of R/S can buffer against the adverse impact of R/S struggles. Using a 15-item R/S struggles scale, Abu-Raiya et al. (2016, n = 2140) found that the adverse effects of R/S struggle on depressive symptoms and happiness were buffered by four other R/S dimensions: religious commitment, religious support, religious hope, and life sanctification. While much remains to be learned about the sources, processes, and mental and physical health consequences of R/S struggles, it is clear that such struggles represent a very important dimension of religious and spiritual experience. Starting with the fourth edition of the American Psychiatric Association's authoritative and widely used *Diagnostic and Statistical Manual of Mental Disorders* (*DSM-IV*) and maintained in the *DSM-5,* the diagnostic category Religious or Spiritual Problem has been included, offering official recognition that such spiritual struggles may be the focus of clinical attention when no mental disorder is present and also co-exist with *DSM* mental disorders.

Severe Mental Illness At least three reviews have systematically examined relations between R/S factors and measures of severe mental illness, revealing mixed patterns. This is consistent with reports by Koenig et al. (2012, pp. 207–223, 748–753), who noted 58 studies published from 2000 to 2009, revealing a mixed pattern of findings (7 showing favorable relations, 12 unfavorable relations, 9 mixed, and 30 other types of findings, such as simple descriptions).

In the largest recent review, Gearing et al. (2011) systematically reviewed 70 studies of R/S and schizophrenia published from 1980 to 2010. Research in this area has accelerated from 10 publications in the 1980s to 43 in the 2000s, and is geographically and culturally diverse, and includes 28 studies from Europe, 15 from the US, 6 from South Asia, 3 from the Middle East, 2 from East Asia, and 2 from South East Asia. Findings included that R/S can interact with schizophrenia symptoms (hallucination and delusions), that R/S can act as both a risk factor (26 studies) and a protective factor (24 studies), and that cultural influences tend to confound the association of religion and schizophrenia. The investigators argued that "the degree to which religion plays a positive or negative role in one's life depends on the individual and his or her interpretation of illness; therefore, a generic approach to religion in treatment is not recommended" (p. 159).

Smolak et al. (2013) systematically reviewed 43 studies of how schizophrenia is perceived by patients, families, and health service providers. They found that R/S themes were positively associated with coping, treatment engagement and help-seeking behavior, and affected perceptions of etiology.

Finally, Pesut et al. (2011) systematically reviewed studies of R/S and bipolar disease, finding 6 studies suggesting that R/S strategies may be important for some people in managing bipolar disorder, making R/S relevant to bio-psycho-social therapeutic approaches. However, the investigators called for more research, noting a methodological "dichotomy… between studies that focus primarily on hyper-religiosity and studies that focus on R/S as a resource [which] highlight the discrepancy between an orientation that emphasizes pathology and another that emphasizes building upon psychosocial resources" (p. 791).

Suicide   The emerging public health interest in mental health includes an interest in preventing suicide. The US Surgeon General issued a "Call to Action on Suicide Prevention" in 1999, and more than 300 mentions of suicide were contained in the Surgeon General's report on mental health issued that year (U.S. Department of Health and Human Services 1999, p. 4). The relation of R/S factors to suicide has been studied since Durkheim's (1951/1897) pioneering work in the late nineteenth century. Although Durkheim's early work has been subjected to criticism (e.g., Stark et al. 1983; Van Tubergen et al. 2005), it proved seminal for scientific awareness that social factors can affect seemingly individual outcomes.

In recent decades, a large body of empirical evidence has accumulated on R/S-suicide relations. Koenig et al. (2012, pp. 174–190, 721–727) identified 71 pre-2000 and 70 post-2000 quantitative studies of relations of R/S to suicidal attitudes, attempts, or completion. Of the 70 post-2000 studies, about two-thirds (k = 47) reported favorable associations, linking R/S factors to fewer completed suicides, fewer suicide attempts, or less positive attitudes toward suicide, whereas less than one-tenth (k = 6) reported unfavorable associations. While we did not identify any refereed reviews of the R/S-suicide literature as a whole, a systematic review of adolescent studies identified only one out of 20 studies that showed *any* unfavorable associations, while identifying 5 studies that showed only favorable associations, and 8 that showed a mixture of positive and non-significant associations (Dew et al. 2008).

Several studies that document protective relationships have used nationally representative US samples (Nonnemaker et al. 2003; Thompson et al. 2007). One prospectively followed US adults (n = 20,014) for 12–18 years, finding lower risk of completed suicide predicted by baseline attendance at religious services (hazard ratio [HR] = 0.32, p < 0.05), after adjusting for demographics and previous suicide attempts (Kleiman and Liu 2014). While most studies have been conducted in the US, some have been conducted elsewhere. Studies in non-US settings have documented protective relations in locations that include Canada, Mexico, the Netherlands, and South Africa (Hoffman and Marsiglia 2014; Pienaar et al. 2007; Rasic et al. 2009; Van Tubergen et al. 2005). Most studies have measured R/S at the individual level, but some have used community-level R/S measures (see this volume's chapter, "Social and Community-Level Factors in Health Effects from Religion/Spirituality").

R/S-Infused Mental Health Treatments   As noted elsewhere (chapter entitled "Public Health Education, Promotion, and Intervention: Relevance of Religion and Spirituality", this volume), numerous R/S-infused treatments have now been developed. Many of these were recently meta-analyzed by Worthington et al. (2011), who synthesized 46 published reports of spiritually infused psychotherapy, finding that R/S psychotherapies significantly outperformed both no-treatment controls (Cohen's d = 0.45 from k = 22 studies) and alternate secular psychotherapies (d = 0.26, k = 29) on psychological outcomes. Although trending in a favorable direction, R/S therapies did not show statistically significant advantages for psychological outcomes in a small number of dismantling design comparisons versus otherwise similar secular psychotherapies at either post-test (d = 0.13, CI[95%] = −0.26 to 0.52, p ≈ 0.51, k = 11) or follow-up (d = 0.22, CI = −0.09 to 0.52, p ≈ 0.16, k = 8).

Three recent psychiatrically-oriented reviews have also been conducted. Anderson et al. (2015) meta-analyzed studies (k = 16) of Christian, Muslim, and other "faith-adapted" cognitive and behavioral treatments (CBT) for depression, finding statistically significant benefits versus standard CBT as well as versus controls, but also finding methodological limitations that reduced the strength of the findings. A broadly similar conclusion was reached by Lim et al.'s (2014) systematic review of religiously adapted CBT randomized trials (k = 10). Gonçalves et al. (2015) examined effects reported by randomized controlled trials (k = 23) of R/S interventions involving "'messages to health' framed by themes of spiritual relevance…. such as taking care of the body God has provided" (p. 2938), yielding evidence for favorable effects related to meditation as well as psychotherapy, on outcomes that included general anxiety, alcoholism, depression, and stress, versus comparison conditions.

Broadly similar conclusions emerged from a meta-analysis by Smith et al. (2007) examined 31 studies of R/S adaptations to psychotherapy, finding an overall effect size of d = 0.56, an estimate that did not vary by study design, but was marginally larger (p = 0.08) for well-being outcomes (d = 0.96, from k = 4 studies) than for mental health symptoms (d = 0.58, k = 8) or multidimensional outcome assessments (d = 0.46, k = 19). However, a contrasting conclusion was supplied by another nearly decade-old investigation by Paukert et al. (2011), who systematically reviewed 11 studies of effects on depression and anxiety from R/S acommodative psychotherapy, finding no differences in effects of R/S-accommodative therapies versus equivalent non-R/S versions of the same therapies.

Pursuing a slightly different focus, Viftrup, Hvidt et al. (2013) systematically reviewed 8 studies of R/S-integrated *group* psychotherapy, finding that although all 8 studies showed positive effects from therapies, design constraints permitted as yet "no solid evidence for positive or direct outcomes of integrating religious and spiritual factors into group therapy" (p. 10).

These recent reviews, it should be noted, have built upon earlier systematic reviews in the 1980s and 1990s by Worthington and colleagues, who identified nearly 200 studies before 1996 that were relevant to R/S and psychotherapy, establishing basic findings such as that "religious people cannot be assumed to be mentally unhealthy," and that the value placed on religion by a counselor can "affect clinical judgment and behavior, especially with religious clients" (Worthington et al. 1996, p. 448; Worthington 1986).

Integrating R/S into Mental Healthcare Systems Since the early 1990s, changes have occurred in how R/S factors are conceptualized and handled in the US mental healthcare system. In 1994, the fourth edition of the authoritative psychiatric *Diagnostic and Statistical Manual* adopted a new conceptualization of R/S experiences, under the rubric of "Religious or Spiritual Problem" (Code V62.89). Advantages of the new conceptualization were argued to include better cultural sensitivity, better diagnosis when R/S issues are involved in psychiatric problems, improved treatment, improved training of clinicians, and reduced iatrogenic harm from misdiagnosis (Lukoff et al. 1998). This reconceptualization has opened up possibilities for state and local initiatives that attempt to further advance clinical sensitivity to relations between R/S and mental health. For example, in June 2008,

with funding from 40 of California's 58 county mental health authorities, the state of California adopted the California Mental Health and Spirituality Initiative. From its inception, the Initiative has been housed in the Center for Multicultural Development at the California Institute for Behavioral Health Services (CIBHS, http://www.cibhs.org). Its activities have included conferences and teleconferences, a website, community dialogues, development of online and face-to-face curricula, and surveys of county mental health directors, provider agencies, and individual and family mental health service recipients (Lukoff et al. 2009). Yamada et al. (2014) have described impacts on Los Angeles county, where more than 98% of the mental health centers offer options for spirituality-infused activities; and one-third offer spirituality=focused therapy groups.

In this new context, Koenig et al. (2012, pp. 207–208, 219–220) have described issues of clinically distinguishing R/S from psychosis: "Psychotic symptoms (delusions or hallucinations) are sometimes difficult to differentiate from culturally sanctioned religious beliefs or experiences. For example, a Pentecostal Christian may report that Jesus is speaking to her, or firmly believe that demons are causing troubles in her life. Others in her religious group might interpret this as completely acceptable, based on the theological teachings of the tradition. Someone not familiar with the particular religious tradition or subculture (i.e., a mental health professional) can easily misinterpret religious experiences as psychotic in a member of that tradition" (pp. 207–208). Indeed, empirical studies suggest that whether mystical or other R/S experiences reflect pathology may often not be determinable based solely on the nature of the R/S experiences (e.g., Stifler et al. 1993). However several types of clinical guidelines have been suggested to aid evaluation of R/S experiences, including the value of input from a religious professional of a patient's faith tradition, and the patient's level of self-awareness that their claims are likely to be regarded as extraordinary (Pierre 2001; Lukoff 1985, 2007).

Another manifestation of increased sensitivity to R/S in the field of mental health is that clinicians have begun to argue that the adverse effects on R/S itself that arise from mental illness should be recognized as notable *consequences*. Hathaway (2003) argues that just as clinicians are concerned about impairments to *social functioning* that arise from mental illness, they should also be concerned about impairments to *religious functioning*, such as a reduced ability to perform religious activities, achieve religious goals, or experience religious states, due to a psychological disorder.

In the related arena of psychological counseling, numerous studies have examined counseling client preferences for how R/S is addressed. A recent systematic review of client desires found that "client magnitude of spiritual beliefs, client gender, the match between the client and counselor's beliefs and values, type of therapy, and counselor openness to spiritual issues may be key factors that influence what clients want to talk about in counseling" (Harris et al. 2016, p. 250, who identified k = 29 empirical studies, n > 64,000).

A great deal of progress is still needed, however. More than a decade ago, Walker et al. (2004) meta-analyzed 26 studies that focused on how psychotherapists do or do not integrate R/S culture into psychotherapy. Findings showed that most thera-

pists surveyed (82%) rarely discussed spiritual or religious issues in training, and that personal religiousness was correlated with openness to discussing R/S issues in counseling (r = 0.39, p < 0.01). Recent surveys suggest that many psychologists still receive little training on R/S issues (Sauerheber et al. 2014; Shafranske and Cummings 2013).

R/S, Meditation/Mindfulness, and Mental Health A considerable body of empirical research has now examined the relation between meditation and/or mindfulness and health, as noted in other chapters in this volume (chapters "Health Policy and Management, Religion, and Spirituality", "Public Health Education, Promotion, and Intervention: Relevance of Religion and Spirituality", and "Clinical Practice, Religion, and Spirituality"). But as noted in this volume's earlier chapter entitled "Model of Individual Health Effects from Religion/Spirituality: Supporting Evidence", in its section on "Borderline Spiritual Constructs", the implications for R/S-health relations are unclear, partly because meditation and mindfulness exist in both spiritual and secular forms, and arguably cannot be regarded as practices that are inherently religious or spiritual.

Several meta-analyses and systematic reviews have focused on relations between meditation and mental health, finding primarily favorable relations. In *JAMA Internal Medicine*, Goyal et al. (2014) meta-analyzed randomized trials (k = 47) of mindfulness, mantra, and other meditation interventions for stressed or clinical populations, finding moderate evidence that mindfulness meditation, when compared to nonspecific controls (an efficacy analysis), had favorable effects on reducing anxiety (d = 0.38 at 8 weeks and d = 0.22 at 3–6 months, k = 7 trials), depression (d = 0.30 at 8 weeks and d = 0.23 at 3–6 months, k = 8), and pain (d = 0.33, k = 4).

Among healthy populations, a recent meta-analysis of participation in traditional meditation retreats revealed evidence for favorable effects from both concentrative and mindfulness forms of meditation on anxiety, depression, and other psychological outcomes, with no differences observed between meditation styles (Khoury et al. 2017, 20 total studies, with Hedge's g = 0.49 from k = 14 controlled studies).

Compassion and/or loving-kindness meditation interventions were the focus of a systematic review of 14 randomized trials (20 total studies) by Shonin et al. (2015, p. 1177), who found evidence for favorable effects on "a broad range of mental health issues in both clinical and healthy adult and non-adult populations," with findings that suggested favorable effects on psychological distress, positive and negative affect, thoughts and emotions, interpersonal skills, and empathic accuracy. Another systematic review reports evidence that meditation interventions can alleviate depression and burden from family caregivers of dementia patients (Hurley et al. 2014, a systematic review of k = 8 studies, 3 randomized).

Of empirical research on mindfulness, a considerable portion has focused on relations between mindfulness and outcomes among medical patients suffering from physical diseases (e.g., Bohlmeijer et al. 2010; Zainal et al. 2013). This literature has been discussed in the chapter "Clinical Practice, Religion, and Spirituality" (this volume), and suggests that mindfulness interventions can help medical patients avoid depression and maintain quality of life.

A great deal of mindfulness research has also focused directly on mental health or psychiatric outcomes in non-medical samples. Perhaps the largest volume of work has focused on depression, where approaches such as Mindfulness-Based Cognitive Therapy (MBCT) have been developed. Several meta-analyses and systematic reviews have examined effects of mindfulness-based interventions on depression. For example, Galante et al. (2013) meta-analyzed randomized controlled trials (n = 11) of effects from mindfulness-based cognitive therapy on mental disorders, finding reductions of relapse by patients with three or more previous major depressive episodes (HR = 0.61). Benefits from MBCT were also reported in an earlier meta-analysis by Chiesa and Seretti (2011).

Schizophrenia, bipolar disorder, and other mental illnesses have also been addressed with mindfulness-based interventions (MBIs). A recent meta-analysis by Khoury et al. (2013) investigated the use of MBIs for psychosis or schizophrenia, finding evidence from empirical studies (k = 13) for moderate-sized benefits that were more pronounced for preventing negative symptoms (diminished function) than positive symptoms (excess or distortion of normal functions). Similarly, Davis and Kurzban (2012) systematically reviewed quantitative (k = 10) and qualitative (k = 3) studies of MBIs for severe mental illness such as schizophrenia and bipolar disease, finding evidence for enhanced coping efficacy, reduced symptom-associated distress, and reduced psychiatric hospitalization. Reductions in rates of depression among patients with severe mental illnesses have also been documented. Klainin-Yobas et al. (2012),meta-analyzed studies (k = 39) of MBIs for depression among people with mental disorders ranging from binge eating to bipolar disorder and major depression, finding evidence for superiority to standard care. Similarly, a meta-analysis by Chiesa and Seretti (2011) noted reduced rates of depression among patients suffering from bipolar disorder and anxiety disorders.

Children and youth have also received meditation and mindfulness interventions. Black et al. (2009) systematically reviewed studies (k = 16), primarily randomized trials, of meditation among children and youth. Most samples (13/16) consisted entirely of students with learning difficulties, ADHD, high blood pressure, or other preexisting conditions. Median effect sizes from meditation were found to be "slightly smaller than those obtained from adult samples," with Cohen's d ranging from 0.27 to 0.70 for psychosocial/behavioral outcomes (p. e532). Similarly, Zoogman et al. (2015) meta-analyzed studies (k = 20) of mindfulness interventions among youth, finding evidence for modest benefits among non-clinical samples (Becker's *del* = 0.20), with significantly larger benefits among samples with clinical diagnoses such as ADHD, learning disorders, or externalizing or internalizing disorders (*del* = 0.50).

An important but understudied issue concerns the conditions that require the cultural or spiritual tailoring of meditation and mindfulness interventions for mental health. Evidence from both national surveys and within-subjects comparisons suggests that only a minority of US adults may prefer mindfulness meditation. For example, each month, an estimated 7.0 million US adults engage in some form of "spiritual meditation," nearly twice the number estimated to engage each month in mindfulness meditation (3.6 million, Burke et al. 2017, p. 1), yet the spiritual dimen-

sion is seldom explicitly addressed in meditation and mindfulness interventions in healthcare (for additional discussion see this volume's chapter on "Public Health Education, Promotion, and Intervention: Relevance of Religion and Spirituality", section on R/S and Meditation/Mindfulness Interventions).

Finally, considerable evidence also supports the mental health benefits of engaging in yoga, also characterized earlier in this volume as a borderline spiritual construct (chapter entitled "Model of Individual Health Effects from Religion/Spirituality: Supporting Evidence", this volume). Evidence for the mental health benefits of yoga has been summarized in several recent systematic reviews (e.g., Balasubramaniam et al. 2013; Vancampfort et al. 2012) (see also summaries of multiple reviews by Bussing et al. 2012; Macy et al. 2015).

1   Summary: Mental Health

Several ideas for application to public health practice are provided in Box 1. In summary, published literature relevant to R/S and mental health suggests the following:

- Overall mental health: In varying degrees, evidence supports favorable associations of R/S with lower rates of depression, anxiety, suicide, dementia, and

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Box 1: Ideas for Application to Public Health Practice: Mental Health
The concepts, regulations, and evidence reviewed in this chapter suggest diverse practical applications to management and practice in mental healthcare systems, such as:

✓ Be aware of the evidence base documenting many positive associations between R/S factors and mental health status and outcomes;
✓ Be aware that R/S factors show mixed associations with some mental health variables such as schizophrenia and bipolar disease;
✓ Be aware of the value of the substantial research base supporting meditative/mindfulness interventions, and of potential needs and resources for cultural and spiritual tailoring;
✓ Healthcare providers should consider employing or referring to R/S-infused mental health treatments, which have a strong evidence base;
✓ Healthcare managers should consider incorporating R/S information and skills into staff orientation and training to ensure compliance with relevant laws and regulations.

Please see chapters in Part II of this volume for in-depth discussion of the relevance of religion and spirituality to applied public health work. See Part I's first chapter for an overview of major application themes.

stress-related illness, and mixed relations with severe forms of mental illness such as schizophrenia and bipolar disease (Bonelli and Koenig 2013);

- Depression: R/S shows a small correlation with less depression, a finding that has appeared in the US and in other countries and cultures, and in both adolescents and adults (Yonker et al. 2012; Smith et al. 2003);
- Anxiety disorders: In the US and elsewhere, R/S most often correlates with lower anxiety among adults across diverse cultures, although findings have not been uniform (Ellison et al. 2009);
- Severe mental illness: R/S can interact with schizophrenia symptoms, functioning as either a risk factor or a protective factor (Gearing et al. 2011);
- Suicide: In the US and elsewhere, among both adolescents and adults, R/S tends to be associated with lower levels of suicidal ideation, suicide attempts, and completed suicide (Kleiman and Liu 2014);
- R/S-infused mental health treatments: Many R/S-tailored treatments have been offered in healthcare settings, and their effectiveness for improving psychological outcomes has been supported by meta-analyses (Worthington et al. 2011);
- Integrating R/S into mental healthcare systems: Respectful attention to R/S factors has been increasingly integrated into US healthcare systems, partly as a result of the reconceptualization of R/S in the *Diagnostic and Statistical Manual* (4th edition, 1994), as well as more recent initiatives in particular localities, but a great deal of work remains to be done (Lukoff et al. 1998; Shafranske and Cummings 2013; Yamada et al. 2014);
- R/S, meditation/mindfulness, and mental health: Meditation and mindfulness interventions exist in both spiritual and secular forms, and considerable evidence suggests favorable effects on mental health outcomes in a variety of healthy and clinical populations.

References

Abu Raiya, H., Pargament, K. I., Mahoney, A., & Stein, C. (2008). A psychological measure of Islamic religiousness: Development and evidence for reliability and validity. *The International Journal for the Psychology of Religion, 18*(4), 291–315. https://doi.org/10.1080/10508610802229270.

Abu-Raiya, H., Pargament, K. I., & Krause, N. (2016). Religion as problem, religion as solution: Religious buffers of the links between religious/spiritual struggles and well-being/mental health. *Quality of Life Research, 25*(5), 1265–1274. https://doi.org/10.1007/s11136-015-1163-8.

Anderson, N., Heywood-Everett, S., Siddiqi, N., Wright, J., Meredith, J., & McMillan, D. (2015). Faith-adapted psychological therapies for depression and anxiety: Systematic review and meta-analysis. *Journal of Affective Disorders, 176*, 183–196. https://doi.org/10.1016/j.jad.2015.01.019.

Atkins, M. S., & Frazier, S. L. (2011). Expanding the toolkit or changing the paradigm: Are we ready for a public health approach to mental health? *Perspectives on Psychological Science, 6*(5), 483–487. https://doi.org/10.1177/1745691611416996.

Balasubramaniam, M., Telles, S., & Doraiswamy, P. M. (2013). Yoga on our minds: A systematic review of yoga for neuropsychiatric disorders. *Frontiers in Psychiatry, 3*, 117. https://doi.org/10.3389/fpsyt.2012.00117.

Barber, B. K. (2001). Political violence, social integration, and youth functioning: Palestinian youth from the intifada. *Journal of Community Psychology, 29*(3), 259–280. https://doi.org/10.1002/jcop.1017.

Basoglu, M., Livanou, M., Crnobaric, C., Franciskovic, T., Suljic, E., Duric, D., et al. (2005). Psychiatric and cognitive effects of war in former Yugoslavia: Association of lack of redress for trauma and posttraumatic stress reactions. *Journal of the American Medical Association, 294*(5), 580–590. https://doi.org/10.1001/jama.294.5.580.

Benjamins, M. R. (2007). Predictors of preventive health care use among middle-aged and older adults in Mexico: The role of religion. *Journal of Cross-Cultural Gerontology, 22*(2), 221–234. https://doi.org/10.1007/s10823-007-9036-4.

Bergin, A. E. (1983). Religiosity and mental health: A critical reevaluation and meta-analysis. *Professional Psychology: Research & Practice, 14*(2), 170–184. https://doi.org/10.1037/0735-7028.14.2.170.

Beutel, M. E., Weidner, K., Schwarz, R., & Brähler, E. (2004). Age-related complaints in women and their determinants based on a representative community study. *European Journal of Obstetrics & Gynecology and Reproductive Biology, 117*(2), 204–212. https://doi.org/10.1016/j.ejogrb.2004.05.008.

Black, D. S., Milam, J., & Sussman, S. (2009). Sitting-meditation interventions among youth: A review of treatment efficacy. *Pediatrics, 124*(3), e532–e541. https://doi.org/10.1542/peds.2008-3434.

Bleich, A., Gelkopf, M., Melamed, Y., & Solomon, Z. (2005). Emotional impact of exposure to terrorism among young-old and old-old Israeli citizens. *American Journal of Geriatric Psychiatry, 13*(8), 705–712. https://doi.org/10.1176/appi.ajgp.13.8.705.

Bohlmeijer, E., Prenger, R., Taal, E., & Cuijpers, P. (2010). The effects of mindfulness-based stress reduction therapy on mental health of adults with a chronic medical disease: A meta-analysis. *Journal of Psychosomatic Research, 68*(6), 539–544. https://doi.org/10.1016/j.jpsychores.2009.10.005.

Bonelli, R. M., & Koenig, H. G. (2013). Mental disorders, religion and spirituality 1990 to 2010: A systematic evidence-based review. *Journal of Religion and Health, 52*(2), 657–673. https://doi.org/10.1007/s10943-013-9691-4.

Burke, A., Lam, C. N., Stussman, B., & Yang, H. (2017). Prevalence and patterns of use of mantra, mindfulness and spiritual meditation among adults in the United States. *BMC Complementary and Alternative Medicine, 17*(1), Article 316. https://doi.org/10.1186/s12906-017-1827-8.

Bussing, A., Michalsen, A., Khalsa, S. B. S., Telles, S., & Sherman, K. J. (2012). Effects of yoga on mental and physical health: A short summary of reviews. *Evidence-Based Complementary and Alternative Medicine, 2012*, 165410. https://doi.org/10.1155/2012/165410.

Chiesa, A., & Serretti, A. (2011). Mindfulness based cognitive therapy for psychiatric disorders: A systematic review and meta-analysis. *Psychiatry Research, 187*(3), 441–453. https://doi.org/10.1016/j.psychres.2010.08.011.

Cunningham, A.-M., & Knoester, C. (2007). Marital status, gender, and parents' psychological well-being. *Sociological Inquiry, 77*(2), 264–287. https://doi.org/10.1111/j.1475-682X.2007.00190.x.

Davis, L., & Kurzban, S. (2012). Mindfulness-based treatment for people with severe mental illness: A literature review. *American Journal of Psychiatric Rehabilitation, 15*(2), 202–232. https://doi.org/10.1080/15487768.2012.679578.

Dew, R. E., Daniel, S. S., Armstrong, T. D., Goldston, D. B., Triplett, M. F., & Koenig, H. G. (2008). Religion/spirituality and adolescent psychiatric symptoms: A review. *Child Psychiatry & Human Development, 39*(4), 381–398. https://doi.org/10.1007/s10578-007-0093-2.

Durkheim, E. (1951/1897). *Suicide, a study in sociology* (J. A. Spaulding, & G. Simpson, Trans.). Glencoe: Free Press. (originally published in 1897 in French as Le suicide).

Ellison, C. G., & Levin, J. S. (1998). The religion-health connection: Evidence, theory, and future directions. *Health Education & Behavior, 25*(6), 700–720. https://doi.org/10.1177/109019819802500603.

Ellison, C. G., Burdette, A. M., & Hill, T. D. (2009). Blessed assurance: Religion, anxiety, and tranquility among US adults. *Social Science Research, 38*(3), 656–667. https://doi.org/10.1016/j.ssresearch.2009.02.002.

Exline, J. J. (2013). Religious and spiritual struggles. In K. I. Pargament, J. J. Exline, & J. W. Jones (Eds.), *APA handbook of psychology, religion, and spirituality (Vol. 1): Context, theory, and research* (pp. 459–475). Washington, DC: American Psychological Association. https://doi.org/10.1037/14045-025.

Exline, J. J., Pargament, K. I., Grubbs, J. B., & Yali, A. M. (2014). The religious and spiritual struggles scale: Development and initial validation. *Psychology of Religion and Spirituality, 6*(3), 208–222. https://doi.org/10.1037/a0036465.

Eytan, A. (2011). Religion and mental health during incarceration: A systematic literature review. *Psychiatric Quarterly, 82*(4), 287–295. https://doi.org/10.1007/s11126-011-9170-6.

Galante, J., Iribarren, S. J., & Pearce, P. F. (2013). Effects of mindfulness-based cognitive therapy on mental disorders: A systematic review and meta-analysis of randomised controlled trials. *Journal of Research in Nursing, 18*(2), 133–155. https://doi.org/10.1177/1744987112466087.

Gearing, R. E., Alonzo, D., Smolak, A., McHugh, K., Harmon, S., & Baldwin, S. (2011). Association of religion with delusions and hallucinations in the context of schizophrenia: Implications for engagement and adherence. *Schizophrenia Research, 126*(1–3), 150–163. https://doi.org/10.1016/j.schres.2010.11.005.

Giles, W. H., & Collins, J. L. (2010). A shared worldview: Mental health and public health at the crossroads. *Preventing Chronic Disease, 7*(1), A02.

Gonçalves, J. P. B., Lucchetti, G., Menezes, P. R., & Vallada, H. (2015). Religious and spiritual interventions in mental health care: A systematic review and meta-analysis of randomized controlled clinical trials. *Psychological Medicine, 45*(14), 2937–2949. https://doi.org/10.1017/S0033291715001166.

Goyal, M., Singh, S., Sibinga, E. M. S., Gould, N. F., Rowland-Seymour, A., Sharma, R., et al. (2014). Meditation programs for psychological stress and well-being: A systematic review and meta-analysis. *JAMA Internal Medicine, 174*(3), 357–368. https://doi.org/10.1001/jamainternmed.2013.13018.

Hackney, C. H., & Sanders, G. S. (2003). Religiosity and mental health: A meta-analysis of recent studies. *Journal for the Scientific Study of Religion, 42*(1), 43–55. https://doi.org/10.1111/1468-5906.t01-1-00160.

Hahn, C.-Y., Yang, M.-S., Yang, M.-J., Shih, C.-H., & Lo, H.-Y. (2004). Religious attendance and depressive symptoms among community dwelling elderly in Taiwan. *International Journal of Geriatric Psychiatry, 19*(12), 1148–1154. https://doi.org/10.1002/gps.1204.

Harris, K. A., Randolph, B. E., & Gordon, T. D. (2016). What do clients want? Assessing spiritual needs in counseling: A literature review. *Spirituality in Clinical Practice, 3*(4), 250–275. https://doi.org/10.1037/scp0000108.

Hathaway, W. L. (2003). Clinically significant religious impairment. *Mental Health, Religion and Culture, 6*(2), 113–129. https://doi.org/10.1080/1367467021000038174.

Hill, P. C. (2003). Spiritual transformation: Forming the habitual center of personal energy. *Research in the Social Scientific Study of Religion, 13*, 87–108.

Hoffman, S., & Marsiglia, F. (2014). The impact of religiosity on suicidal ideation among youth in Central Mexico. *Journal of Religion and Health, 53*(1), 255–266. https://doi.org/10.1007/s10943-012-9654-1.

Hurley, R. V. C., Patterson, T. G., & Cooley, S. J. (2014). Meditation-based interventions for family caregivers of people with dementia: A review of the empirical literature. *Aging & Mental Health, 18*(3), 281–288. https://doi.org/10.1080/13607863.2013.837145.

Khoury, B., Lecomte, T., Gaudiano, B. A., & Paquin, K. (2013). Mindfulness interventions for psychosis: A meta-analysis. *Schizophrenia Research, 150*(1), 176–184. https://doi.org/10.1016/j.schres.2013.07.055.

Khoury, B., Knäuper, B., Schlosser, M., Carrière, K., & Chiesa, A. (2017). Effectiveness of traditional meditation retreats: A systematic review and meta-analysis. *Journal of Psychosomatic Research, 92*, 16–25. https://doi.org/10.1016/j.jpsychores.2016.11.006.

Klainin-Yobas, P., Cho, M. A. A., & Creedy, D. (2012). Efficacy of mindfulness-based interventions on depressive symptoms among people with mental disorders: A meta-analysis. *International Journal of Nursing Studies, 49*(1), 109–121. https://doi.org/10.1016/j.ijnurstu.2011.08.014.

Kleiman, E. M., & Liu, R. T. (2014). Prospective prediction of suicide in a nationally representative sample: Religious service attendance as a protective factor. *British Journal of Psychiatry, 204*(4), 262–266. https://doi.org/10.1192/bjp.bp.113.128900.

Kobau, R., Seligman, M. E. P., Peterson, C., Diener, E., Zack, M. M., Chapman, D., et al. (2011). Mental health promotion in public health: Perspectives and strategies from positive psychology. *American Journal of Public Health, 101*(8), e1–e9. https://doi.org/10.2105/AJPH.2010.300083.

Koenig, H. G. (2009). Research on religion, spirituality, and mental health: A review. *Canadian Journal of Psychiatry, 54*(5), 283–291. https://doi.org/10.1177/070674370905400502.

Koenig, H. G., McCullough, M. E., & Larson, D. B. (2001). *Handbook of religion and health*. New York: Oxford University Press.

Koenig, H. G., King, D. E., & Carson, V. B. (2012). *Handbook of religion and health* (2nd ed.). Oxford/New York: Oxford University Press.

Lim, C., Sim, K., Renjan, V., Sam, H. F., & Quah, S. L. (2014). Adapted cognitive-behavioral therapy for religious individuals with mental disorder: A systematic review. *Asian Journal of Psychiatry, 9*(20), 3–12. https://doi.org/10.1016/j.ajp.2013.12.011.

Lopes Cardozo, B., Bilukha, O. O., Gotway Crawford, C. A., Shaikh, I., Wolfe, M. I., Gerber, M. L., et al. (2004). Mental health, social functioning, and disability in postwar Afghanistan. *Journal of the American Medical Association, 292*(5), 575–584. https://doi.org/10.1001/jama.292.5.575.

Lukoff, D. (1985). The diagnosis of mystical experiences with psychotic features. *Journal of Transpersonal Psychology, 17*(2), 155–181.

Lukoff, D. (2007). Visionary spiritual experiences. *Southern Medical Journal, 100*(6), 635–641. https://doi.org/10.1002/9780470970300.ch16.

Lukoff, D., Lu, F., & Turner, R. (1998). From spiritual emergency to spiritual problem: The transpersonal roots of the new DSM-IV category. *Journal of Humanistic Psychology, 38*(2), 21–50. https://doi.org/10.1177/00221678980382003.

Lukoff, D., Mahler, J., & Mancuso, L. L. (2009, May/June). Spirituality and mental health: A consumer-driven holistic approach to recovery. *The California Psychologist, 14*, 16–18.

Macy, R. J., Jones, E., Graham, L. M., & Roach, L. (2015). Yoga for trauma and related mental health problems. *Trauma, Violence, & Abuse, 19*(1), 35–57. https://doi.org/10.1177/1524838015620834.

Matsushita, T., Murata, H., Matsushima, E., Sakata, Y., Miyasaka, N., & Aso, T. (2007). Emotional state and coping style among gynecologic patients undergoing surgery. *Psychiatry and Clinical Neurosciences, 61*(1), 84–93. https://doi.org/10.1111/j.1440-1819.2007.01615.x.

McConnell, K. M., Pargament, K. I., Ellison, C. G., & Flannelly, K. J. (2006). Examining the links between spiritual struggles and symptoms of psychopathology in a National Sample. *Journal of Clinical Psychology, 62*(12), 1469–1484. https://doi.org/10.1002/jclp.20325.

Meertens, V., Scheepers, P., & Tax, B. (2003). Depressive symptoms in the Netherlands 1975–1996: A theoretical framework and an empirical analysis of socio-demographic characteristics, gender differences and changes over time. *Sociology of Health & Illness, 25*(2), 208–231. https://doi.org/10.1111/1467-9566.00332.

Mouch, C. A., & Sonnega, A. J. (2012). Spirituality and recovery from cardiac surgery: A review. *Journal of Religion and Health, 51*(4), 1042–1060. https://doi.org/10.1007/s10943-012-9612-y.

Nonnemaker, J. M., McNeely, C. A., & Blum, R. W. (2003). Public and private domains of religiosity and adolescent health risk behaviors: Evidence from the national longitudinal study of adolescent health. *Social Science and Medicine, 57*(11), 2049–2054. https://doi.org/10.1016/S0277-9536(03)00096-0.

Pargament, K. I., Koenig, H. G., Tarakeshwar, N., & Hahn, J. (2001). Religious struggle as a predictor of mortality among medically ill elderly patients: A two-year longitudinal study. *Archives of Internal Medicine, 161*, 1881–1885. https://doi.org/10.1001/archinte.161.15.1881.

Paukert, A. L., Phillips, L. L., Cully, J. A., Romero, C., & Stanley, M. A. (2011). Systematic review of the effects of religion-accommodative psychotherapy for depression and anxiety. *Journal of Contemporary Psychotherapy, 41*(2), 99–108. https://doi.org/10.1007/s10879-010-9154-0.

Pesut, B., Clark, N., Maxwell, V., & Michalak, E. E. (2011). Religion and spirituality in the context of bipolar disorder: A literature review. *Mental Health, Religion & Culture, 14*(8), 785–796. https://doi.org/10.1080/13674676.2010.523890.

Pienaar, J., Rothmann, S., & van de Vijver, F. J. R. (2007). Occupational stress, personality traits, coping strategies, and suicide ideation in the south African police service. *Criminal Justice and Behavior, 34*(2), 246–258. https://doi.org/10.1177/0093854806288708.

Pierre, J. M. (2001). Faith or delusion: At the crossroads of religion and psychosis. *Journal of Psychiatric Practice, 7*(3), 163–172. https://doi.org/10.1097/00131746-200105000-00004.

Pirutinsky, S., Rosmarin, D. H., Pargament, K. I., & Midlarsky, E. (2011). Does negative religious coping accompany, precede, or follow depression among Orthodox Jews? *Journal of Affective Disorders, 132*(3), 401–405. https://doi.org/10.1016/j.jad.2011.03.015.

Rasic, D. T., Belik, S.-L., Elias, B., Katz, L. Y., Enns, M., & Sareen, J. (2009). Spirituality, religion and suicidal behavior in a nationally representative sample. *Journal of Affective Disorders, 114*(1–3), 32–40. https://doi.org/10.1016/j.jad.2008.08.007.

Reijneveld, S. A. (2005). Mental health as a public health issue. *European Journal of Public Health, 15*(2), 111. https://doi.org/10.1093/eurpub/cki088.

Satcher, D. (2000). Mental health: A report of the surgeon general--executive summary. *Professional Psychology: Research and Practice, 31*(1), 5–13. https://doi.org/10.1037/0735-7028.31.1.5.

Satcher, D., & Druss, B. G. (2010). Bridging mental health and public health. *Preventing Chronic Disease, 7*(1), A03.

Sauerheber, J. D., Holeman, V. T., Dean, J. B., & Haynes, J. (2014). Perceptions of counselor educators about spiritual competencies. *Journal of Psychology & Christianity, 33*(1), 70–83.

Schnittker, J. (2001). When is faith enough? The effects of religious involvement on depression. *Journal for the Scientific Study of Religion, 40*(3), 393–412. https://doi.org/10.1111/0021-8294.00065.

Shafranske, E. P., & Cummings, J. P. (2013). Religious and spiritual beliefs, affiliations, and practices of psychologists. In K. I. Pargament, A. Mahoney, & E. P. Shafranske (Eds.), *APA handbook of psychology, religion, and spirituality (Vol 2): An applied psychology of religion and spirituality* (pp. 23–41). Washington, DC: American Psychological Association. https://doi.org/10.1037/14046-002.

Shmueli, A., & Tamir, D. (2007). Health behavior and religiosity among Israeli Jews. *The Israel Medical Association Journal : IMAJ, 9*(10), 703–707.

Shonin, E., Van Gordon, W., Compare, A., Zangeneh, M., & Griffiths, M. (2015). Buddhist-derived loving-kindness and compassion meditation for the treatment of psychopathology: A systematic review. *Mindfulness, 6*(15), 1161–1180. https://doi.org/10.1007/s12671-014-0368-1.

Shvartzman, P., Weiner, Z., Vardy, D., Friger, M., Sherf, M., & Biderman, A. (2005). Health services utilization by depressive patients identified by the MINI questionnaire in a primary care setting. *Scandinavian Journal of Primary Health Care, 23*(1), 18–25. https://doi.org/10.1080/02813430510018383.

Smith, T. B., McCullough, M. E., & Poll, J. (2003). Religiousness and depression: Evidence for a main effect and the moderating influence of stressful life events. *Psychological Bulletin, 129*(4), 614–636. https://doi.org/10.1037/0033-2909.129.4.614.

Smith, T. B., Bartz, J., & Richards, P. S. (2007). Outcomes of religious and spiritual adaptations to psychotherapy: A meta-analytic review. *Psychotherapy Research, 17*(6), 643–655. https://doi.org/10.1080/10503300701250347.

Smolak, A., Gearing, R. E., Alonzo, D., Baldwin, S., Harmon, S., & McHugh, K. (2013). Social support and religion: Mental health service use and treatment of schizophrenia. *Community Mental Health Journal, 49*(4), 444–450. https://doi.org/10.1007/s10597-012-9536-8.

Stark, R., Doyle, D. P., & Rushing, J. L. (1983). Beyond Durkheim: Religion and suicide. *Journal for the Scientific Study of Religion, 22*(2), 120–131. https://doi.org/10.2307/1385672.

Stifler, K. R., Greer, J., Sneck, W., & Dovenmuehle, R. (1993). An empirical investigation of the discriminability of reported mystical experiences among religious contemplatives, psychotic inpatients, and normal adults. *Journal for the Scientific Study of Religion, 32*(4), 366–372. https://doi.org/10.2307/1387176.

Thompson, M. P., Ho, C.-H., & Kingree, J. B. (2007). Prospective associations between delinquency and suicidal behaviors in a nationally representative sample. *Journal of Adolescent Health, 40*(3), 232–237. https://doi.org/10.1016/j.jadohealth.2006.10.016.

U.S. Department of Health and Human Services. (1999). *Mental health: A report of the surgeon general*. Rockville: U.S. Department of Health and Human Services, Substance Abuse and Mental Health Services Administration, Center for Mental HealthServices,National Institutes of Health, National Institute of Mental Health.

Van Tubergen, F., Te Grotenhuis, M., & Ultee, W. (2005). Denomination, religious context, and suicide: Neo-Durkheimian multilevel explanations tested with individual and contextual data. *American Journal of Sociology, 111*(3), 797–823. https://doi.org/10.1086/497307.

Van Voorhees, B. W., Paunesku, D., Kuwabara, S. A., Basu, A., Gollan, J., Hankin, B. L., et al. (2008). Protective and vulnerability factors predicting new-onset depressive episode in a representative of U.S. adolescents. *Journal of Adolescent Health, 42*(6), 605–616. https://doi.org/10.1016/j.jadohealth.2007.11.135.

Vancampfort, D., Vansteelandt, K., Scheewe, T., Probst, M., Knapen, J., De Herdt, A., et al. (2012). Yoga in schizophrenia: A systematic review of randomised controlled trials. *Acta Psychiatrica Scandinavica, 126*(1), 12–20. https://doi.org/10.1111/j.1600-0447.2012.01865.x.

Viftrup, D. T., Hvidt, N. C., & Buus, N. (2013). Spiritually and religiously integrated group psychotherapy: A systematic literature review. *Evidence-Based Complementary and Alternative Medicine, 2013*, Article 274625. https://doi.org/10.1155/2013/274625

Walker, D. F., Gorsuch, R. L., & Tan, S.-Y. (2004). Therapists' integration of religion and spirituality in counseling: A meta-analysis. *Counseling & Values, 49*(1), 69–80. https://doi.org/10.1002/j.2161-007X.2004.tb00254.x.

Watson, P. J., Ghorbani, N., Davison, H. K., Bing, M. N., Hood, R. W., Jr., & Ghramaleki, A. F. (2002). Negatively reinforcing personal extrinsic motivations: Religious orientation, inner awareness, and mental health in Iran and the United States. *The International Journal for the Psychology of Religion, 12*(4), 255–276. https://doi.org/10.1207/S15327582IJPR1204_04.

Wickrama, K. A. S., & Wickrama, K. A. T. (2008). Family context of mental health risk in tsunami affected mothers: Findings from a pilot study in Sri Lanka. *Social Science and Medicine, 66*(4), 994–1007. https://doi.org/10.1016/j.socscimed.2007.11.012.

Wilt, J. A., Grubbs, J. B., Exline, J. J., & Pargament, K. I. (2016). Personality, religious and spiritual struggles, and well-being. *Psychology of Religion and Spirituality, 8*(4), 341–351. https://doi.org/10.1037/rel0000054.

Worthington, E. L. (1986). Religious counseling: A review of published empirical research. *Journal of Counseling & Development, 64*(7), 421–431. https://doi.org/10.1002/j.1556-6676.1986.tb01153.x.

Worthington, E. L., Hook, J. N., Davis, D. E., & McDaniel, M. A. (2011). Religion and spirituality. *Journal of Clinical Psychology, 67*(2), 204–214. https://doi.org/10.1002/jclp.20760.

Worthington, E. L., Kurusu, T. A., McCullough, M. E., & Sandage, S. J. (1996). Empirical research on religion and psychotherapeutic processes and outcomes: A 10-year review and research prospectus. *Psychological Bulletin, 119*(3), 448–487. https://doi.org/10.1037/0033-2909.119.3.448.

Wortmann, J. H., Park, C. L., & Edmondson, D. (2011). Trauma and PTSD symptoms: Does spiritual struggle mediate the link? *Psychological Trauma: Theory, Research, Practice, and Policy, 3*(4), 442–452. https://doi.org/10.1037/a0021413.

Wortmann, J. H., Park, C. L., & Edmondson, D. (2012). Spiritual struggle and adjustment to loss in college students: Moderation by denomination. *The International Journal for the Psychology of Religion, 22*(4), 303–320. https://doi.org/10.1080/10508619.2011.638605.

Yamada, A.-M., Subica, A. M., Kim, M. A., Van Nguyen, K., Lim, C. S., & Mancuso, L. L. (2014). State of spirituality-infused mental health Services in Los Angeles County wellness and client-run centers. *Administration and Policy in Mental Health and Mental Health Services Research, 41*(6), 835–844. https://doi.org/10.1007/s10488-014-0536-6.

Yonker, J. E., Schnabelrauch, C. A., & DeHaan, L. G. (2012). The relationship between spirituality and religiosity on psychological outcomes in adolescents and emerging adults: A meta-analytic review. *Journal of Adolescence, 35*(2), 299–314. https://doi.org/10.1016/j.adolescence.2011.08.010.

Zainal, N. Z., Booth, S., & Huppert, F. A. (2013). The efficacy of mindfulness-based stress reduction on mental health of breast cancer patients: A meta-analysis. *Psycho-Oncology, 22*(7), 1457–1465. https://doi.org/10.1002/pon.3171.

Zhou, W., & Xiao, S. (2015). Existing public health surveillance systems for mental health in China. *International Journal of Mental Health Systems, 9*, 3. https://doi.org/10.1186/1752-4458-9-3.

Zoogman, S., Goldberg, S. B., Hoyt, W. T., & Miller, L. (2015). Mindfulness interventions with youth: A meta-analysis. *Mindfulness, 6*(2), 290–302. https://doi.org/10.1007/s12671-013-0260-4.

Clinical Practice, Religion, and Spirituality

Doug Oman

Abstract This chapter reviews theories and empirical evidence on religious and spiritual (R/S) factors in clinical medicine. Conducting spiritual assessments is required in some settings by The Joint Commission for accreditation of healthcare organizations. Available published literature suggests that several dimensions of R/S predict better adherence to HIV treatment.

R/S factors have been linked to reduced surgical complications, length of hospital stay, and mortality, and improved physical functioning, quality of life, and psychological well-being among m medical patients. Spiritual struggles are related to poorer well-being. R/S factors show mixed cross-sectional associations are but are prospectively associated with less pain. Patients' perceive several R/S needs in healthcare settings that include spiritual practices; relationship with God; hope, meaning, purpose, and interpersonal connection. Several factors, such as retaining a place in community, support spiritual well-being in the palliative care context. Majorities of patients regard physician inquiries about R/S as appropriate in at least some circumstances, but physician inquiries appear to be infrequent and inadequate. R/S-related interventions with supporting evidence include several psychotherapeutic interventions, some formalized interventions for medical patients that draw on R/S resources, and R/S-related forms of meditation. Some R/S interventions can enhance effectiveness and reduce stress among health professionals. Patients in some R/S groups may request alternative treatments or reject standard treatments. Physician prayer with patients may be ethically problematic except under specific conditions.

This chapter is one of thirteen reviews in this volume providing a public health perspective on the empirical evidence relating R/S to physical and mental health.

Keywords Religion · Spirituality · Public health · Clinical medicine · Psychosocial well-being · Spiritual well-being · Spiritual interventions · Palliative care · Provider self-care · Religious coping

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Since its beginnings, public health has been concerned with the state of clinical practice, and for many years about 1% of public health students nationwide have been enrolled in dual degree programs combining public health and medicine (Schneider 2011; see chapter "Reviewing Religion/Spirituality Evidence from a Public Health Perspective: Introduction," this volume, Table 1). Ensuring the delivery of effective, efficient, and widely or universally available health services has long been a concern of public health. Most issues of health services administration are reviewed elsewhere in this volume (see chapter "Health Policy and Management, Religion, and Spirituality"), as are issues of clinical practice in mental health (see chapter "Mental Health, Religion, and Spirituality," this volume). In this chapter we examine theory and evidence for the relevance of R/S factors to clinical practice in medicine.

R/S is relevant to clinical medicine in several ways. As reviewed elsewhere in this volume, engagement in R/S by healthy people may prevent them from falling ill (e.g., see chapter "Religious/Spiritual Effects on Physical Morbidity and Mortality," this volume). But when people do fall ill, they may draw upon religion and spirituality as part of *coping* with their illness. If drawing upon R/S methods of coping helps people to more effectively respond to the various types of distress that accompany an illness, they may maintain better psychological well-being, which may in turn give them more energy to adhere to treatments and other positive health behaviors. The evidence reviewed in this chapter suggests that many of these processes do occur. The expectation of benefits from R/S coping is also consistent with the generic model for R/S effects on individual health that was presented in the earlier chapter entitled "Model of Individual Health Effects from Religion/Spirituality: Supporting Evidence" (this volume).

Various intervention strategies are suggested by this understanding of the implications of R/S. Ethical and legal constraints against physicians' imposing their personal R/S views on patients must of course be respected. But numerous patient-centered R/S interventions have been developed and studied. Many focus on formally or informally supporting patients in drawing upon their own pre-existing R/S beliefs or practices. Spiritual well-being is also an outcome dimension that has drawn increasing recognition and attention in the medical world. Although relevant to many types of medical care, spiritual well-being is especially relevant to palliative care and end-of-life care. Evidence also indicates that R/S factors can be helpful for the well-being and self-care of health providers themselves.

To review the literatures connected to these diverse processes and issues, the remainder of the present chapter is divided into 12 subsections. The first sections emphasize effects of R/S on adherence to treatment, physical outcomes, and pain. The next sections summarize key points from the large literatures examining R/S and psychosocial and spiritual well-being. The final sections give attention to various issues related to professional practice, such as conducting R/S assessments, physician-patient conversations, R/S interventions, and the phenomenon of religious rejection of treatments.

R/S and Adherence to Treatment A systematic review of US-based studies (k = 33) of patients living with HIV revealed largely favorable associations, supported by findings from at least a half-dozen separate studies, linking the R/S dimensions of private religious practices, positive R/S coping, and spiritual meaning, with better HIV treatment adherence and/or outcomes (Kendrick 2017, Table 2).

R/S, Physical Well-Being, and Physical Recovery Cancer patient physical symptoms and well-being were the focus of a meta-analysis by Jim et al. (2015) who reported that R/S measures predicted favorable symptom outcomes (z = 0.154), better functional well-being (z = 0.154), and better physical well-being (z = .098) (all ps < .001, derived from between 44 and 62 samples and between 119 and 242 effect size estimates; see also chapter on "Religious/Spiritual Effects on Physical Morbidity and Mortality," this volume). Similarly, cardiac surgery patient recovery was the focus of a systematic review by Mouch and Sonnega (2012) who found 16 studies indicating that spirituality was positively linked to physical and psychological post-operative recovery, as well as improved physical functioning and reduced surgical complications, length of hospital stay, and mortality. The meta-analysis also noted some mixed findings, underscoring that R/S effects on recovery are complex and "cannot be determined by a single measure" (p. 1053).

R/S and Pain As a coping resource, people may turn to R/S in times of greater pain, leading to positive associations between pain experience and coping-related dimensions of R/S in cross-sectional studies. But utilizing R/S coping may in turn affect how patients experience pain, potentially leading to more favorable prospective relations between R/S and pain. Koenig et al. (2012, pp. 518–519, 872–876) identified 50 studies examining how R/S factors and/or R/S interventions related to pain. Consistent with the possibility that people may turn to R/S during times of pain, of 31 studies that reported cross-sectional relations of R/S and pain, 7 reported that R/S was associated with less pain, 9 reported that R/S was associated with greater pain, 3 reported mixed association, and 12 reported null associations. However, consistent with the possibility that R/S coping may mitigate pain, of 14 prospective studies, 11 reported that R/S factors were favorably associated with lower levels of pain, two studies reported a null association, and only one reported that R/S factors were associated with higher pain levels. Of 9 higher-quality prospective studies (7 or more on a quality index), 7 reported favorable associations of R/S with less pain, one was unfavorable, and one reported null findings.

R/S and Patient Psychosocial Well-Being A comparatively large number of reviews has examined relations between R/S factors and psychological well-being in patient populations, generally finding positive associations. Two reviews have reported findings on mixed or general patient populations. First, Sawatzky et al. (2005) meta-analyzed the relationship between spirituality and quality of life, based on 48 published studies among both medical patients and healthy samples. Overall, spirituality was found to be modestly correlated with quality of life (r = 0.34, 95% CI: 0.28–0.40). In six studies that used disease-specific quality of life scales, they

found a statistically signigicant mean correlation of r = 0.49 (p < 0.0001) between spirituality and quality of life. Second, Hollywell and Walker (2009) systematically reviewed studies among hospital patients of the relationship between patient well-being and private prayer (i.e., by the patients themselves). Findings from 26 reports offered support for conceptualizing such prayer as "a coping action that mediates between religious faith and wellbeing" (p. 634), indicating that prayer frequency was often associated with less depression/anxiety, and that more devotional prayer (but less pleading prayer) is linked to improved optimism, wellbeing and function.

Two reviews have focused on R/S and cardiovascular disease. Mouch and Sonnega's (2012) systematic review, mentioned earlier, also investigated psychological outcomes among cardiac patients, finding some evidence that *spiritual struggles* may adversely affect psychological recovery (for spiritual struggles, see also chapter "Mental Health, Religion, and Spirituality," this volume). But in general, when used as a positive coping mechanism, Mouch and Sonnega (2012) found that spirituality may contribute to improved pre-operative optimism, less post-operative depression, and less post-operative distress. Employing a different methodology, Lamb et al. (2008) qualitatively meta-synthesized reports of the role of R/S factors among the elderly in recovery from cerebrovascular disease (stroke). They found 27 studies indicating that those raised in a spiritual tradition found strength in prayer and found spiritual connection leading to hope and confidence in the future.

Cancer patients' well-being and recovery and R/S have been the focus of two meta-analyses, one on mental health and the other on social health. Each found overall salutary associations for R/S, as well as salutary associations for specific R/S dimensions, especially affective and cognitive dimensions. The meta-analysis of cancer patient mental health and R/S was conducted by Salsman et al. (2015). Based on 148 studies, they found an overall positive correlation of mental health with R/S of z = 0.19 (Fisher's z, p < .001), with the strongest relation found between mental health and affective dimensions of R/S (z = 0.38, p < .001), a more moderate relation with cognitive R/S dimensions (z = .10, p < .001), and a nonsignificant relation with behavioral R/S dimensions. Second, the meta-analysis of social health and R/S was conducted by Sherman et al. (2015). Based on 78 studies, they found an overall positive correlation of social health with R/S of z = .20 (Fisher z, p < .001), as well as between social health and affective R/S dimensions (z = .31, p < .001), cognitive R/S dimensions (z = .10, p < .01), and behavioral R/S dimensions (z = .08, p < .05).

Cancer patient R/S and well-being have also been the focus of several systematic reviews. Most recently, Bai and Lazenby's (2015) systematic review of 36 studies – like the meta-analysis by Sawatsky et al. in general populations that was noted above – documented positive correlations between spiritual well-being and quality of life. Second, Schreiber and Brockopp (2012) systematically reviewed 18 studies of R/S and well-being relations among women with breast cancer. They reported that these studies support viewing R/S as playing a role in maintaining or increasing well-being among breast cancer survivors, and that assessing R/S can be clinically useful. More specific conclusions were not possible due to problems that included

the lack of shared R/S definitions, a need for better understanding of spiritual struggles, and insufficient attention to disease stage at diagnosis as a potential confounding factor. Third, Lin and Bauer-Wu (2003) systematically reviewed R/S and psycho-spiritual well-being among patients with advanced cancer. They identified 43 published studies from 14 countries in North America (n = 24), Europe (n = 11) Asia (n = 6), and Australia (n = 2). They found six recurring themes on the components of psycho-spiritual well-being: self-awareness, coping and adjusting effectively with stress, relationships and connectedness with others, sense of faith, sense of empowerment and confidence, and living with meaning and hope. Patients with an enhanced sense of psychospiritual well-being "are able to cope more effectively with the process of terminal illness and find meaning in the experience." (p. 78). Finally, Thune-Boyle et al. (2006) systematically reviewed the role of R/S factors in illness adjustment among cancer patients. They found 17 studies revealing mixed findings, generally based on poor methodology, which precluded drawing firm conclusions.

Sources of Spiritual Well-Being in Patients Because it has become widely conceived as an important outcome, one that is connected with other key outcomes, substantial attention has been directed to the constituents and conditions of spiritual well-being. A review by Best et al. (2015a, p. 1335) identified no fewer than 58 distinct measures of "spiritual suffering… or one of its synonyms or symptoms." Three reviews have qualitatively meta-synthesized various facets of this conceptually oriented literature. In two of these, Hodge and his colleagues have conducted meta-syntheses of patients' perceptions of their own needs in healthcare settings. Such information can inform the development of spiritual assessment instruments and guidelines. In one review, Hodge et al. (2012) meta-synthesized older adults' perceptions of their own needs in healthcare settings. Based on nine studies, five interrelated need-connected categories emerged: spiritual practices; relationship with God; hope, meaning, and purpose; interpersonal connection; and professional staff interactions. In a second meta-synthesis of a largely non-overlapping body of studies, Hodge and Horvath (2011) examined perceptions by clients (regardless of age) of their own spiritual needs in healthcare settings. Based on 11 studies, they found the same five recurring categories of need as reported in their review of older adults' perceptions, plus a sixth category: religious obligations (e.g., kosher or halal food).

In the third meta-synthesis, nursing scholars Lin et al. (2011) qualitatively meta-synthesized ten studies investigating spiritual well-being themes expressed by patients with rheumatoid arthritis. They found four recurring themes that "demonstrate specific characterizations of spiritual well-being in [rheumatoid arthritis] patients" (p. 8): living with the disease, reclaiming control, reframing the situation, and bolstering courage.

Spiritual Well-Being and Interventions at End of Life In palliative care at the end of life, the goal of treatment shifts from physical care to promoting pain reduction and quality of life. Although very few US schools of public health offer courses or substantial course material on end of life and palliative care, the World

Health Organization has developed plans for prioritizing palliative care as an important public health issue, and palliative care is well-integrated into the healthcare systems of dozens of countries worldwide (Lupu et al. 2013; Clark and Wright 2007; Stjernswärd et al. 2007) (see also chapter on "International and Global Perspectives on Spirituality, Religion, and Public Health," this volume). R/S factors are demonstrably relevant to the palliative care component of public health, as reflected in two qualitative meta-syntheses and several systematic reviews.

One systematic Cochrane database review by Candy et al. (2012) examined randomized controlled trials of end-of-life interventions with an R/S component. Five trials were identified, which were deemed to offer inconclusive evidence on whether the interventions under study, primarily conducted by palliative care teams that involve a chaplain or spiritual counsellor, were able to help patients feel emotionally supported. The authors called for additional studies that were more rigorous.

Other reviews have focused on non-experimental and qualitative studies. An earlier meta-synthesis by Williams (2006) examined end-of-life patients' perspectives on the relevance of spirituality. Based on 11 studies, the meta-synthesis reported that seven conditions were commonly reported as necessary for the ability to do "spiritual work" (p. 407) that can lead to spiritual health at the end of life. These seven conditions were: a positive outlook; involvement and control; finishing business; hope, goals, and ambitions; retaining social life and place in community; coping with and sharing emotions; and ability to communicate truthfully and honestly. Second, Edwards et al. (2010) examined the role of R/S factors and spiritual care in end-of-life and palliative care. Based on a qualitative meta-synthesis of 11 studies of patients and 8 studies of healthcare providers, they identified recurring themes related to the nature of spirituality, spiritual care, and facilitators and barriers to spiritual care. Findings confirmed the "substantial importance of spirituality and spiritual care" (p. 765), and identified barriers to spiritual care that included lack of time, personal, cultural or institutional factors, and needs among professionals for education.

More recently, Chakraborty et al. (2017) systematically reviewed studies of attitudes among adherents to five major world religions on various end-of-life concerns that included advanced directives, euthanasia and physician-assisted suicide, physical requirements such as artificial nutrition, hydration, and pain management, and autopsy practices. The investigators reviewed 45 empirical studies of adherents to Christianity, Islam, Hinduism, Buddhism, and/or Judaism. On most issues they reported that "a wide degree of heterogeneity was observed within religions, depending on the country of origin, level of education, and degree of intrinsic religiosity" (p. 609).

Expressing concern about possible cross-cultural differences in palliative care needs, Gielen et al. (2016) systematically reviewed studies of palliative care in India. Based on findings from six retrieved studies with a central focus on spiritual issues, these investigators identified three major spiritual dimensions or relevance to Indian palliative care: the relational dimension, the existential dimension, and the

values dimension. These studies also revealed that Indian patients made little distinction between religion and spirituality.

Finally, a systematic review by Cobb et al. (2012a) investigated the spiritual needs of palliative care patients. Based on 35 studies conducted in the US, Europe, Asia, and Australia, they reported that spirituality was viewed as largely beneficial, and has also been confirmed as a perceived need among palliative care patients, but that the published literature has been largely exploratory.

R/S Assessments of Patients Efforts to enhance patients' ability to draw on R/S resources have generated formal assessment and intervention protocols as well as a wealth of materials to guide clinicians in handling key issues related to R/S. One recurring theme has been arguments for the value of performing R/S assessments of medical patients, at least in specific circumstances. The capacity to perform such an assessment, sometimes called taking a "spiritual history," is now required by The Joint Commission (TJC, formerly known as JCAHO) for many types of healthcare organizations (Hodge 2006; Warnock 2009). Some have argued that performing such an assessment can be viewed as an R/S intervention, because it signals respect for the potential importance of R/S to the patient (Koenig 2000). Instruments for taking a spiritual history were recently systematically reviewed by Lucchetti et al. (2013), who found 25 instruments, of which five were validated.

A noteworthy investigation reported in the TJC's journal *Joint Commission Journal on Quality and Safety* described findings on spiritual and emotional needs and patient satisfaction from a national sample of more than 1.7 million inpatients (Clark et al. 2003). The investigators found a strong correlation between overall patient satisfaction and the degree to which staff had addressed spiritual and emotional needs (r = .75). The authors argue that addressing emotional needs is linked to addressing spiritual needs because both employ "behaviors and interventions of a similar nature—support, sensitivity, empathy, comfort, affirmation, and attentiveness to patients' unique needs" (p. 660).

The Joint Commission accreditation requirements include several standards that support the provision of care, treatment, and services in a manner that is conducive to the spiritual needs of individuals (Joint Commission 2006), such as that:

- [The] organization accommodates the right to pastoral and other spiritual services for patients/residents/clients (p. 2, Standard RI.2.10, applicable to hospital care, home care, long-term care, and behavioral healthcare);
- The organization defines in writing the data and information gathered during assessment and reassessment [including] the social, spiritual, and cultural variables that influence perceptions and expressions of grief by the patient, family members, or significant others (p. 5, Standard PC.2.20, applicable to hospital care and ambulatory care);
- To the extent possible, as appropriate to the patient's and family needs and the organization's services, interventions address patient and family comfort, dignity, and psychosocial, emotional, and spiritual needs, as appropriate, about death and grief (p. 8, Standard PC.8.70, applicable to hospital care, home care, and long-term care).

Doctor-Patient Conversations About R/S Since the early 2000s, much professional attention has addressed issues of whether and how physicians should discuss spiritual issues with patients. Numerous empirical studies, recently systematically reviewed, have now examined patient and physician experiences and attitudes about such discussions. In the first of two recent systematic reviews, Best et al. (2015b) identified 54 studies of patient attitudes toward such discussions (n = 12,327 total patients), published from 1991 through 2014. More than half of studies reported that a majority of patients (median 70%) thought that physician inquiries about spiritual needs were appropriate in at least some circumstances. However, the investigators found "a mismatch in perception between patients and doctors regarding what constitutes this discussion and therefore whether it has taken place" (p. 1320).

Similarly, studies of physician attitudes about such conversations were systematically reviewed by Best et al. (2016), who found 61 studies involving 20,044 total physicians, published from 1989 through 2014. Routine inquiries about patient spirituality, such as on the first visit, were "infrequent and inadequate" (p. 330), with studies reporting such inquiries by 16%–32% of physicians, and "where specified, 9%–63% [(median 34%) of] physicians often or always took a R/S history" (p. 330). The frequency of discussions was found to be higher with terminal illness, was facilitated by prior training and higher physician R/S, and the most commonly cited barriers were insufficient time and training.

R/S-Related Interventions for Patients On the more formal end of the spectrum of clinical resources for addressing R/S, one study has investigated effects from a formal protocol to address R/S in the clinical encounter. Kristeller et al. (2005) trained oncologists to administer a 5–7 min semi-structured exploration of R/S issues and sources of R/S support. Physicians were trained both in how to initiate conversations about R/S and how to bring timely closure to the conversation. After 3 weeks, patients receiving the intervention (n = 54) showed reduced depression, increased quality of life, and increased sense of interpersonal caring from their physician (p < .05), relative to control patients (n = 64). One quasi-randomized (alternating assignment) trial among hospitalized medical patients (n = 50) has also reported that chaplain visits led to significantly lower anxiety and depression at discharge (p < .05, Iler et al. 2001).

One of the few sustained research programs on a formalized R/S intervention in a medical context has been conducted by Jill Bormann and her colleagues at the Veterans Administration (Bormann et al. 2014). These investigators have studied a nonsectarian mantram repetition program as a self-management and coping intervention for patients with HIV, posttraumatic stress disorder (PTSD), and other diagnoses. Statistically significant findings from randomized trials include reduced psychological distress and symptom severity among PTSD patients, and reduced depression and improved quality of life among HIV patients. For psychotherapeutic rather than medical contexts, a wide range of R/S-infused therapies have also been studied (see chapter "Mental Health, Religion, and Spirituality," this volume).

More broadly, Koenig et al. (2012, pp. 936–940) listed more than 75 relevant publications from 2000 to 2009 on the topic of R/S and medical practice, including

two clinical trials, 35 cross-sectional studies, two retrospective studies, three quali-tative studies, 35 commentaries, and one set of recommended guidelines (Davidson et al. 2007). In addition, numerous books have been published in recent years as resources to support clinicians in integrating awareness of R/S factors into the clini-cal encounter (e.g., Koenig 2006; Cobb et al. 2012b). Some investigators have examined the efficacy of a self-study programs for clinicians to learn about R/S (Taylor et al. 2009), or done reviews of R/S in the education of clinicians (Cooper et al. 2013) (see chapter "Health Policy and Management, Religion, and Spirituality," this volume).

Kruizinga et al. (2016) meta-analyzed results from randomized spiritual inter-vention studies of cancer patients, including 12 studies that "addressed existential themes using a narrative approach" (p. 253). At 0–2 weeks after the intervention, they found a moderate-sized overall effect in favor of the spiritual interventions on quality of life (Cohen's d = 0.50, 95% CI = 0.20–0.79), but nonsignificant differ-ences at 3–6 months after the intervention.

R/S-derived forms of meditation have also shown promise as healthcare inter-ventions. Arias et al. (2006) conducted a broadly inclusive systematic review of meditation techniques from many different R/S traditions worldwide as treatments for medical illness, identifying 20 randomized controlled trials (RCTs), and varying degrees of evidence that offer support for the efficacy of meditation for treating mood and anxiety disorders, autoimmune illness, epilepsy, emotional disturbance, and menstrual and premenstrual syndrome symptoms.

Several systematic reviews, mentioned here for completeness, have also exam-ined the effects among medical patients of modernized mindfulness-based interven-tions, which are of uncertain spiritual classification (e.g., whether R/S versus secular classification – see chapter "Model of Individual Health Effects from Religion/ Spirituality: Supporting Evidence," this volume, section on "Borderline Spiritual Constructs"). Reviews have linked modern mindfulness interventions to improve-ments in physical health symptoms or conditions, including fibromyalgia, psoriasis, and multiple sclerosis (Mars and Abbey 2010; Simpson et al. 2014).

In addition, several systematic reviews or meta-analyses have examined modern-ized mindfulness meditation among cancer patients, finding up to nine randomized trials and evidence for reductions in depression and anxiety, and improved adjust-ment and other psychological outcomes, although more evidence may be needed to demonstrate physical health effects (Piet et al. 2012; Shennan et al. 2011; Ledesma and Kumano 2009; Smith et al. 2005; Zainal et al. 2013). Another meta-analysis examined modern mindfulness interventions across all available types of chronic disease patient populations (cancer, heart disease, fibromyalgia, rheumatoid arthri-tis, chronic lower back pain, chronic fatigue syndrome), finding eight randomized trials and evidence for small but significant reductions in depression and anxiety in high quality studies (Bohlmeijer et al. 2010). Yet another meta-analysis reported evidence for reductions in pain (Chiesa and Serretti 2011), and one qualitative meta-synthesis examined 14 studies of how mindfulness interventions shape patient experience, identifying several therapeutic processes that appear to be common across different patient groups and conditions (e.g., stepping back, confronting fears, and present focus – see Malpass et al. 2012).

R/S Interventions for Health Professional Self-Care and Effectiveness Evidence from several studies has documented beneficial effects on healthcare professionals from training in R/S-related forms of meditation. A randomized trial by Oman et al. (2006) studied effects on nurses, physicians, and other healthcare professionals from a non-sectarian, spiritually oriented system of meditation called Passage Meditation. They reported large stress reductions that persisted after 19 weeks (d = .80), as well as significant gains in compassion (d = .49), and in self-efficacy for performing relational caregiving tasks (d = .41) (Oman et al. 2008, 2010). Several studies have also examined effects on health professionals from training in Mindfulness-Based Stress Reduction (MBSR, Kabat-Zinn 1990), a method whose spiritual status has been debated (see chapter "Model of Individual Health Effects from Religion/Spirituality: Supporting Evidence," this volume, section on "Borderline Spiritual Constructs"). A review by Irving et al. (2009) identified ten studies, including four randomized trials, examining the effectiveness of MBSR on trainees and clinicians. The evidence suggested that mindfulness training "can serve as a viable tool for the promotion of self-care and well-being" (p. 65), but the authors noted the existence of many unanswered questions on the mechanisms that lead to such benefits. A variety of studies have also examined how health professionals can be effectively trained to address R/S factors (see chapter "Health Policy and Management, Religion, and Spirituality," this volume). Unfortunately, chaplains, the health professionals who currently receive the most training in R/S issues, often experience high stress levels and burnout, although a systematic review found that mitigating factors included maintaining "an active, healthy spiritual life to mitigate burnout" (Doolittle 2015, p. 191, k = 9 studies).

R/S-Based Rejection of Standard Medical Procedures It is well known that some religious groups may reject specific treatments. For example, many Jehovah's Witnesses reject blood transfusions (Singelenberg 1990). Other groups, such as Christian Scientists, may reject many or all modern medical procedures, including preventive steps such as immunization (Grabenstein 2013). Precisely how to respond to religiously motivated rejection of standard treatment remains a topic of ongoing ethical discussion (e.g., Bock 2008). Many historical and conceptual resources are available (e.g., Drane 2004; Fuller 2004, 1989). Although comprehensive reference works do not exist, systematic overviews across traditions are available for some specific topics, such as immunization and issues related to the end of life (Bülow et al. 2008; Campbell 1992; Grabenstein 2013).

Prayers with Patients One question of special concern in recent years is the conditions under which it is appropriate for physicians to pray *with* patients. Some have suggested such prayer as a potentially important part of the clinical relationship or the treatment. Since the late 1990s, the appropriateness of such prayer has been the focus of much professional discussion and several surveys of attitudes among patients and physicians. A summary of major empirical studies of attitudes was recently offered by Balboni et al. (2011). Avoiding the reality or appearance of the coercion of patients into prayer is an important concern. In a widely cited paper, Post et al. (2000) specified conditions that they suggested are necessary for

physician-led prayer to be acceptable, including that the patient is intent on prayer with the physician, and that pastoral care – care by a chaplain or other religious professional – is not readily available (for an overview of ethical issues see Q7 in the chapter entitled "Questions on Assessing the Evidence Linking Religion/ Spirituality to Health," this volume).

Intercessory Prayer Some studies have investigated whether prayer conducted at a distance on behalf of patients – often called intercessory prayer – can favorably influence the course of disease. A meta-analysis of 15 studies (5166 total subjects) by Masters and Spielmans (2007) concluded that "there is no scientifically discernable effect for distant intercessory prayer on health" (p. 331), and that there was no evidence that findings were moderated by design variables such as random assignment to conditions, daily versus less frequent prayer, or duration of the prayer intervention. They further noted that intercessory prayer studies have been criticized on the basis of a variety of methodological, ethical, theoretical, and theological considerations. An earlier review of the somewhat broader category of "distant healing" experiments had also failed to find solid evidence for effects (Ernst 2003; see also chapter "Model of Individual Health Effects from Religion/Spirituality: Supporting Evidence," this volume, section on "Effects from Prayer").

Summary: Clinical Practice
Several ideas for application to public health practice are provided in Box 1. In summary, published literature relevant to public health perspectives on R/S and clinical practice suggests that

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Box 1: Ideas for Application to Public Health Practice: Clinical Practice
The concepts, resources, and evidence reviewed in this chapter suggest diverse practical applications to clinical practice, such as:

- ✓ Be aware of favorable associations between R/S factors and variables such as quality of life, psychosocial well-being, and adherence to some types of treatments;
- ✓ Learn best practices for employing R/S assessments, especially as a component of the patient intake process;
- ✓ Learn skills in provider/patient conversations about R/S – both how to initiate such conversations and how to bring timely closure;
- ✓ Be prepared that members of some R/S groups may resist or reject certain types of treatments, and be aware of resources to guide appropriate responses;
- ✓ Provide or refer to R/S-infused treatments when appropriate;
- ✓ Be aware of R/S intervention resources for professional self-care, and of potential benefits for effectiveness.

Please see chapters in Part II of this volume for in-depth discussion of the relevance of religion and spirituality to applied public health work. See Part I's first chapter for an overview of major application themes.

- Adherence to HIV treatment: Private religious practices, positive R/S coping, and spiritual meaning have been linked to better adherence to and/or outcomes from HIV treatment (Kendrick 2017);
- R/S and physical recovery: R/S factors have been linked to improved physical functioning and reduced surgical complications, length of hospital stay, and mortality, although patterns are sometimes mixed (Mouch and Sonnega 2012);
- R/S and pain: R/S factors are commonly associated with less pain in prospective studies, but show more mixed relations in cross-sectional studies, perhaps because people turn to religion/spirituality during times of pain (i.e., reverse causality) (Koenig et al. 2012);
- R/S and patient psychosocial well-being: R/S factors have shown positive correlations with quality of life and psychological well-being among general groups of medical patients as well as among specific groups such as cardiac, stroke, and cancer patients, although spiritual struggles are related to poorer well-being;
- Sources of spiritual well-being in patients: Perceived R/S needs in healthcare settings commonly relate to spiritual practices; relationship with God; hope, meaning, and purpose; interpersonal connection; professional staff interactions, and sometimes religious obligations (Hodge and Horvath 2011);
- Spiritual well-being at end of life: R/S issues acquire high salience in the context of palliative care, and research has identified several factors that support spiritual well-being in the palliative care context (Williams 2006);
- R/S assessments of patients: Conducting spiritual assessments has been widely suggested as useful in many circumstances, and is required in some settings by The Joint Commission; several validated instruments are available (Lucchetti et al. 2013);
- Doctor-patient conversations: Most studies report that majorities of patients regard physician inquiries about R/S as appropriate in at least some circumstances, but physician inquiries appear to be infrequent and inadequate (Best et al. 2015b, 2016);
- R/S-related interventions for patients: Many forms of R/S psychotherapeutic interventions have been studied (see chapter on "Mental Health, Religion, and Spirituality," this volume), some formalized interventions have been developed for helping medical patients draw on R/S resources (Bormann et al. 2014; Kristeller et al. 2005), and evidence supports a variety of benefits for patients from R/S-related forms of meditation (Arias et al. 2006);
- R/S interventions for health professional self-care and effectiveness: Evidence also suggests that some R/S interventions can enhance effectiveness and reduce stress among health professionals (Irving et al. 2009; Oman et al. 2008);
- Patients in some R/S groups may request alternative treatments or reject standard treatments; While some resources are available, the ethics of responding to such requests are complex and continue to evolve (Bock 2008; Bülow et al. 2008; Grabenstein 2013);
- Physician prayer with patients is likely to be ethically problematic except under certain specific conditions, and current evidence does not offer scientific support for distant intercessory prayer as an effective healing modality (Masters and Spielmans 2007; Post et al. 2000).

References

Arias, A. J., Steinberg, K., Banga, A., & Trestman, R. L. (2006). Systematic review of the efficacy of meditation techniques as treatments for medical illness. *Journal of Alternative and Complementary Medicine, 12*(8), 817–832. https://doi.org/10.1089/acm.2006.12.817.

Bai, M., & Lazenby, M. (2015). A systematic review of associations between spiritual well-being and quality of life at the scale and factor levels in studies among patients with cancer. *Journal of Palliative Medicine, 18*(3), 286–298. https://doi.org/10.1089/jpm.2014.0189.

Balboni, M. J., Babar, A., Dillinger, J., Phelps, A. C., George, E., Block, S. D., et al. (2011). "It depends": Viewpoints of patients, physicians, and nurses on patient-practitioner prayer in the setting of advanced cancer. *Journal of Pain and Symptom Management, 41*(5), 836–847. https://doi.org/10.1016/j.jpainsymman.2010.07.008.

Best, M., Aldridge, L., Butow, P., Olver, I., Price, M., & Webster, F. (2015a). Assessment of spiritual suffering in the cancer context: A systematic literature review. *Palliative and Supportive Care, 13*(5), 1335–1361. https://doi.org/10.1017/S1478951514001217.

Best, M., Butow, P., & Olver, I. (2015b). Do patients want doctors to talk about spirituality? A systematic literature review. *Patient Education and Counseling, 98*(11), 1320–1328. https://doi.org/10.1016/j.pec.2015.04.017.

Best, M., Butow, P., & Olver, I. (2016). Doctors discussing religion and spirituality: A systematic literature review. *Palliative Medicine, 30*(4), 327–337. https://doi.org/10.1177/0269216315600912.

Bock, G. L. (2008). Medically valid religious beliefs. *Journal of Medical Ethics, 34*(6), 437–440. https://doi.org/10.1136/jme.2007.021964.

Bohlmeijer, E., Prenger, R., Taal, E., & Cuijpers, P. (2010). The effects of mindfulness-based stress reduction therapy on mental health of adults with a chronic medical disease: A meta-analysis. *Journal of Psychosomatic Research, 68*(6), 539–544. https://doi.org/10.1016/j.jpsychores.2009.10.005.

Bormann, J. E., Weinrich, S., Allard, C. B., Beck, D., Johnson, B. D., & Holt, L. C. (2014). Mantram repetition: An evidence-based complementary practice for military personnel and veterans in the 21st century. *Annual Review of Nursing Research, 32*, 79–108. https://doi.org/10.1891/0739-6686.32.79.

Bülow, H.-H., Sprung, C., Reinhart, K., Prayag, S., Du, B., Armaganidis, A., et al. (2008). The world's major religions' points of view on end-of-life decisions in the intensive care unit. *Intensive Care Medicine, 34*(3), 423–430. https://doi.org/10.1007/s00134-007-0973-8.

Campbell, C. S. (1992). Religious ethics and active euthanasia in a pluralistic society. *Kennedy Institute of Ethics Journal, 2*(3), 253–277. https://doi.org/10.1353/ken.0.0163.

Candy, B., Jones, L., Varagunam, M., Speck, P., Tookman, A., & King, M. (2012). Spiritual and religious interventions for well-being of adults in the terminal phase of disease. *Cochrane Database of Systematic Reviews, 2012*(5), 1–53. https://doi.org/10.1002/14651858.CD007544.pub2.

Chakraborty, R., El-Jawahri, A. R., Litzow, M. R., Syrjala, K. L., Parnes, A. D., & Hashmi, S. K. (2017). A systematic review of religious beliefs about major end-of-life issues in the five major world religions. *Palliative and Supportive Care, 15*(5), 609–622. https://doi.org/10.1017/S1478951516001061.

Chiesa, A., & Serretti, A. (2011). Mindfulness-based interventions for chronic pain: A systematic review of the evidence. *The Journal of Alternative and Complementary Medicine, 17*(1), 83–93. https://doi.org/10.1089/acm.2009.0546.

Clark, P. A., Drain, M., & Malone, M. P. (2003). Addressing patients' emotional and spiritual needs. *Joint Commission Journal on Quality and Safety, 29*(12), 659–670. https://doi.org/10.1016/S1549-3741(03)29078-X.

Clark, D., & Wright, M. (2007). The international observatory on end of life care: A global view of palliative care development. *Journal of Pain and Symptom Management, 33*(5), 542–546. https://doi.org/10.1016/j.jpainsymman.2007.02.010.

Cobb, M., Dowrick, C., & Lloyd-Williams, M. (2012a). What can we learn about the spiritual needs of palliative care patients from the research literature? *Journal of Pain and Symptom Management, 43*(6), 1105–1119. https://doi.org/10.1016/j.jpainsymman.2011.06.017.

Cobb, M., Puchalski, C. M., & Rumbold, B. (Eds.). (2012b). *Oxford textbook of spirituality in healthcare*. New York: Oxford University Press.

Cooper, K. L., Chang, E., Sheehan, A., & Johnson, A. (2013). The impact of spiritual care education upon preparing undergraduate nursing students to provide spiritual care. *Nurse Education Today, 33*(9), 1057–1061. https://doi.org/10.1016/j.nedt.2012.04.005.

Davidson, J. E., Powers, K., Hedayat, K. M., Tieszen, M., Kon, A. A., Shepard, E., et al. (2007). Clinical practice guidelines for support of the family in the patient-centered intensive care unit: American College of Critical Care Medicine Task Force 2004–2005. *Critical Care Medicine, 35*(2), 605–622. https://doi.org/10.1097/01.CCM.0000254067.14607.EB.

Doolittle, B. R. (2015). Burnout, compassion fatigue, and job satisfaction among hospital chaplains: A systematic review. *Research in the Social Scientific Study of Religion, 26*, 180–197. https://doi.org/10.1163/9789004299436_013.

Drane, J. F. (2004). Alternative therapies II: Ethical and legal issues. In S. G. Post (Ed.), *Encyclopedia of bioethics Vol. 1 (A–C)* (3rd ed., pp. 157–165). New York: Macmillan.

Edwards, A., Pang, N., Shiu, V., & Chan, C. (2010). The understanding of spirituality and the potential role of spiritual care in end-of-life and palliative care: A meta-study of qualitative research. *Palliative Medicine, 24*(8), 753–770. https://doi.org/10.1177/0269216310375860.

Ernst, E. (2003). Distant healing – An "update" of a systematic review. *Wiener Klinische Wochenschrift, 115*(7–8), 241–245. https://doi.org/10.1007/BF03040322.

Fuller, R. C. (1989). *Alternative medicine and American religious life*. New York: Oxford University Press.

Fuller, R. C. (2004). Alternative therapies I: Social history. In S. G. Post (Ed.), *Encyclopedia of bioethics Vol. 1 (A–C)* (3rd ed., pp. 149–157). New York: Macmillan.

Gielen, J., Bhatnagar, S., & Chaturvedi, S. K. (2016). Spirituality as an ethical challenge in Indian palliative care: A systematic review. *Palliative and Supportive Care, 14*(5), 561–582. https://doi.org/10.1017/S147895151500125X.

Grabenstein, J. D. (2013). What the World's religions teach, applied to vaccines and immune globulins. *Vaccine, 31*(16), 2011–2023. https://doi.org/10.1016/j.vaccine.2013.02.026.

Hodge, D. R. (2006). A template for spiritual assessment: A review of the JCAHO requirements and guidelines for implementation. *Social Work, 51*(4), 317–326.

Hodge, D. R., & Horvath, V. E. (2011). Spiritual needs in health care settings: A qualitative meta-synthesis of clients' perspectives. *Social Work, 56*(4), 306–316.

Hodge, D. R., Horvath, V. E., Larkin, H., & Curl, A. L. (2012). Older adults' spiritual needs in health care settings: A qualitative meta-synthesis. *Research on Aging, 34*(2), 131–155. https://doi.org/10.1177/0164027511411308.

Hollywell, C., & Walker, J. (2009). Private prayer as a suitable intervention for hospitalised patients: A critical review of the literature. *Journal of Clinical Nursing, 18*(5), 637–651. https://doi.org/10.1111/j.1365-2702.2008.02510.x.

Iler, W. L., Obenshain, D., & Camac, M. (2001). The impact of daily visits from chaplains on patients with chronic obstructive pulmonary disease (COPD): A pilot study. *Chaplaincy Today, 17*(1), 5–11. https://doi.org/10.1080/10999183.2001.10767153.

Irving, J. A., Dobkin, P. L., & Park, J. (2009). Cultivating mindfulness in health care professionals: A review of empirical studies of mindfulness-based stress reduction (MBSR). *Complementary Therapies in Clinical Practice, 15*(2), 61–66. https://doi.org/10.1016/j.ctcp.2009.01.002.

Jim, H. S. L., Pustejovsky, J. E., Park, C. L., Danhauer, S. C., Sherman, A. C., Fitchett, G., et al. (2015). Religion, spirituality, and physical health in cancer patients: A meta-analysis. *Cancer, 121*(21), 3760–3768. https://doi.org/10.1002/cncr.29353.

Joint Commission. (2006). *Joint Commission 2006 requirements related to the provision of culturally and linguistically appropriate health care* (Joint Commission standards supporting the provision of culturally and linguistically appropriate services). Oakbrook Terrace: Joint Commission on Accreditation of Healthcare Organizations.

Kabat-Zinn, J. (1990). *Full catastrophe living*. New York: Delacorte Press.

Kendrick, H. M. (2017). Are religion and spirituality barriers or facilitators to treatment for HIV: A systematic review of the literature. *AIDS Care, 29*(1), 1–13. https://doi.org/10.1080/09540121.2016.1201196.

Koenig, H. G. (2000). Religion, spirituality, and medicine: Application to clinical practice. Journal of the American Medical Association, 284(13), 1708. https://doi.org/10.1001/jama.284.13.1708-JMS1004-5-1.

Koenig, H. G. (2006). *Spirituality in patient care: Why, how, when, and what* (2nd ed.). West Conshohocken: Templeton Press.

Koenig, H. G., King, D. E., & Carson, V. B. (2012). Handbook of religion and health (2nd ed.). Oxford: Oxford University Press.

Kristeller, J. L., Rhodes, M., Cripe, L. D., & Sheets, V. (2005). Oncologist assisted spiritual intervention study (OASIS): Patient acceptability and initial evidence of effects. *International Journal of Psychiatry in Medicine, 35*(4), 329–347. https://doi.org/10.2190/8AE4-F01C-60M0-85C8.

Kruizinga, R., Hartog, I. D., Jacobs, M., Daams, J. G., Scherer-Rath, M., Schilderman, J. B. A. M., et al. (2016). The effect of spiritual interventions addressing existential themes using a narrative approach on quality of life of cancer patients: A systematic review and meta-analysis. *Psycho-Oncology, 25*(3), 253–265. https://doi.org/10.1002/pon.3910.

Lamb, M., Buchanan, D., Godfrey, C. M., Harrison, M. B., & Oakley, P. (2008). The psychosocial spiritual experience of elderly individuals recovering from stroke: A systematic review. *International Journal of Evidence-Based Healthcare, 6*(2), 173–205. https://doi.org/10.1111/j.1744-1609.2008.00079.x.

Ledesma, D., & Kumano, H. (2009). Mindfulness-based stress reduction and cancer: A meta-analysis. *Psycho-Oncology, 18*(6), 571–579. https://doi.org/10.1002/pon.1400.

Lin, H.-R., & Bauer-Wu, S. M. (2003). Psycho-spiritual well-being in patients with advanced cancer: An integrative review of the literature. *Journal of Advanced Nursing, 44*(1), 69–80. https://doi.org/10.1046/j.1365-2648.2003.02768.x.

Lin, W.-C., Gau, M.-L., Lin, H.-C., & Lin, H.-R. (2011). Spiritual well-being in patients with rheumatoid arthritis. *Journal of Nursing Research, 19*(1), 1–12. https://doi.org/10.1097/JNR.0b013e31820b0f8c.

Lucchetti, G., Bassi, R. M., & Lucchetti, A. L. G. (2013). Taking spiritual history in clinical practice: A systematic review of instruments. *Explore: The Journal of Science and Healing, 9*(3), 159–170. https://doi.org/10.1016/j.explore.2013.02.004.

Lupu, D., Deneszczuk, C., Leystra, T., McKinnon, R., & Seng, V. (2013). Few U.S. public health schools offer courses on palliative and end-of-life care policy. *Journal of Palliative Medicine, 16*(12), 1582–1587. https://doi.org/10.1089/jpm.2013.0161.

Malpass, A., Carel, H., Ridd, M., Shaw, A., Kessler, D., Sharp, D., et al. (2012). Transforming the perceptual situation: A meta-ethnography of qualitative work reporting patients' experiences of mindfulness-based approaches. *Mindfulness, 3*(1), 60–75. https://doi.org/10.1007/s12671-011-0081-2.

Mars, T. S., & Abbey, H. (2010). Mindfulness meditation practise as a healthcare intervention: A systematic review. *International Journal of Osteopathic Medicine, 13*(2), 56–66. https://doi.org/10.1016/j.ijosm.2009.07.005.

Masters, K. S., & Spielmans, G. I. (2007). Prayer and health: Review, meta-analysis, and research agenda. *Journal of Behavioral Medicine, 30*(4), 329–338. https://doi.org/10.1007/s10865-007-9106-7.

Mouch, C. A., & Sonnega, A. J. (2012). Spirituality and recovery from cardiac surgery: A review. *Journal of Religion and Health, 51*(4), 1042–1060. https://doi.org/10.1007/s10943-012-9612-y.

Oman, D., Hedberg, J., & Thoresen, C. E. (2006). Passage meditation reduces perceived stress in health professionals: A randomized, controlled Trial. *Journal of Consulting and Clinical Psychology, 74*(4), 714–719. https://doi.org/10.1037/0022-006X.74.4.714.

Oman, D., Richards, T. A., Hedberg, J., & Thoresen, C. E. (2008). Passage meditation improves caregiving self-efficacy among health professionals: A randomized trial and qualitative assessment. *Journal of Health Psychology, 13*(8), 1119–1135. https://doi.org/10.1177/1359105308095966.

Oman, D., Thoresen, C. E., & Hedberg, J. (2010). Does passage meditation foster compassion-
ate love among health professionals? A randomized trial. *Mental Health, Religion & Culture,
13*(2), 129–154. https://doi.org/10.1080/13674670903261954.

Piet, J., Wurtzen, H., & Zachariae, R. (2012). The effect of mindfulness-based therapy on symp-
toms of anxiety and depression in adult cancer patients and survivors: A systematic review and
meta-analysis. *Journal of Consulting and Clinical Psychology, 80*(6), 1007–1020. https://doi.
org/10.1037/a0028329.

Post, S. G., Puchalski, C. M., & Larson, D. B. (2000). Physicians and patient spirituality:
Professional boundaries, competency, and ethics. *Annals of Internal Medicine, 132*(7), 578–
583. https://doi.org/10.7326/0003-4819-132-7-200004040-00010.

Salsman, J. M., Pustejovsky, J. E., Jim, H. S. L., Munoz, A. R., Merluzzi, T. V., George, L., et al.
(2015). A meta-analytic approach to examining the correlation between religion/spirituality
and mental health in cancer. *Cancer, 121*(21), 3769–3778. https://doi.org/10.1002/cncr.29350.

Sawatzky, R., Ratner, P. A., & Chiu, L. (2005). A meta-analysis of the relationship between spiri-
tuality and quality of life. *Social Indicators Research, 72*(2), 153–188. https://doi.org/10.1007/
s11205-004-5577-x.

Schneider, M.-J. (2011). *Introduction to public health* (3rd ed.). Sudbury: Jones and Bartlett.

Schreiber, J. A., & Brockopp, D. Y. (2012). Twenty-five years later—What do we know about
religion/spirituality and psychological well-being among breast cancer survivors? A sys-
tematic review. *Journal of Cancer Survivorship, 6*(1), 82–94. https://doi.org/10.1007/
s11764-011-0193-7.

Shennan, C., Payne, S., & Fenlon, D. (2011). What is the evidence for the use of mindfulness-
based interventions in cancer care? A review. *Psycho-Oncology, 20*(7), 681–697. https://doi.
org/10.1002/pon.1819.

Sherman, A. C., Merluzzi, T. V., Pustejovsky, J. E., Park, C. L., George, L., Fitchett, G., et al.
(2015). A meta-analytic review of religious or spiritual involvement and social health among
cancer patients. *Cancer, 121*(21), 3779–3788. https://doi.org/10.1002/cncr.29352.

Simpson, R., Booth, J., Lawrence, M., Byrne, S., Mair, F., & Mercer, S. (2014). Mindfulness
based interventions in multiple sclerosis – A systematic review. *BMC Neurology, 14*. https://
doi.org/10.1186/1471-2377-14-15.

Singelenberg, R. (1990). The blood transfusion taboo of Jehovah's witnesses: Origin, development
and function of a controversial doctrine. *Social Science and Medicine, 31*(4), 515–523. https://
doi.org/10.1016/0277-9536(90)90048-W.

Smith, J. E., Richardson, J., Hoffman, C., & Pilkington, K. (2005). Mindfulness-based stress reduc-
tion as supportive therapy in cancer care: Systematic review. *Journal of Advanced Nursing,
52*(3), 315–327. https://doi.org/10.1111/j.1365-2648.2005.03592.x.

Stjernswärd, J., Foley, K. M., & Ferris, F. D. (2007). The public health strategy for palliative
care. *Journal of Pain and Symptom Management, 33*(5), 486–493. https://doi.org/10.1016/j.
jpainsymman.2007.02.016.

Taylor, E. J., Mamier, I., Bahjri, K., Anton, T., & Petersen, F. (2009). Efficacy of a self-study
programme to teach spiritual care. *Journal of Clinical Nursing, 18*(8), 1131–1140. https://doi.
org/10.1111/j.1365-2702.2008.02526.x.

Thune-Boyle, I. C., Stygall, J. A., Keshtgar, M. R., & Newman, S. P. (2006). Do religious/spiri-
tual coping strategies affect illness adjustment in patients with cancer? A systematic review
of the literature. *Social Science and Medicine, 63*(1), 151–164. https://doi.org/10.1016/j.
socscimed.2005.11.055.

Warnock, C. J. P. (2009). Who pays for providing spiritual care in healthcare settings? The ethi-
cal dilemma of taxpayers funding holistic healthcare and the first amendment requirement for
separation of church and state. *Journal of Religion and Health, 48*(4), 468–481. https://doi.
org/10.1007/s10943-008-9208-8.

Williams, A.-L. (2006). Perspectives on spirituality at the end of life: A meta-summary. *Palliative
and Supportive Care, 4*(4), 407–417. https://doi.org/10.1017/S1478951506060500.

Zainal, N. Z., Booth, S., & Huppert, F. A. (2013). The efficacy of mindfulness-based stress reduc-
tion on mental health of breast cancer patients: A meta-analysis. *Psycho-Oncology, 22*(7),
1457–1465. https://doi.org/10.1002/pon.3171.

Weighing the Evidence: What Is Revealed by 100+ Meta-Analyses and Systematic Reviews of Religion/Spirituality and Health?

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Abstract This chapter reviews the more than 100 meta-analyses and systematic reviews of relations between religion/spirituality (R/S) and health that have been published in refereed journals, a far larger number than is generally recognized. The 118 published reviews identified by 2017 were categorized as quantitative meta-analyses (n = 33), qualitative meta-syntheses (n = 7), meta-analyses of case studies (n = 1), or simple systematic reviews (n = 77). They addressed a wide range of substantive topics relevant to every major public health subfield, and incorporated a mean of 33.5 studies per review. Collectively authored by more than 200 distinct individuals, the reviews were published in 83 different journals, 20 in the category of public health. Multiple reviews were published by 14 journals, a majority possessing impact factors above 2.0. Reviewing empirical studies of R/S-health is clearly a very broad-based enterprise not limited to a few individuals or journals. Collectively, the reviews greatly strengthen the case, based on Hill's criteria, that R/S exerts a causative influence on health. The case for causal influence may now be compelling, and in most cases R/S involvement is associated with better health, although negative associations also exist. Further investigation is warranted to explore the possibility that R/S is a "fundamental cause" of health that maintains an association even when intervening mediating pathways change. This possibility is consistent with the dynamic understandings of R/S presented elsewhere in this volume.

This chapter is one of thirteen reviews in this volume providing a public health perspective on the empirical evidence relating R/S to physical and mental health.

Keywords Public health · Spirituality · Religion · Systematic review · Meta-analysis · Causality · Hill's criteria · Fundamental cause · Physical health · Mental health

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When our research group at Berkeley's School of Public Health embarked on the series of empirical reviews that culminated in Part I of this volume, we knew from the recent *Handbook* by Koenig and his colleagues (2012) that there existed more than 3000 published studies of religion/spirituality (R/S) and health. We knew that the *Handbook* had systematically reviewed many of those studies in a way that was highly useful but had emphasized a clinical rather than a public health perspective. We also knew that there had been meta-analyses of a handful of other R/S-health topics, such as R/S engagement and longevity. As a crucial reference point for our own review, we wanted to identify all relevant pre-existing systematic reviews of relations between R/S factors and health variables. Therefore we embarked on searches of PubMed, PsycINFO, and other databases, expecting that we might find perhaps one or even two dozen published systematic reviews and meta-analyses of R/S-health relations.

We were astonished when we identified more than 100 refereed systematic reviews published about relations between religion/spirituality and one or more health-relevant variables. Not all of these systematic reviews were well-done or offered useful insights. But many were of high quality and had been published in journals with high impact factors. Many of these earlier reviews became useful building blocks that we cited in our own public health oriented reviews that appear in the preceding chapters in Part I of this volume. Along with the the two editions of Koenig and colleagues' (2001, 2012) *Handbook*, these reviews and meta-analyses enabled us to leverage our resources and cover a much broader and more comprehensive set of public health subtopics than would otherwise have been possible. As a result, we were able to assemble public health perspectives on evidence for R/S--health relations from the perspectives of virtually every major subfield within public health (see chapter "Reviewing Religion/Spirituality Evidence from a Public Health Perspective: Introduction" this volume).

Yet this massive body of systematic reviews also represents an important phenomenon in itself, a valuable resource for many researchers, practitioners, and academic educators interested in the relevance of religion/spirituality to public health. We therefore analysed the systematic reviews themselves as a body of scientific literature.

Our goal in the present chapter is to enable readers to use these 100+ systematic reviews efficiently, and understand their overall implications and potential for research, teaching, and practice. Accordingly, the next section tabulates and offers various overview statistics and perspectives about the reviews. The third section suggests some substantimve implications for evaluating the causative aspect of R/S--health relations. The final section suggests needed future directions.

1   Overview of Systematic Reviews and Meta-Analyses

In December 2013 our Berkeley group conducted searches for reviews in refereed journals through PubMed as well as PsycINFO, Sociological Abstracts and seven other EBSCO databases,[1] without any restriction on date of publication. To meet the inclusion criterion of being *systematic*, each review was required to specify its search strategy (e.g., which databases) and enumerate the precise studies included in its final analyses. Our search terms specified that the title and/or abstract must refer to religion/spirituality.[2] We identified 599 unique records that were combined with 30 records in our files to yield 629 total records, reduced to 144 after inspection of abstracts, and to 128 after full-text retrieval and inspection.

The 128 retrieved systematic reviews were then divided into (i) reviews that focused on the association between R/S and a directly health-related variable such as health behaviors, social support, or mortality (k = 77); (ii) reviews of R/S and a variable such as education or personality, that is arguably but indirectly related to health (k = 16, e,g, Davis et al. 2013; Saroglou 2010); and (iii) reviews that were focused on methodological aspects of R/S-health relations, such as the frequency of R/S variables in studies published in top journals in a particular field, or reviews of measurement instruments (k = 35, e.g., Larson et al. 1986; Monod et al. 2011). In what follows, our primary focus is the first category concerning empirical findings about R/S-health relations.

Table 1 displays citation information for the 2013 list of 77 systematic reviews of R/S and directly health-related variables. The table also includes information about 41 additional systematic reviews identified subsequent to our original analyses, mostly published in 2014 or later (indicated by table footnote d). This combined (2017) total is 118 systematic reviews, meta-analyses, or qualitative meta-syntheses of relations between R/S and health-relevant variables.

Of the 2017 list of 118 reviews of direct R/S-health relations, 33 (28%) were quantitative meta-analyses, seven (6%) were qualitative meta-syntheses, one (1%) was a meta-analysis of case-studies, and 77 (65%) attempted neither qualitative nor quantitative aggregation, and might thus be called *simple systematic reviews* (SSRs). These reviews were published in a total of 83 journals, with multiple reviews appearing in 14 journals, a majority possessing impact factors above 2.0

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[1] The searched EBSCO databases focused primarily on social science: EconLit 1969 – current, Environmental Sciences and Pollution Management 1967 – current, ERIC 1966 – current, International Bibliography of the Social Sciences 1951 – current, PILOTS: Published International Literature On Traumatic Stress 1871 – current, PsycINFO 1806-current, Social Services Abstracts 1979 – current, Sociological Abstracts 1952 – current, Worldwide Political Science Abstracts 1975 – current.

[2] Strings for R/S specified "relig*," "spiritu*," or a term for a specific tradition such as "Christ*," "Islam*," "Buddhi*"; Strings for review specified "systematic* review*," "meta-analy*," or "meta-s*" (for meta-synthesis).

Table 1 Systematic reviews of religion/spirituality and health-related constructs (Refereed Journal Articles)

#	Type[a]	# Pubs[b]	References
Health behaviors[e,f,g]			
			(see also reviews #37, #38, #39)[q]
#1	SSR[c,d]	33	Kendrick (2017). Are religion and spirituality barriers or facilitators to treatment for HIV: A systematic review of the literature. *AIDS Care, 29*(1), 1–13.
#2	SSR[d]	12	Castaldelli-Maia and Bhugra (2014). Investigating the interlinkages of alcohol use and misuse, spirituality and culture—insights from a systematic review. *International Review of Psychiatry, 26*(3), 352–367.
#3	SSR	2	Regan, Bhattacharyya et al. (2013). A systematic review of religion and dementia care pathways in black and minority ethnic populations. *Mental Health, Religion & Culture, 16*(1), 1–15.
#4	SSR[c]	43	Smolak, Gearing et al. (2013). Social support and religion: Mental health service use and treatment of schizophrenia. *Community Mental Health Journal, 49*(4), 444–450.
#5	SSR[c]	25	Coleman-Brueckheimer and Dein (2011). Health care behaviours and beliefs in Hasidic Jewish populations: A systematic review of the literature. *Journal of Religion and Health, 50*(2), 422–436.
#6	SSR[c]	43	Rew and Wong (2006). A systematic review of associations among religiosity/spirituality and adolescent health attitudes and behaviors. *Journal of Adolescent Health, 38*(4), 433–442.
Substance abuse[e]			
#7	MA	22	Yeung, Chan et al. (2009). Youth religiosity and substance use: A meta-analysis from 1995 to 2007. *Psychological Reports, 105*(1), 255–266.
#8	SSR	105	Chitwood, Weiss et al. (2008). A systematic review of recent literature on religiosity and substance use. *Journal of Drug Issues, 38*(3), 653–688.
#9	MA	19	Alexander, Robinson et al. (1994). Treating and preventing alcohol, nicotine, and drug abuse through Transcendental Meditation: A review and statistical meta-analysis. *Alcoholism Treatment Quarterly, 11*(1–2), 13–87.
Coping/adjustment/stress-related growth[e]			
			(see also #98)
#10	SSR[d]	9	Adedoyin A. C., Bobbie et al. (2016). Religious coping strategies among traumatized African refugees in the United States: A systematic review. *Social Work and Christianity, 43*(1), 95–107.
#11	SSR	73	Wortmann and Park (2008). Religion and spirituality in adjustment following bereavement: An integrative review. *Death Studies, 32*(8), 703–736.
#12	QMS	8	Yick (2008). A metasynthesis of qualitative findings on the role of spirituality and religiosity among culturally diverse domestic violence survivors. *Qualitative Health Research, 18*(9), 1289–1306.
#13	SSR[c]	32	Becker, Xander et al. (2007). Do religious or spiritual beliefs influence bereavement? A systematic review. *Palliative Medicine, 21*(3), 207–217.
#14	MA	49	Ano and Vasconcelles (2005). Religious coping and psychological adjustment to stress: A meta-analysis. *Journal of Clinical Psychology, 61*(4), 461–480.

Table 1 (continued)

#	Type[a]	# Pubs[b]	References
Dementia prevention or coping[e,h]			
			(see also #3)
#15	SSR[d]	11	Agli, Bailly et al. (2015). Spirituality and religion in older adults with dementia: A systematic review. *International Psychogeriatrics, 27*(5), 715–725.
#16	SSR[d]	13	Keast, Leskovar et al. (2010). A systematic review of spirituality and dementia in ltc. *Annals of Long-Term Care, 18*(10), 41–48.
Psychological well-being: healthy populations[e,h]			
#17	MA	75	Yonker, Schnabelrauch et al. (2012). The relationship between spirituality and religiosity on psychological outcomes in adolescents and emerging adults: A meta-analytic review. *Journal of Adolescence, 35*(2), 299–314.
#18	SSR[c]	14	Weber, Pargament et al. (2012). Psychological distress among religious nonbelievers: A systematic review. *Journal of Religion and Health, 51*(1), 72–86.
#19	SSR	83	Hebert, Weinstein et al. (2006). Religion, spirituality and the well-being of informal caregivers: A review, critique, and research prospectus. *Aging & Mental Health, 10*(5), 497–520.
#20	MA	28	Witter, Stock et al. (1985). Religion and subjective well-being in adulthood: A quantitative synthesis. *Review of Religious Research, 26*(4), 332–342.
Prayer[e]			
			(see also #96)
#21	SSR[d]	12	Simão, Caldeira et al. (2016). The effect of prayer on patients' health: Systematic literature review. *Religions, 7*(1), 11.
#22	SSR[d]	10	Roberts, Ahmed et al. (2009). Intercessory prayer for the alleviation of ill health. *Cochrane Database of Systematic Reviews*, Article CD000368.
#23	MA[r]	15	Masters and Spielmans (2007). Prayer and health: Review, meta-analysis, and research agenda. *Journal of Behavioral Medicine, 30*(4), 329–338.
#24	SSR	17	Ernst (2003). Distant healing — an "update" of a systematic review. *Wiener Klinische Wochenschrift, 115*(7–8), 241–245.
#25	SSR	9	Townsend, Kladder et al. (2002). Systematic review of clinical trials examining the effects of religion on health. *Southern Medical Journal, 95*(12), 1429–1434.
#26	SSR	23	Astin, Harkness et al. (2000). The efficacy of "distant healing": A systematic review of randomized trials. *Annals of Internal Medicine, 132*(11), 903–910.
Mortality/Longevity[h]			
#27	MA	74	Shor and Roelfs (2013). The longevity effects of religious and nonreligious participation: A meta-analysis and meta-regression. *Journal for the Scientific Study of Religion, 52*(1), 120–145.
#28	MA	36	Chida, Steptoe et al. (2009). Religiosity/spirituality and mortality. *Psychotherapy and Psychosomatics, 78*(2), 81–90.
#29	MA	29	McCullough, Hoyt et al. (2000). Religious involvement and mortality: A meta-analytic review. *Health Psychology, 19*(3), 211–222.

Table 1 (continued)

#	Type[a]	# Pubs[b]	References
Physical health[h]			
#30	MA[d]	101	Jim, Pustejovsky et al. (2015). Religion, spirituality, and physical health in cancer patients: A meta-analysis. *Cancer, 121*(21), 3760–3768.
#31	SSR	38	Powell, Shahabi et al. (2003). Religion and spirituality: Linkages to physical health. *American Psychologist, 58*(1), 36–52.
Crime & delinquency[i]			
			(see also #84)
#32	MA	40	Cheung and Yeung (2011). Meta-analysis of relationships between religiosity and constructive and destructive behaviors among adolescents. *Children and Youth Services Review, 33*(2), 376–385.
#33	MA	60	Baier and Wright (2001). "If you love me, keep my commandments": A meta-analysis of the effect of religion on crime. *Journal of Research in Crime & Delinquency, 38*(1), 3–21.
#34	SSR	40	Johnson, Li et al. (2000). A systematic review of the religiosity and delinquency literature: A research note. *Journal of Contemporary Criminal Justice, 16*(1), 32–52.
Discrimination[j]			
#35	MA	55	Hall, Matz et al. (2010). Why don't we practice what we preach? A meta-analytic review of religious racism. *Personality and Social Psychology Review, 14*(1), 126–139.
Environmental health[k]			
#36	CM[d]	48	Cox, Villamayor-Tomas et al. (2014). The role of religion in community-based natural resource management. *World Development, 54*, 46–55.
Infectious diseases[l]			
			(see also #1, #47, #57)[q]
#37	SSR[c,d]	9	Lassiter and Parsons (2016). Religion and spirituality's influences on HIV syndemics among MSM: A systematic review and conceptual model. *AIDS and Behavior, 20*(2), 461–472.
Nutrition[f]			
			(see also #54, #55, #110, $111, #114)
#38	SSR[d]	22	Akrawi, Bartrop et al. (2015). Religiosity, spirituality in relation to disordered eating and body image concerns: A systematic review. *Journal of Eating Disorders, 3*(1), 29.
#39	SSR	39	Tan, Chan et al. (2013). Religiosity and spirituality and the intake of fruit, vegetable, and fat: A systematic review. *Evidence Based Complementary and Alternative Medicine, 2013*, Article ID 146214.
Family, youth, & reproductive outcomes[m]:			
			(see also #6, #7, #17, #32, #86, #87)
#40	SSR[c]	87	House, Mueller et al. (2010). Character as a predictor of reproductive health outcomes for youth: A systematic review. *Journal of Adolescent Health, 46*(3, Suppl), S59–S74.
#41	MA	94	Mahoney, Pargament et al. (2001). Religion in the home in the 1980s and 1990s: A meta-analytic review and conceptual analysis of links between religion, marriage, and parenting. *Journal of Family Psychology, 15*(4), 559–596.

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Table 1 (continued)

#	Type[a]	# Pubs[b]	References
Training or well-being of health professionals or religious leaders[g]			
#42	SSR[d]	6	Jafari (2016). Religion and spirituality within counselling/clinical psychology training programmes: A systematic review. *British Journal of Guidance & Counselling, 44*(3), 257–267.
#43	SSR[d]	28	Lewinson, McSherry et al. (2015). Spirituality in pre-registration nurse education and practice: A review of the literature. *Nurse Education Today, 35*(6), 806–814.
#44	SSR[d]	46	Paal, Helo et al. (2015). Spiritual care training provided to healthcare professionals: A systematic review. *Journal of Pastoral Care & Counseling, 69*(1), 19–30.
#45	SSR[d]	9	Doolittle (2015). Burnout, compassion fatigue, and job satisfaction among hospital chaplains: A systematic review. *Research in the Social Scientific Study of Religion*, 180–197.
#46	SSR	6	Nadarajah, Berger et al. (2013). Current status of spirituality in cardiac rehabilitation programs: A review of literature. *Journal of Cardiopulmonary Rehabilitation and Prevention, 33*(3), 135–143.
#47	SSR	2	Sorsdahl, Ipser et al. (2009). Interventions for educating traditional healers about std and HIV medicine. *Cochrane Database of Systematic Reviews,* CD007190.
Spiritual well-being interventions at end of life[g,n]			
			(see also #109)
#48	SSR	35	Cobb, Dowrick et al. (2012). What can we learn about the spiritual needs of palliative care patients from the research literature? *Journal of Pain and Symptom Management, 43*(6), 1105–1119.
#49	SSR[d]	17	Fitchett, Emanuel et al. (2015). Care of the human spirit and the role of dignity therapy: A systematic review of dignity therapy research. *BMC Palliative Care, 14*(1), 8.
#50	SSR	5	Candy, Jones et al. (2012). Spiritual and religious interventions for well-being of adults in the terminal phase of disease. *Cochrane Database of Systematic Reviews,* CD007544.
#51	QMS[c]	19	Edwards, Pang et al. (2010). The understanding of spirituality and the potential role of spiritual care in end-of-life and palliative care: A meta-study of qualitative research. *Palliative Medicine, 24*(8), 753–770.
#52	QMS	11	Williams A.-L. (2006). Perspectives on spirituality at the end of life: A meta-summary. *Palliative and Supportive Care, 4*(4), 407–417.
Referrals and adherence[g,n]			
			(see also #1, #3, #37)
#53	SSR[d]	7	Koehler Hildebrandt, Hodgson et al. (2016). Biopsychosocial-spiritual factors impacting referral to and participation in cardiac rehabilitation for African American patients: A systematic review. *Journal of Cardiopulmonary Rehabilitation and Prevention, 36*(5), 320–330.
Programs for prevention or treatment[g,o]			
			(see also #82, #115)
#54	SSR[c,d]	5	Timmons (2015). Review and evaluation of faith-based weight management interventions that target African American women. *Journal of Religion and Health, 54*(2), 798–809.

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Table 1 (continued)

#	Type[a]	# Pubs[b]	References
#55	SSR[d]	27	Lancaster, Carter-Edwards et al. (2014). Obesity interventions in African American faith-based organizations: A systematic review. *Obesity Reviews, 15*, 159–176.
#56	SSR[c]	8	Hankerson and Weissman (2012). Church-based health programs for mental disorders among African Americans: A review. *Psychiatric Services, 63*(3), 243–249.
#57	SSR[c]	11	Williams M. V., Palar et al. (2011). Congregation-based programs to address HIV/AIDS: Elements of successful implementation. *Journal of Urban Health, 88*(3), 517–532.
#58	SSR	29	Ferguson, Wu et al. (2007). Outcomes evaluation in faith-based social services: Are we evaluating faith accurately? *Research on Social Work Practice, 17*(2), 264–276.
#59	SSR[c]	53	DeHaven, Hunter et al. (2004). Health programs in faith-based organizations: Are they effective? *American Journal of Public Health, 94*(6), 1030–1036.

Organizational factors[g,i]

#	Type[a]	# Pubs[b]	References
#60	SSR[d]	8	Pirkola, Rantakokko et al. (2016). Workplace spirituality in health care: An integrated review of the literature. *Journal of Nursing Management, 24*(7), 859–868.

Treatments/interventions – individual[n,o,p]

(see also #101)

#	Type[a]	# Pubs[b]	References
#61	MA[d]	16	Anderson, Heywood-Everett et al. (2015). Faith-adapted psychological therapies for depression and anxiety: Systematic review and meta-analysis. *Journal of Affective Disorders, 176*, 183–196.
#62	MA[d]	23	Gonçalves, Lucchetti et al. (2015). Religious and spiritual interventions in mental health care: A systematic review and meta-analysis of randomized controlled clinical trials. *Psychological Medicine, 45*(14), 2937–2949.
#63	SSR[d]	10	Lim, Sim et al. (2014). Adapted cognitive-behavioral therapy for religious individuals with mental disorder: A systematic review. *Asian Journal of Psychiatry, 9*(20), 3–12.
#64	SSR[d]	6	Snider and McPhedran (2014). Religiosity, spirituality, mental health, and mental health treatment outcomes in Australia: A systematic literature review. *Mental Health, Religion & Culture, 17*(6), 568–581.
#65	SSR	8	Viftrup, Hvidt et al. (2013). Spiritually and religiously integrated group psychotherapy: A systematic literature review. *Evidence Based Complementary and Alternative Medicine, 2013*, 274625.
#66	SSR	25	Walpole, McMillan et al. (2013). Interventions for treating depression in Muslim patients: A systematic review. *Journal of Affective Disorders, 145*(1), 11–20.
#67	MA	46	Worthington, Hook et al. (2011). Religion and spirituality. *Journal of Clinical Psychology, 67*(2), 204–214.
#68	SSR	11	Paukert, Phillips et al. (2011). Systematic review of the effects of religion-accommodative psychotherapy for depression and anxiety. *Journal of Contemporary Psychotherapy, 41*(2), 99–108.
#69	MA	31	Smith, Bartz et al. (2007). Outcomes of religious and spiritual adaptations to psychotherapy: A meta-analytic review. *Psychotherapy Research, 17*(6), 643–655.

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Table 1 (continued)

#	Type[a]	# Pubs[b]	References
#70	SSR	16	Çoruh, Ayele et al. (2005). Does religious activity improve health outcomes? A critical review of the recent literature. *Explore: The Journal of Science and Healing, 1*(3), 186–191.
#71	MA	8	Kaplar, Wachholtz et al. (2004). The effect of religious and spiritual interventions on the biological, psychological, and spiritual outcomes of oncology patients: A meta-analytic review. *Journal of Psychosocial Oncology, 22*(1), 39–49.
#72	MA	26	Walker, Gorsuch et al. (2004). Therapists' integration of religion and spirituality in counseling: A meta-analysis. *Counseling & Values, 49*(1), 69–80.
#73	MA	5	McCullough (1999). Research on religion-accomodative counseling: Review and meta-analysis. *Journal of Counseling Psychology, 46*(1).
#74	SSR	148	Worthington, Kurusu et al. (1996). Empirical research on religion and psychotherapeutic processes and outcomes: A 10-year review and research prospectus. *Psychological Bulletin, 119*(3), 448–487.
#75	SSR	42	Worthington (1986). Religious counseling: A review of published empirical research. *Journal of Counseling & Development, 64*(7), 421–431.

Mental health & disorders[p]

(see also #4, #56)

#	Type	# Pubs	References
#76	MA[d]	9	Wu, Wang et al. (2015). Religion and completed suicide: A meta-analysis. *PLoS ONE, 10*(6), e0131715.
#77	SSR[d]	89	Lawrence, Oquendo et al. (2016). Religion and suicide risk: A systematic review. *Archives of Suicide Research, 20*(1), 1–21.
#78	MA[d]	148	Salsman, Pustejovsky et al. (2015). A meta-analytic approach to examining the correlation between religion/spirituality and mental health in cancer. *Cancer, 121*(21), 3769–3778.
#79	MA[d]	14	Burns and Tomita (2015). Traditional and religious healers in the pathway to care for people with mental disorders in Africa: A systematic review and meta-analysis. *Social Psychiatry and Psychiatric Epidemiology, 50*(6), 867–877.
#80	SSR[d]	29	Cummings, Ivan et al. (2014). A systematic review of relations between psychotherapist religiousness/spirituality and therapy-related variables. *Spirituality in Clinical Practice, 1*(2), 116–132.
#81	SSR[c]	43	Bonelli and Koenig (2013). Mental disorders, religion and spirituality 1990 to 2010: A systematic evidence-based review. *Journal of Religion and Health, 52*(2), 657–673.
#82	SSR	1	Singh, Shah et al. (2012). The efficacy of mental health outreach programs to religious settings: A systematic review. *American Journal of Psychiatric Rehabilitation, 15*(3), 290-298.
#83	SSR[d]	70	Gearing, Alonzo et al. (2011). Association of religion with delusions and hallucinations in the context of schizophrenia: Implications for engagement and adherence. *Schizophrenia Research, 126*(1–3), 150–163.
#84	SSR	12	Eytan (2011). Religion and mental health during incarceration: A systematic literature review. *Psychiatric Quarterly, 82*(4), 287–295.

Table 1 (continued)

#	Type[a]	# Pubs[b]	References
#85	SSR	6	Pesut, Clark et al. (2011). Religion and spirituality in the context of bipolar disorder: A literature review. *Mental Health, Religion & Culture, 14*(8), 785–796.
#86	SSR	115	Dew, Daniel et al. (2008). Religion/spirituality and adolescent psychiatric symptoms: A review. *Child Psychiatry & Human Development, 39*(4), 381–398.
#87	SSR	20	Wong, Rew et al. (2006). A systematic review of recent research on adolescent religiosity/spirituality and mental health. *Issues in Mental Health Nursing, 27*(2), 161–183.
#88	MA	147	Smith, McCullough et al. (2003). Religiousness and depression: Evidence for a main effect and the moderating influence of stressful life events. *Psychological Bulletin, 129*(4), 614–636.
#89	MA	35	Hackney and Sanders (2003). Religiosity and mental health: A meta-analysis of recent studies. *Journal for the Scientific Study of Religion, 42*(1), 43–55.
#90	MA	24	Bergin (1983). Religiosity and mental health: A critical reevaluation and meta-analysis. *Professional Psychology: Research & Practice, 14*(2), 170–184.

Patient psychosocial well-being[n]

#	Type[a]	# Pubs[b]	References
#91	MA[d]	12	Kruizinga, Hartog, et al. (2016). The effect of spiritual interventions addressing existential themes using a narrative approach on quality of life of cancer patients: A systematic review and meta-analysis. *Psycho-Oncology, 25*(3), 253–265.
#92	MA[d]	78	Sherman, Merluzzi et al. (2015). A meta-analytic review of religious or spiritual involvement and social health among cancer patients. *Cancer, 121*(21), 3779–3788.
#93	SSR[d]	36	Bai and Lazenby (2015). A systematic review of associations between spiritual well-being and quality of life at the scale and factor levels in studies among patients with cancer. *Journal of Palliative Medicine, 18*(3), 286–298.
#94	SSR[c]	16	Mouch and Sonnega (2012). Spirituality and recovery from cardiac surgery: A review. *Journal of Religion and Health, 51*(4), 1042–1060.
#95	SSR	18	Schreiber and Brockopp (2012). Twenty-five years later—what do we know about religion/spirituality and psychological well-being among breast cancer survivors? A systematic review. *Journal of Cancer Survivorship, 6*(1), 82–94.
#96	SSR	26	Hollywell and Walker (2009). Private prayer as a suitable intervention for hospitalised patients: A critical review of the literature. *Journal of Clinical Nursing, 18*(5), 637–651.
#97	QMS	27	Lamb, Buchanan et al. (2008). The psychosocial spiritual experience of elderly individuals recovering from stroke: A systematic review. *International Journal of Evidence-Based Healthcare, 6*(2), 173–205.
#98	SSR[c]	17	Thune-Boyle, Stygall et al. (2006). Do religious/spiritual coping strategies affect illness adjustment in patients with cancer? A systematic review of the literature. *Social Science and Medicine, 63*(1), 151–164.
#99	MA	48	Sawatzky, Ratner et al. (2005). A meta-analysis of the relationship between spirituality and quality of life. *Social Indicators Research, 72*(2), 153–188.

Table 1 (continued)

#	Type[a]	# Pubs[b]	References
#100	SSR	43	Lin H.-R. and Bauer-Wu (2003). Psycho-spiritual well-being in patients with advanced cancer: An integrative review of the literature. *Journal of Advanced Nursing, 44*(1), 69–80.
Patient sources of spiritual well-being[n]			
			(see also #15, #16)
#101	MA[d]	11	Chen, Xiao et al. (2017). The effects of life review on psycho-spiritual well-being among patients with life-threatening illness: A systematic review and meta-analysis. *Journal of Advanced Nursing*, 73(7), 1539–1554.
#102	SSR[d]	39	Gielen, Bhatnagar et al. (2016). Spirituality as an ethical challenge in Indian palliative care: A systematic review. *Palliative and Supportive Care, 14*(5), 561–582.
#103	SSR[d]	15	Piderman, Kung et al. (2015). Respecting the spiritual side of advanced cancer care: A systematic review. *Current Oncology Reports, 17*(2), 6.
#104	QMS	9	Hodge, Horvath et al. (2012). Older adults' spiritual needs in health care settings: A qualitative meta-synthesis. *Research on Aging, 34*(2), 131–155.
#105	QMS	11	Hodge and Horvath (2011). Spiritual needs in health care settings: A qualitative meta-synthesis of clients' perspectives. *Social Work, 56*(4), 306–316.
#106	QMS	10	Lin W.-C., Gau et al. (2011). Spiritual well-being in patients with rheumatoid arthritis. *Journal of Nursing Research, 19*(1), 1–12.
Doctor-patient conversations[n]			
#107	SSR[c,d]	61	Best, Butow et al. (2016). Doctors discussing religion and spirituality: A systematic literature review. *Palliative Medicine, 30*(4), 327–337.
#108	SSR[c,d]	54	Best, Butow et al. (2015). Do patients want doctors to talk about spirituality? A systematic literature review. *Patient Education and Counseling, 98*(11), 1320–1328.
Perspectives on end of life[n]			
			(see also #48, #51, #52)
109	SSR[d]	45	Chakraborty, El-Jawahri, et al. (2017). A systematic review of religious beliefs about major end-of-life issues in the five major world religions. *Palliative and Supportive Care*, 15(5), 609–622.
Specific Religious Traditions			
			(see also #5, #18, #66, #79)
#110	MA[c]	35	Sadeghirad, Motaghipisheh et al. (2014). Islamic fasting and weight loss: A systematic review and meta-analysis. *Public Health Nutrition, 17*(2), 396–406.
#111	MA[c,d]	30	Kul, Savaş et al. (2014). Does Ramadan fasting alter body weight and blood lipids and fasting blood glucose in a healthy population? A meta-analysis. *Journal of Religion and Health, 53*(3), 929–942.
#112	SSR	22	Favazza Titus (2014). Seeking and utilizing a curandero in the United States: A literature review. *Journal of Holistic Nursing, 32*(3), 189–201.
#113	SSR	8	Shonin, Van Gordon et al. (2013). Mindfulness and other Buddhist-derived interventions in correctional settings: A systematic review. *Aggression and Violent Behavior, 18*(3), 365–372.

Table 1 (continued)

#	Typeᵃ	# Pubsᵇ	References
#114	SSR	36	Salim, Al Suwaidi et al. (2013). Impact of religious Ramadan fasting on cardiovascular disease: A systematic review of the literature. *Current Medical Research and Opinion, 29*(4), 343–354.
#115	SSR	7	Adedoyin C. (2013). A systematic review of the roles of congregations and faith-based organizations in the care and support of African Americans living with HIV/AIDS in the United States. *Social Work and Christianity, 40*(2), 184–205.
#115	SSR	101	Abu-Raiya and Pargament (2011). Empirically based psychology of Islam: Summary and critique of the literature. *Mental Health, Religion & Culture, 14*(2), 93–115.
#117	SSR	50	Lucchetti, Lucchetti et al. (2011). Complementary spiritist therapy: Systematic review of scientific evidence. *Evidence Based Complementary and Alternative Medicine, 2011*, 835945.
#118	SSRᵈ	19	Fleming and Ledogar (2008). Resilience and indigenous spirituality: A literature review. *Pimatisiwin, 6*(2), 47–64.

ᵃTypes of systematic reviews include meta-analysis (MA) that calculates quantitative aggregate effect sizes, qualitative meta-synthesis (QMS) that identifies aggregate meta-themes, case-study meta-analysis (CMA) that identifies aggregate patterns in multiple case studies, and "simple" systematic review (SSR) that does not fall into any of the three "meta" categories. Criteria for inclusion were that a review (i) explains its systematic search strategy (e.g., which databases), (ii) reports the number of included publications or studies, and (iii) identifies individual included publications (e.g., in tables, references, supplements, etc.)

ᵇNumber of publications (e.g., studies) encompassed in each me ta-analysis or other systematic review

ᶜPublished by journal classified as public health

ᵈIdentified post-2013 (not among original 77 systematic reviews), in some cases pertaining to factors more broadly related to health (i.e., #36, #60)

ᵉRelevant to chapter "Model of Individual Health Effects from Religion/Spirituality: Supporting Evidence" (this volume)

ᶠRelevant to chapter "Public Health Nutrition, Religion, and Spirituality" (this volume)

ᵍRelevant to chapter "Health Policy and Management, Religion, and Spirituality" (this volume)

ʰRelevant to chapter "Religious/Spiritual Effects on Physical Morbidity and Mortality" (this volume)

ⁱRelevant to chapter "Social and Community-Level Factors in Health Effects from Religion/Spirituality" (this volume)

ʲRelevant to chapter "Social Identity and Discrimination in Religious/Spiritual Influences on Health" (this volume)

ᵏRelevant to chapter "Environmental Health Sciences, Religion, and Spirituality" (this volume)

ˡRelevant to chapter "Infectious Diseases, Religion, and Spirituality" (this volume)

ᵐRelevant to chapter "Maternal/Child Health, Religion, and Spirituality" (this volume)

ⁿRelevant to chapter "Clinical Practice, Religion, and Spirituality" (this volume)

ᵒRelevant to chapter "Public Health Education, Promotion, and Intervention: Relevance of Religion and Spirituality" (this volume)

ᵖRelevant to chapter "Mental Health, Religion, and Spirituality" (this volume)

ᵠOmitted from this table is Shaw and El-Bassel's (2014) review of 137 empirical studies of HIV risk behaviors, which failed to describe its search strategy (violating tabular inclusion criteria), and would otherwise have been includable as an important review of health behavior (see summary in chapter on "Infectious Diseases, Religion, and Spirituality," this volume)

ʳMasters and Spielmans (2007) is an updating of Masters, Spielmans, et al. (2006)

Table 2 Published systematic reviews of religion/spirituality and health: (**A**) Journals Publishing Multiple Reviews, and (**B**) Public Health Journals

Impact[a]	Journal	No.[b]	References[c]
(A) Journals that published multiple systematic reviews			
0.977	*Journal of Religion and Health*	6	#5, #18, #54, #81, #94, #111
—	*Mental Health, Religion & Culture*	4	#3, #64, #85, #116
5.649	*Cancer*	3	#30, #78, #92
6.103	*Cochrane Database of Systematic Reviews*	3	#22, #47, #50
1.931	*Evidence Based Complementary & Alternative Medicine*	3	#39, #65, #117
3.685	*Palliative Medicine*	3	#13, #51, #107
1.231	*Journal for the Scientific Study of Religion*	2	#27, #89
3.838	*Journal of Adolescent Health*	2	#6, #40
1.917	*Journal of Advanced Nursing*	2	#100, #101
3.570	*Journal of Affective Disorders*	2	#61, #66
2.236	*Journal of Clinical Psychology*	2	#14, #67
2.230	*Palliative and Supportive Care*	3	#52, #102, #109
14.839	*Psychological Bulletin*	2	#74, #88
—	*Social Work & Christianity*	2	#10, #115
(B) Public health journals that published systematic reviews[d]			
4.138	*American Journal of Public Health* (5, 16)	1	#59
3.838	*Journal of Adolescent Health* (7, 19)	2	#6, #40
3.685	*Palliative Medicine* (−, 23)	3	#13, #51, #107
3.063	*AIDS and Behavior* (13, −)	1	#37
2.814	*Social Science and Medicine* (15, 35)	1	#98
2.433	*Public Health Nutrition* (−, 49)	1	#110
2.335	*Psychiatric Services* (25, 51)	1	#56
2.232	*Patient Education and Counseling* (−, 57)	1	#108
2.046	*Journal of Urban Health* (−, 66)	1	#57
1.902	*AIDS Care* (49, −)	1	#1
0.979	*Community Mental Health Journal* (112, −)	1	#4
0.977	*Journal of Religion and Health* (113, −)	6	#5, #18, #54, #81, #94, #111

[a]2015 impact factor (Thompson Reuters)
[b]Number of systematic reviews (when analyses finalized in early 2017)
[c]Reference number in Table 1
[d]Parentheses after journal name show rank-ordering of journal within Thompson/Reuters public health category (out of 153 in social science, out of 173 in science)

(see Table 2, top). Twenty of the 118 (17%) appeared in journals classified as public health (see Table 2, bottom). The mean number of publications examined in the 118 systematic reviews was 33.5, and was somewhat larger among meta-analyses (43.7) and somewhat smaller among qualitative meta-syntheses (13.6). Similar patterns were apparent in 2013 (see Fig. 1). Already in 2013, a total of 223 distinct individu-
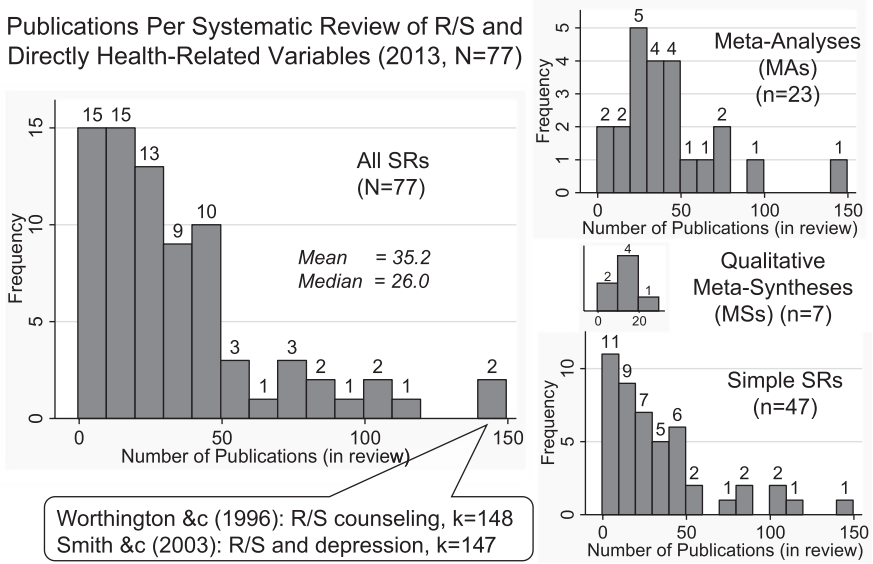
Fig. 1 Number of studies included in systematic reviews (SRs) of religion/spirituality (R/S) and health variables, by type of review (in reviews identified by 2013)

als were listed as authors, with only 18 individuals serving as author on multiple reviews, only one of whom authored or coauthored more than three reviews.[3]

The reviews addressed a wide range of substantive topics, as shown in the headers in Table 1. Of 118 empirical reviews published by 2017, at least one offered evidence relevant to each major public health subfield (i.e., earlier chapters in Part I of this volume, as indicated in footnotes e through p in Table 1). Many reviews are relevant to more than one public health subfield. Clearly, the process of systematically reviewing empirical studies of R/S-health relations is a very broad-based enterprise that is not limited to a few individuals, a few journals, or to the two editions of the *Handbook*.

Quality and Usefulness of Reviews Many reviews have appeared in high impact journals and reflect those journals' high standards. Yet our group can also attest that the reviews listed in Table 1 varied considerably in their usefulness for preparing this volume. Some reviews are outdated, others identified only a very limited pool of relevant studies (e.g., #3, #47, #82), used poor methods, or contributed little new information beyond identification of studies. Every research literature is affected by

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[3] Authors of multiple reviews in the 2013 list were Michael E. McCullough (5 reviews); Harold G. Koenig, Kenneth I. Pargament, and Everett L. Worthington (3 each); Hana Ayele, Edzard Ernst, David R. Hodge, Violet E. Horvath, David B. Larson, Hung-Ru Lin, Thomas Mulligan, Lynda H. Powell, Lynn Rew, Timothy B. Smith, Melinda A. Stanley, Carl E. Thoresen, Joel Y. Wong, and Jerf W. K. Yeung (2 each).

limitations of various kinds. Conditions that affect the quality of R/S-health reviews may include the complexity and interdisciplinary nature of the R/S-health topic, its capacity to galvanize rank-and-file enthusiasm despite its relative dearth of a stable funding base, and its relatively recent emergence as an organized literature. In view of such conditions, it is not surprising that a number of limitations exist. And despite this variety of adverse conditions, many reviews *are* solid, and much can be learned from them.

2   Does Religion/Spirituality Cause Health?: Implications of Systematic Reviews

What can we conclude from the findings embedded in these 100-plus reviews? Do the available meta-analyses and systematic reviews "prove" that religious and/or spiritual involvement fosters health?

Arguably most fundamental is the question of whether R/S engagement with religion/spirituality by an individual can have a causal effect on that same person's health, through *any pathway*. For example, according to the "generic" model that is presented in this volume's chapter entitled "Model of Individual Health Effects from Religion/Spirituality: Supporting Evidence", engagement with R/S might plausibly benefit physical health through pathways that include improved health behaviors, heightened social support, enhanced mental health, and greater ability to draw strength from religious/spiritual methods of coping with stress. Many reviews and meta-analyses present evidence relevant to the primary question of whether R/S causally affects health through any pathway (e.g., Table 1, reviews #7, #17, #28, #30, #31).

Secondary causative questions of interest concern whether R/S engagement affects health through specific pathways or groups of pathways. For example, one may ask whether R/S causally affects health through enhanced social support. One may also ask whether R/S causally affects health through any pathways *apart from* enhanced social support – which would imply that benefits from R/S are not "just" social support. In popular discourse, such questions are commonly confused with the more fundamental causative question of whether religious/spiritual involvement may affect health through any pathway (Oman and Thoresen 2002). Happily, some meta-analyses do also present evidence relevant to specific secondary questions. For example, in 2009, Chida et al. (Table 2, review #28) reported that among 26 mortality studies in healthy populations that controlled for social support, R/S engagement predicted a statistically significant overall reduction of 16% in mortality risk after controls (hazard ration [HR] = 0.84, 95%CI = 0.78–0.91). Such findings suggest that R/S effects on mortality are not mediated solely by social support. Similarly, some systematic reviews have separately tabulated, wherever possible, each study's estimates from not only a "mediated model" that adjusted for potentially confounding factors, but also from an "independent model" that adjusted for confounders

plus "established risk factors" that include health behaviors, social support and mental health (i.e., depression) (p. 39 of Powell et al., review #31 in Table 1). Such studies do offer support for influence of R/S on health through all major generic pathways (for a fuller review of major pathways, see chapter "Model of Individual Health Effects from Religion/Spirituality: Supporting Evidence", this volume).

Inferring Causality Without Randomization Rigorously gauging causal effects, however, remains a difficult task, because a person's religious/spiritual engagemen is largely incapable of being randomized, and randomized studies are often the easiest means of ruling out the possibility that an observed relation is an artifact of unobserved confounding factors. Even if it was ethical, a randomized study of religious engagement and health would likely pose intractible challenges for recruitment and adherence. But tobacco smoking and many other health factors also cannot be randomized, yet have come to be considered as causal. For such non-randomizable variables, how can causality be inferred?

Jeff Levin's (1994) analysis of evidence for religion-health causality was published more than 20 years ago, but remains a valuable introduction to the issue. As he explains, British epidemiologist Austin Bradford Hill (1965) developed what have come to be known as "Hill's criteria for causality" (Rothman and Greenland 2005). Since Hill viewed none of these nine "criteria" as either necessary or sufficient, they are perhaps better characterized as *perspectives* or *guidelines* for evaluating causality. These nine guidelines emerged from Hill's pioneering work to infer the causal effects of smoking. Commonly studied by epidemiology students, these guidelines are often summarized as consistency, coherence, strength, temporality, plausibility, specificity, biological gradient, experiment, and analogy.

Based on the much smaller body of studies available in the early 1990s, Levin (1994) evaluated evidence for R/S-health causality from each of these perspectives. While none of the nine perspectives undermined arguments for causality, several possessed little relevant evidence, and Levin (1994, p. 1480) concluded that

> the question, "Is it causal?', can be answered with a "maybe".... examining the evidence in light of Hill's guidelines is inconclusive, but promising. Judging this literature in terms of consistency, plausibility, and analogy, the answer is yes. In terms of coherence, the answer is probably yes, but one cannot be certain. In terms of temporality and biological gradient, there is insufficient evidence, but recent gerontological findings may change this to a yes. In terms of strength and experiment, there is insufficient evidence. Finally, specificity does not seem to be applicable.

Now, more than 20 years later, after the publication of at least 2000 additional empirical studies and many dozens of meta-analyses and systematic reviews, is the answer still "maybe"? Pondering this question, we reread Levin's paper, and noticed that the evidence base in many respects had expanded dramatically. What in 1994 could be addressed through only a small handfull or a single study, can in 2017 in many cases be addressed through one or more meta-analyses or systematic reviews. Table 3 displays various ways that the case for causality has been strengthened, in many cases dramatically. Levin viewed the evidence for *consistency* as already strong, and for *ccoherence* as "probably yes" (p. 1480) – both can now be backed

Table 3 How systematic reviews change and strengthen the case for religion/spirituality's causative effects on health: changes from 1994 to 2017

Hill guideline and year	Top of each pair: evaluation based on Levin (1994); Bottom: evaluation based on Relevant Systematic Reviews (2017)
Consistency? 1994	Levin (1994) concluded "yes" – There "can be no argument" (p. 1479) against consistency because of diversity of studies.
2017	Evidence now in 2017 further strengthened by multiple meta-analyses including #28[a:] Chida et al. (2009, k = 36) ►R/S ↔ less adult mortality (18% reduction, i.e., Hazard Ratio[HR] = 0.82) #17[a]: Yonker et al. (2012, k = 75) ►R/S ↔ less youth risk behavior ($r = -.17$) #7[a]: Yeung et al. (2009, k = 22) ►R/S ↔ less youth substance abuse ($r = -.16$) #88[a]: Smith et al. (2003, k = 147), ►R/S ↔ less depression ($r = -.10$) #89[a]: Hackney and Sanders (2003, k = 35) ►R/S ↔ better mental health ($r = .10$) #99[a]: Sawatzky et al. (2005, k = 48) ►R/S ↔ better quality of life ($r = 0.34$) Beyond systematic reviews, much international evidence, some from non-Abrahamic traditions, reports similarly favorable findings on many facets of R/S-health relations.[b, c]
Coherence? 1994	Levin concluded "probably yes" – "perhaps coherence is partly supported by research which suggests that elements of the proposed explanations (e.g., health behaviors, social support, health beliefs, emotional arousal) are associated with many of the disease outcomes examined in this literature in terms of risk, etiology, pathogenesis, and prognosis" (p. 1480).
2017	Evidence now in 2017 further strengthened by multiple meta-analyses including the reviews supporting *consistency* (section above), as well as: #32[a]: Cheung & Yeung (2011, k = 40) ►R/S ↔ less youth delinquency, more constructive behavior ($r = .21$) #33[a]: Baier & Wright (2001, k = 60) ►R/S ↔ less general crime ($r = -.12$) Meta-analytic evidence also supports perspectives asserting that R/S supplies distinctive added value #14[a]: Ano & Vasconcelles (2005, k = 49) ►Positive R/S coping ↔ positive adjustment ($r = .32$) ►Negative R/S coping ↔ negative adjustment ($r = .22$)
Strength? 1994	Levin concluded evidence for strength was "insufficient" (p. 1480) – too few studies have been designed to gauge effect from religion, but "moderate to strong associations have been found in several studies" (p. 1479).
2017	Evidence now in 2017 for clinically relevant strength of association is available from multiple meta-analyses cited above, such as #28[a]: Chida et al. (2009, k = 36) ►R/S ↔ less adult mortality (HR = 0.82, $p < 0.001$) The strength of the R/S-longevity association is comparable to the strength of many other factors deemed clinically relevant (Lucchetti et al. 2011; McCullough et al. 2001).

Table 3 (continued)

Hill guideline and year	Top of each pair: evaluation based on Levin (1994); Bottom: evaluation based on Relevant Systematic Reviews (2017)
Temporality? 1994	Levin concluded evidence for temporal ordering was "insufficient" (p. 1480) because few longitudinal studies had been published.
2017	Now in 2017, many meta-analyses and systematic reviews supply evidence in which the ostensible cause (R/S) precedes the effect (health). These include meta-analyses of mortality (#28 – see above) as well as randomized intervention studies of R/S-infused counseling and psychotherapy:
	#67[a]: Worthington et al. (2011, k = 46)
	▶R/S accommodative therapies outperformed both no-treatment controls (d = .45 in k = 22 studies) and alternate secular psychotherapies (d = .26 in k = 29 studies), and demonstrated favorable but nonsignificant trends when compared in dismantling designs (d = .13, ns, k = 11).
	The systematic review in Koenig et al.'s (2012) *Handbook*, though unrefereed, offers extractable information about longitudinal studies on multiple health outcomes, in most cases yielding much higher proportions of findings favorable versus unfavorable R/S-health associations.[a] Similar patterns are extractable for some health behaviors, such as substance abuse:
	▶R/S ↔ less alcohol abuse (of 31 high-quality prospective studies, R/S predicted less alcohol use/abuse/dependence in 26, with 5 null) (pp. 753–769)
	▶R/S ↔ less drug abuse (of 22 high-quality prospective studies, R/S predicted less drug use/abuse/dependence in 20, with 2 null) (pp. 769–780)

[a]Meta-analysis
[b]See chapter "Religious/Spiritual Effects on Physical Morbidity and Mortality", (this volume)
[c]See chapter "International and Global Perspectives on Spirituality, Religion, and Public Health", (this volume)

with diverse meta-analyses. Evidence for *strength* was viewed by Levin as "inconclusive," but clinically consequential relations are now backed by meta-analyses. Evidence for *temporality* was "insufficient" but now includes meta-analyses of topics such as mortality, as well as unrefereed yet high quality systematic reviews in the *Handbook* (Koenig et al. 2012).

From the standpoint of the Hill guidelines, the case for a causative relation between religion/spirituality and health has been enormously strengthened. On balance, we believe the case is compelling. Can anyone sincerely maintain that religion and spirituality are entirely non-causal epiphenomenal byproducts of other variables, and that all of the R/S-health relationships documented in Table 3, and in other systematic reviews listed in Table 1, are purely due to confounding?

Even as Hill-based assessments via systematic reviews are pointing increasingly strongly and perhaps compellingly toward causal effects, complementary causative evidence is also emerging from increasingly sophisticated individual studies. More specifically, innovative statistical methods now permit better estimates of robustness of certain estimates against unmeasured confounding (e.g., VanderWeele et al. 2016). A pioneering study that used such methods reported evidence for bidirectional effects between religious service attendance and depression that were of

approximately equal magnitude. The possibility of unmeasured confounding cannot be completely analytically eliminated in any nonrandomized design. But the investigators were able to infer that "for an unmeasured confounder to fully explain away the association of service attendance with subsequent depression, it would have to both increase the likelihood of service attendance and decrease the likelihood of depression by 2.1-fold, above and beyond the measured covariates, which may not be likely" (Li et al. 2016, pp. 881–882).

3 Future Directions

Even if the case for causative effects is regarded as compelling, many closely connected questions remain to be addressed. Perhaps most important, we believe the focus of attention should shift – and for many researchers has already shifted – from *whether* R/S exerts causative effects on health, to understanding *when* such effects are positive and favorable to health (apparently the most common effect), when they may be negative, and when causative influences are small or tend to cancel each other out. Such questions are important for designing optimal public health programs and interventions, activities that are already the focus of multiple systematic reviews (e.g., Table 1, reviews #54–#59, #61–#73).

Further insight may also be obtained by probing the secondary questions noted earlier about whether R/S-health relations are independent from or occur through particular subsets of mediating pathways. Support for major generic pathways such as R/S coping, enhanced mental health, and improved health behaviors, is now documented in systematic reviews and meta-analyses (e.g., reviews #14, #88, and *Handbook*, pp. 753–780, as analyzed in Table 1; for fuller discussion see also chapter "Model of Individual Health Effects from Religion/Spirituality: Supporting Evidence", this volume).

A larger and more ambitious question is whether religion/spirituality might be a "fundamental cause" of health in the sense that they tend to "maintain an association with [health or] disease even when intervening mechanisms change" (Link and Phelan 1995, p. 80), a speculation offered nearly two decades ago by Hummer et al. (1999). The dynamic and evolving model of R/S that undergirds several chapters in this volume is compatible with such a view of R/S-health relations, and perhaps even required to accommodate the smaller but non-negligible presence of negative R/S-health associations in some circumstances (see chapter "Social and Community-Level Factors in Health Effects from Religion/Spirituality", and Question 6 in chapter on "Questions on Assessing the Evidence Linking Religion/Spirituality to Health," this volume).

Such a dynamic and evolving model, which assumes that religious traditions adapt and *learn*, need not imply uniformly positive learning-induced changes over time within each R/S tradition and its offshoots. In fact, in individual human development, U-shaped developmental trajectories "appear to be normative across developmental domains including language, cognition, and physical abilities and may be

a general property of dynamic systems…. [and may] signal periods of increased attention to new elements… and mark transitions to more complex integrations [and] newer levels of competence and complexity" (Nucci and Turiel 2009, p. 156). Religious/spiritual communities worldwide face the challenge of learning how to integrate essential R/S commitments and insights with the opportunities and disruptions of modern technology. Viewed from a dynamical systems perspective, inconsistencies in how religion/spirituality relate to health might reflect the irregularities inherent in how R/S-based behavior – like other human behavior – is "softly assembled… as a function of both… history and the current contexts" (Gershkoff-Stowe and Thelen 2004, p. 16).

By strengthening the case for causative R/S-health relations, the reviews examined in this chapter open up new questions and new theoretical and practical vistas. We believe that future work on R/S health should focus on both consolidation and expansion. Virtually every systematic review in Table 1 can offer some helpful information for future work, although the depth of the yielded insight varies greatly. As in every field, investigators must also use discernment to extract from each review the information that is based on solid methodological foundations. For many topics that are addressed by existing reviews, there is much scope for improved follow-up reviews that employ greater rigor, offer better insight into underlying patterns and processes, or offer meta-analytically aggregated estimates. Future work – individual studies as well as reviews, and by students as well as by senior researchers – should also attend to investigating and building theoretically cogent accounts of moderating factors that predict when R/S-health relations are stronger and more beneficial, when they are weaker or even negative, and how best to collaborate with R/S communities and enhance the health of their members. Up to now, the bulk of R/S-health work has been in individually oriented fields such as medicine and psychology. With its special concern for community-level perspectives and processes, public health can make an enormous contribution, and perhaps orchestrate increasingly sophisticated interdisciplinary collaboration to investigate religion, spirituality, and health.

References

Davis, D. E., Worthington, E. L., Jr., Hook, J. N., & Hill, P. C. (2013). Research on religion/spirituality and forgiveness: A meta-analytic review. *Psychology of Religion and Spirituality, 5*(4), 233–241. https://doi.org/10.1037/a0033637.

Gershkoff-Stowe, L., & Thelen, E. (2004). U-shaped changes in behavior: A dynamic systems perspective. *Journal of Cognition and Development, 5*(1), 11–36. https://doi.org/10.1207/s15327647jcd0501_2

Hill, A. B. (1965). The environment and disease: Association or causation? *Proceedings of the Royal Society of Medicine, 58*, 1217–1219.

Hummer, R. A., Rogers, R. G., Nam, C. B., & Ellison, C. G. (1999). Religious involvement and U.S. adult mortality. *Demography, 36*(2), 273–285. https://doi.org/10.2307/2648114.

Koenig, H. G., McCullough, M. E., & Larson, D. B. (2001). *Handbook of religion and health*. New York: Oxford University Press.

Koenig, H. G., King, D. E., & Carson, V. B. (2012). *Handbook of religion and health* (2nd ed.). Oxford/New York: Oxford University Press.

Larson, D. B., Pattison, E. M., Blazer, D. G., Omran, A. R., & Kaplan, B. H. (1986). Systematic analysis of research on religious variables in four major psychiatric journals, 1978-1982. *American Journal of Psychiatry, 143*(3), 329–334. https://doi.org/10.1176/ajp.143.3.32

Levin, J. S. (1994). Religion and health: Is there an association, is it valid, and is it causal? *Social Science and Medicine, 38*(11), 1475–1482. https://doi.org/10.1016/0277-9536(94)90109-0.

Li, S., Okereke, O. I., Chang, S.-C., Kawachi, I., & VanderWeele, T. J. (2016). Religious service attendance and lower depression among women—A prospective cohort study. *Annals of Behavioral Medicine, 50*(6), 876–884. https://doi.org/10.1007/s12160-016-9813-9.

Link, B. G., & Phelan, J. (1995). Social conditions as fundamental causes of disease. *Journal of Health and Social Behavior, 35*(Supp), 80–94. https://doi.org/10.1177/0022146510383498.

Lucchetti, G., Lucchetti, A. L. G., & Koenig, H. G. (2011). Impact of spirituality/religiosity on mortality: Comparison with other health interventions. *Explore, 7*(4), 234–238. https://doi.org/10.1016/j.explore.2011.04.005.

Masters, K. S., Spielmans, G. I., & Goodson, J. T. (2006). Are there demonstrable effects of distant intercessory prayer? A meta-analytic review. *Annals of Behavioral Medicine, 32*(1), 21–26.

McCullough, M. E., Hoyt, W. T., & Larson, D. B. (2001). Small, robust, and important: Reply to Sloan and Bagiella (2001). *Health Psychology, 20*(3), 228–229. https://doi.org/10.1037/h0092533

Monod, S., Brennan, M., Rochat, E., Martin, E., Rochat, S., & Bula, C. J. (2011). Instruments measuring spirituality in clinical research: A systematic review. *Journal of General Internal Medicine, 26*(11), 1345–1357. https://doi.org/10.1007/s11606-011-1769-7.

Nucci, L. P., & Turiel, E. (2009). Capturing the complexity of moral development and education. *Mind, Brain, and Education, 3*(3), 151–159. https://doi.org/10.1111/j.1751-228X.2009.01065.x

Oman, D., & Thoresen, C. E. (2002). "Does religion cause health?" Differing interpretations and diverse meanings. *Journal of Health Psychology, 7*(4), 365–380. https://doi.org/10.1177/1359105302007004326.

Rothman, K. J., & Greenland, S. (2005). Hill's criteria for causality. In P. Armitage & T. Colton (Eds.), *Encyclopedia of biostatistics* (Vol. 4, 2nd ed.). Chichester: Wiley. https://doi.org/10.1002/0470011815.b2a03072

Saroglou, V. (2010). Religiousness as a cultural adaptation of basic traits: A five-factor model perspective. *Personality and Social Psychology Review, 14*(1), 108–125. https://doi.org/10.1177/1088868309352322

Shaw, S. A., & El-Bassel, N. (2014). The influence of religion on sexual HIV risk. *AIDS and Behavior, 18*(8), 1569–1594. https://doi.org/10.1007/s10461-014-0714-2

VanderWeele, T. J., Jackson, J. W., & Li, S. (2016). Causal inference and longitudinal data: A case study of religion and mental health. *Social Psychiatry and Psychiatric Epidemiology, 51*(11), 1457–1466. https://doi.org/10.1007/s00127-016-1281-9.

Questions on Assessing the Evidence Linking Religion/Spirituality to Health

Doug Oman

Abstract This chapter describes background and methods used in a set of 13 empirical review chapters contained in Part I of this volume (chapters "Model of Individual Health Effects from Religion/Spirituality: Supporting Evidence", "Religious/Spiritual Effects on Physical Morbidity and Mortality", Social and Community-Level Factors in Health Effects from Religion/Spirituality", "Social Identity and Discrimination in Religious/Spiritual Influences on Health", "Environmental Health Sciences, Religion, and Spirituality", "Infectious Diseases, Religion, and Spirituality", "Public Health Nutrition, Religion, and Spirituality", "Maternal/Child Health, Religion, and Spirituality", "Health Policy and Management, Religion, and Spirituality", "Public Health Education, Promotion, and Intervention: Relevance of Religion and Spirituality", "Mental Health, Religion, and Spirituality", "Clinical Practice, Religion, and Spirituality" and "Weighing the Evidence: What is Revealed by 100+ Meta-Analyses and Systematic Reviews of Religion/Spirituality and Health?").

Each of these thirteen review chapers focuses on relations between religious and spiritual (R/S) factors and health variables. This present chapter addresses the following 12 questions:

1. What common methods were employed across reviews?
2. What was done if systematic reviews were unavailable?
3. How do the reviews cover qualitative findings?
4. What are strengths and weaknesses of utilizing systematic reviews as "building blocks"?
5. How are religion and spirituality defined?
6. How do the reviews interpret findings that religious/spiritual factors have both favorable and unfavorable associations with health variables?
7. What about ethics?

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8. How do religion and spirituality express themselves as living forces?
9. How many "dimensions" do religion and spirituality possess?
10. Who is religious/spiritual, and in what ways?
11. Were any public health subfields omitted?
12. How do religion/spirituality and stress "get into the body"?

Keywords Religion · Spirituality · Public health · Systematic review · Meta-analysis · Meta-synthesis · Allostatic load · Methods · Ethics · Qualitative

The first major part of this volume has offered numerous reviews from a public health perspective of empirical evidence on how religious and spiritual (R/S) factors are associated with physical and mental health. As explained in previous chapters, these reviews have been conducted from the perspective of major subfields of public health.

This chapter presents summaries and/or new information on various facets of the reviews' collective methods and limitations, as well as how they have addressed topics such as negative effects and ethical issues. As additional background for the empirical study of religion/spirituality, this chapter also supplies further information about the nature and multidimensionality of religion/spirituality, the numbers of people who engage in them nationally and worldwide, and the processes by with religious/spiritual factors may act through reduced stress to affect physical health.

For the reader's convenience, this information is presented as answers to the 12 questions embedded in the next 12 section headers.

1 Q1: What Common Methods Were Employed Across Reviews?

Because of the massive number of published empirical research studies relevant to many public health subfields, we have usually not attempted to review or describe individual studies. Instead, we have emphasized findings from peer-reviewed systematic reviews and meta-analyses. We have also frequently cited findings from the unrefereed systematic reviews contained in the *Handbooks* by Harold Koenig and his colleagues (Koenig et al. 2001, 2012). Chapter reviews have also given special attention to studies using exemplary methods or theory, as well as research using the World Values Survey or other cross-national samples, and studies examining cross-cultural replicability (for overviews see chapter "International and Global Perspectives on Spirituality, Religion, and Public Health," this volume). We have also given special attention to implications for practice and the documentation of both favorable and unfavorable effects on health from R/S. Thus, while systematic

reviews and meta-analyses represent the foundation and backbone of the reviews – "building blocks," so to speak – they are supplemented in many chapters by descriptions of findings from individual studies of special interest.

2   Q2: What Was Done When Systematic Reviews Were Unavailable?

Several chapters in this volume focus to a greater extent than others on community-level factors. These include the chapters "Social and Community-Level Factors in Health Effects from Religion/Spirituality", "Social Identity and Discrimination in Religious/Spiritual Influences on Health", and "Environmental Health Sciences, Religion, and Spirituality" (this volume). For topics covered in these chapters – social factors and the environment – we found fewer systematic reviews of how R/S relates to variables of interest. As a result, these three chapters depart more than most from this volume's general reliance on systematic reviews. To the extent it was feasible, we therefore reviewed individual studies.

3   Q3: How Do the Reviews Cover Qualitative Findings?

Numerous researchers have used qualitative methods to study R/S and health-related phenomena, and the first edition of the *Handbook* by Koenig et al. (2001, pp. 513–589) included a few dozen qualitative studies in its tables of published research. By the time of the *Handbook*'s second edition, Koenig et al. (2012) wrote that "many more *qualitative* studies have now examined R/S-health relationships in patients with medical or psychiatric illness, although they are simply too numerous to include here" (p. 9, emphasis in original).

The reviews in the present volume have covered qualitative research through the same general approach that we have used for covering quantitative research: Relying whenever possible on systematic reviews, and usually discussing individual studies only in exceptional cases. On several occasions we have therefore cited a type of review commonly called a *meta-synthesis*, a qualitative analogue of a quantitative meta-analysis. Both meta-analyses and meta-syntheses produce aggregated findings. Just as numerous quantitative estimates may be combined through meta-analysis to produce a single aggregated numerical estimate, similarly, a large number of qualitative studies that explore a single topic may be aggregated through meta-synthesis to yield overall themes. In the chapter entitled "Weighing the Evidence: What is Revealed by 100+ Meta-Analyses and Systematic Reviews of Religion/Spirituality and Health?", Table 1 identifies seven qualitative meta-syntheses of R/S-health topics (reviews numbered #12, #51, #52, #97, #104, #105, #106).

4   Q4: What Are Strengths and Weaknesses of Utilizing Systematic Reviews as "Building Blocks"?

A strength of drawing on pre-existing systematic reviews and meta-analyses is that such reliance has made this volume feasible. Using pre-existing reviews has enabled us to provide an overview – a set of snapshots, as it were – of the areas of most intense scholarly and/or practical concern for each public health subfield. Emphasizing systematic reviews also foregrounds the extremely broad base of the R/S-health empirical literature: This literature is neither the invention of a small number of private foundations, nor of only a handful of passionate investigators, even though such leading individuals and organizations have played crucial roles. Rather, thousands of investigators have contributed studies from every continent on Earth,[1] studies that in turn have been systematically reviewed and meta-analyzed by literally hundreds of investigators, passing peer review, and being published in many dozens of refereed journals (see chapter "Weighing the Evidence: What is Revealed by 100+ Meta-Analyses and Systematic Reviews of Religion/Spirituality and Health?," this volume).

Yet our emphasis on systematic reviews is not entirely free from drawbacks. Many systematic reviews have appeared in high impact journals such as *American Journal of Public Health*, *Psychological Bulletin*, and *Psychotherapy and Psychosomatics* (2015 impact factors of 4.138, 14.839, and 7.632, respectively) (Chida et al. 2009; DeHaven et al. 2004; Smith T. B. et al. 2003; Worthington et al. 1996). But not all published systematic reviews are of equally high quality. Furthermore, a few of these published reviews uncovered only a small number of relevant studies (see chapter "Weighing the Evidence: What is Revealed by 100+ Meta-Analyses and Systematic Reviews of Religion/Spirituality and Health?"). On each occasion that we have cited a systematic review or meta-analysis, we have sought to highlight public health-relevant findings and conclusions that are clearly substantiated by the reviewed empirical studies.

5   Q5: How Are Religion and Spirituality Defined?

As noted in the introductory chapter ("Elephant in the Room: Why Spirituality and Religion Matter for Public Health"), the present volume has not sought to impose a single definition of the terms "spirituality" or "religion." Each chapter's usage instead reflects how these terms have been used in the professional literature discussed in the chapter. There is in fact no single scholarly consensus definition of either term, and historically each term has been defined in many different ways

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[1] At least one R/S-health study has been conducted in Antarctica, documenting stable mental health but a depletion over time of spiritual coping resources among 23 winter-over personnel (Joshi et al. 1998).

(Oman 2013). Scholars in multiple disciplines have suggested that these terms may reflect what philosopher Ludwig Wittgenstein called a "family resemblance," and may therefore not be amenable to a closed-form definition involving necessary and sufficient features (Oman 2013; Saler 2000, 2008).

However, as noted in the introductory chapter mentioned earlier, it is commonly asserted that spirituality and religion are partly overlapping constructs, with majorities of US adults viewing themselves as both spiritual and religious, and many also viewing themselves as "spiritual but not religious" (a smaller fraction view themselves as religious but not spiritual). Many also regard the primary or core purpose of religion as the fostering of spirituality, a perspective from which "the field of religion is to spirituality as the field of medicine is to health" (Miller and Thoresen 2003, p. 28). To prevent either construct from being so broad as to lose its meaning, some influential definitional approaches argue that both religion and spirituality are connected in various ways to the *sacred*, which may be understood as including one or more of "concepts of God, the divine, Ultimate Reality, and the transcendent, as well as any aspect of life that takes on extraordinary character by virtue of its association with or representation of such concepts" (Hill and Pargament 2003, p. 65 for application to Indian religion see Oman and Paranjpe 2017).

The reviews in this volume classify practices such as meditation, mindfulness, and yoga as "borderline spiritual constructs" (see section with that title in chapter "Model of Individual Health Effects from Religion/Spirituality: Supporting Evidence," this volume). These constructs each possess a large and rapidly expanding evidence base, but each arguably exists in both spiritual and secular forms. Such borderline constructs are often clearly relevant to understanding R/S-health relations, but are not viewed as inherently spiritual.

6 Q6: How Do the Reviews Interpret Findings That Religion/ Spirituality Have Both Favorable and Unfavorable Associations with Health Variables?

The *generic model* that was presented in the earlier chapter "Model of Individual Health Effects from Religion/Spirituality: Supporting Evidence" emphasizes causative effects from religion/spirituality on mediating factors, such as health behaviors and social support, with which R/S factors usually show favorable (salutary) associations. However, several other chapters focus on topics and health variables with which R/S associations are much more mixed, and not uncommonly display *unfavorable* associations with health-related variables.

A combination of largely healthy (favorable) effects mixed together with a smaller number of inverse (unfavorable) effects is also observed for some other psychosocial factors, such as socioeconomic status. Particularly when plausible explanations of the primary pattern are available, these inverse relations can be viewed as anomalous cases that merit attempts at scientific explanations, thereby

motivating further research.[2] In the case of religion/spirituality, one widely used explanation for their salutary relations with individual health outcomes is provided by the aforementioned generic model. The favorable patterns of association suggested by the generic model hold reasonably well in literatures that emphasize individual-level factors (e.g., chapters "Infectious Diseases, Religion, and Spirituality", "Public Health Nutrition, Religion, and Spirituality", "Maternal/Child Health, Religion, and Spirituality", "Health Policy and Management, Religion, and Spirituality", "Public Health Education, Promotion, and Intervention: Relevance of Religion and Spirituality", "Mental Health, Religion, and Spirituality", "Clinical Practice, Religion, and Spirituality"), where unfavorable associations exist but favorable associations are predominant.

The generic model offers less help in explaining the more mixed favorability/unfavorability of associations observed with many community-level health-related factors, such as social inequality, discrimination, and environmental attitudes, that are reviewed in the three chapters that emphasize community-level factors ("Social and Community-Level Factors in Health Effects from Religion/Spirituality", "Social Identity and Discrimination in Religious/Spiritual Influences on Health", "Environmental Health Sciences, Religion, and Spirituality").

Parallel to individual-level processes, some of the unfavorable R/S associations with group-level measures may reflect reverse causality due to people "turning to religion" in times of distress (e.g., see discussion of income inequality in chapter "Social and Community-Level Factors in Health Effects from Religion/Spirituality"). But reverse causality does not seem an adequate explanation for all inverse associations. If religion/spirituality are theorized as fundamental causes of health – parallel to what is often claimed for higher socioeconomic status (see chapter "Weighing the Evidence: What is Revealed by 100+ Meta-Analyses and Systematic Reviews of Religion/Spirituality and Health?," this volume) – then such unfavorable associations appear to represent an anomaly that needs explanation.

We have not encountered any clearly formulated attempts to problematize and explain unfavorable R/S-health associations at the intermediate level of abstraction that we are pursuing here.[3] However, to make an initial step towards such an intermediate-level theoretical explanation, several chapters in this volume have articulated what we have been calling a *dynamic and evolving* view or model of

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[2] For example, Adler et al. (1994), in discussing socioeconomic gradients, wrote that "The concept of individual control over existing life circumstances… might be a higher order variable that synthesizes or renders coherent a number of the factors reviewed here" (p. 22), also noting that "In a few diseases such as malignant melanoma and breast cancer, a reverse gradient is found…. study of the variation in the direction and degree of association of SES with specific diseases across time and countries would be valuable" (p. 16).

[3] As problematized here, the explanatory gap resides at an intermediate level of abstraction: The needed theoretical explanation is at a lower level of abstraction than theological questions of *theodicy* (explanations for the existence of evil), but at a higher level of abstraction than attributing, for example, worse outcomes in specific religious groups to specific group-level factors (e.g., religious doctrines mandating avoidance of blood transfusions or other medical procedures).

religion and spirituality.[4] This model appears relevant to interpreting both the rarer individual-level health outcome anomalies as well as the more frequent unfavorable associations observed between R/S and community-level factors.

In the fullest – though still rudimentary – presentation of this dynamic model of religion/spirituality, the chapter entitled "Social and Community-Level Factors in Health Effects from Religion/Spirituality" (this volume) argues that mixed association may arise in part from the fact that whereas religious traditions revere various general principles or virtues such as *justice* and *stewardship*, they also support the enactment of such principles in the lives of their adherents by espousing the sanctity of various specific supporting practices, norms, or principles (Pargament and Mahoney 2005; Todd et al. 2014; Mahoney et al. 2005). For example, many religious traditions teach some type of dietary restrictions and espouse the sanctity of marital commitments. Such sanctified practices and norms can aid implementation of prosocial virtue, but can also become unhelpful if their specific forms come to reflect outdated conditions or vested sectional interests, rather than well-grounded applications of justice, stewardship, or other overarching virtues that they ostensibly support. If religious/spiritual traditions are viewed as capable of learning over time how to better enact their core ideals in changed situations, then poorer norms and practices may eventually be improved (Gershkoff-Stowe and Thelen 2004). Through such correction, religion/spirituality could potentially act as a "fundamental cause" of health-related factors and processes that will "maintain an [inverse] association with disease even when intervening mechanisms change" (Link and Phelan 1995, p. 80; see also chapter "Weighing the Evidence: What is Revealed by 100+ Meta-Analyses and Systematic Reviews of Religion/Spirituality and Health?", this volume).

7   Q7: What About Ethics?

When public health students first encounter evidence that R/S may causally affect health, one of the first questions that often comes to mind concerns how to *apply* such knowledge. Even if causal effects on health are demonstrated, can it ever be ethical to implement an intervention that "targets" religious or spiritual factors? Doesn't the US Constitutional separation of church and state also preclude the possibility of R/S- targeted interventions?

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[4] Chapters that mention this dynamic model besides Chapter "Social and Community-Level Factors in Health Effects from Religion/Spirituality" include Chapter "Model of Individual Health Effects from Religion/Spirituality: Supporting Evidence" (some unfavorable health behaviors, such as obesity), Chapter "Social Identity and Discrimination in Religious/Spiritual Influences on Health" (mixed discrimination associations), Chapter "Environmental Health Sciences, Religion, and Spirituality" (mixed environmental attitude/practice associations), and Chapter "Health Policy and Management, Religion, and Spirituality" (mixed links with healthcare utilization).

These are excellent and very important questions. Indeed, a variety of ethical codes for health professionals *do* preclude imposing professional R/S beliefs on clients, and the US Constitution *does* prevent government funding of certain interventions that might target R/S factors. Furthermore, on at least one occasion a lawsuit has contested the place of R/S in US healthcare (Warnock 2009). But the published literature and the reviews in this volume also make abundantly clear that R/S factors are not excluded from contemporary healthcare, and that R/S factors play a role in many accepted interventions. For example, a recent meta-analysis synthesized 46 studies of "religious accommodative therapies and nonreligious spirituality therapies," reporting many statistically significant benefits (Worthington et al. 2011, p. 204; see chapter "Public Health Education, Promotion, and Intervention: Relevance of Religion and Spirituality," this volume). Moreover, in the *Journal of the American Medical Association*, Koenig (2000) noted that "taking a spiritual history," when appropriate, "is often a powerful intervention in itself" (p. 1708). Going further, Kristeller et al. (2005) have supplied a more nuanced 5–7 min flowchart protocol to guide physicians in supporting R/S coping by patients, reporting evidence for significantly reduced patient depression, increased quality of life, and other benefits (see chapter "Clinical Practice, Religion, and Spirituality," this volume). In certain situations, it may be unethical *not* to take into account a patient's religion – "lack of appropriate clinical spiritual referrals can constitute a form of negligence" (Post et al. 2000, p. 580).

More generally, ethical topics or issues were explicitly noted in a small but diverse subset of our review chapters. Perhaps most prominently, R/S-related ethical issues that are relevant to managers in health professions comprise a primary focus of the "Ethical and legal issues" subsection of this volume's review of health policy and management (chapter "Health Policy and Management, Religion, and Spirituality"). Several social phenomena with ethical implications, including discrimination and income inequality, are also discussed (note also the concern expressed about possible "public healthification" of societal ethical issues, Meyer and Schwartz 2000, p. 1189). These concerns and other appearances of ethical issues in the review chapters are summarized in Box 1.

Ethical topics are also discussed in this volume's educational chapters that discuss teaching about R/S-health in public health schools at Emory University, the University of California at Berkeley, the University of Illinois at Chicago, and especially in Boston University's long-standing ethically-focused approach to teaching about R/S and health (see chapters "Religion and Public Health at Emory University", e.g., Table 1 and Co-curricular activities section; "An Evidence-Based Course at U.C. Berkeley on Religious and Spiritual Factors in Public Health", Table 1, Week 6; "Online Teaching of Public Health and Spirituality at University of Illinois: Chaplains for the Twenty-First Century"; and "The Boston University Experience: Religion, Ethics, and Public Health," this volume).

Box 1: Ethical Issues Noted in Review Chapters in Part I of This Volume
Ethical issues appear in several chapter reviews that include:

- Research on character strengths and virtues, which are viewed as possible causal mediators of R/S-health relations are discussed in the chapter on the individual-level generic model ("Model of Individual Health Effects from Religion/Spirituality: Supporting Evidence", this volume);
- Ethics are noted as relevant to multi-level R/S interventions, and a variety of ethically loaded social phenomena, such as income inequality, are discussed in the chapter on "Social and Community-Level Factors in Health Effects from Religion/Spirituality" (see subsections on "Multilevel spiritual interventions" and "Socio-Economic Inequality");
- Ethics is relevant to almost the entire discrimination-focused chapter entitled "Social Identity and Discrimination in Religious/Spiritual Influences on Health" (see Lippert-Rasmussen 2013);
- R/S relationships with stewardship attitudes and behaviors toward the environment, including alternative approaches to restraining population growth, are discussed in the chapter on "Environmental Health Sciences, Religion, and Spirituality";
- R/S-related ethical issues of concern to healthcare managers, as well as the ethical acceptability of various procedures, such as infertility treatment, are discussed in the chapter on "Health Policy and Management, Religion, and Spirituality" (see subsections "Ethical and legal issues" and "Health Service Utilization: Other Services");
- The challenge of religiously motivated rejection of medical care, as well as the acceptability of praying with patients, is discussed in the chapter on "Clinical Practice, Religion, and Spirituality".

8   Q8: How Do Religion and Spirituality Express Themselves as Living Forces?

The reviews that appear in Part I of this volume give much attention to the relationship of R/S factors to other variables of interest, but do not offer a comprehensive introduction to the nature of religion and spirituality as living practices and forces in individual and collective life. A full introduction to the phenomena of spirituality and religion is beyond this volume's scope, but a few brief remarks may be helpful.

A century ago, most adults in the US and worldwide had direct experience through their families or communities of what it means to be religious on a daily basis. They regularly witnessed people around them drawing on religion as a source

of strength in bad times and as a source of of guidance and discernment in good times. Today, in contrast, large numbers of Americans retain far less familiarity and have developed far less of an *insider intuition* – what an anthropologist might call a direct or vicarious *emic* perspective (Berry 1999) – about how religion and spirituality often function as vital orienting systems in daily life. Whether or not scholars and scientists are religiously/spiritually engaged themselves, such insider intuitions can be helpful for thinking creatively, empathically, and also critically, about potential causative effects from religious and spiritual engagement.

How can such emic intuitions be learned today by those who lack religious/spiritual upbringings? To some degree, insider perspectives are embedded in the theoretical and interpretive sections of many research reports, thereby enabling readers to gradually, if incompletely, assimilate intuitions about the living traditions under study. But we suspect that William James (1961/1902) was correct in his assessment that "a large acquaintance with particulars often makes us wiser than the possession of abstract formulas, however deep" (p. 17). Thus, lengthier resources for cultivating such empathic/intuitive perspectives are mentioned in some chapters in Part III for academic public health educators. For example, the use of a chapter by Pargament et al. (2001) as a reading assignment in coursework at U.C. Berkeley is described in the Part III chapter entitled "An Evidence-Based Course at U.C. Berkeley on Religious and Spiritual Factors in Public Health". For a book length introduction that conveys a sense of how insiders experience each major world religion, Huston Smith's (1991) *The World's Religions* remains widely used 60 years after its first publication. Similarly, Robert Wuthnow's (1998) *After Heaven* offers a readable and evocative introduction to the varieties of spirituality in the contemporary US.

9 Q9: How Many "Dimensions" Do Religion and Spirituality Possess?

This volume's introductory chapter noted that spirituality and religion are each widely understood as multidimensional, with it possible for a person to be high in one dimension and low in another dimension. That introductory chapter, entitled "Elephant in the Room: Why Spirituality and Religion Matter for Public Health", also mentioned several commonly studied R/S dimensions, such as preferred denomination, frequency of attendance at worship services, frequency of prayer. It also mentioned that most R/S-health studies have employed a comparatively small number of the literally hundreds of published R/S measures. Readers new to empirical studies of R/S may find some additional elaboration useful.

Table 1 offers a window into R/S dimensional diversity as it has been studied empirically in relation to health. The rows of Table 1 represent types of dimensions that correspond to many of the most commonly studied R/S variables, variables that are foundational to the R/S-health empirical knowledge base. More specifically, the

Table 1 Major dimensions of religion/spirituality (R/S) from *Handbook* codes

Dimension in Koenig et al.'s (2012) *Handbook*[a]	Code	BMMRS[b]
Dimensions showing degree of engagement in R/S		
Organizational Religious Activities (religious attendance, church-related activities, religious giving)	ORA	✓✓
Non-organizational Religious Activities (personal prayer, scripture reading, religious television/radio)	NORA	✓✓
Subjective Religiosity (importance, self-rated religiosity, etc.)	SR	✓
Subjective Spirituality	SSp	✓
Religious Commitment	RCm	✓✓
Religious Coping	RC	✓✓
Negative Religious Coping, pleading, religious strain, negative interpersonal religious interactions or negative religious support, spiritual decline, negative relationship with or attachment to God	NRC	✓
Positive Religious Coping	PRC	✓
Religious Belief	RB	✓✓
Church Membership [sic]	CM	
Spiritual Support	SpS	✓✓
Church-Based Support [sic]	Rsup	
Intrinsic Religiosity	IR	
Extrinsic Rreligiosity	ER	
Quest Religiosity	Q	
Religious Experience	RE	
Daily Spiritual Experiences[c]	DSE	✓✓
Spirituality scale (unspecified)	Sp	
Religious scale (general)	R	
Duke University Religion Index (containing ORA, NORA, and IR)[c]	DUREL	
Spiritual Well-Being (RWB religious well-being and EWB existential well-being)	SWB	
World Health Organization Qualit of Life-Spirituality, Religion, Personal Beliefs[c]	WHOQOL-SP	
Functional Assessment of Chronic Illness Therapy Spiritual Well-Being[c]	FACIT-SP	
(others)[d]		
Denominational membership categories		
Denomination or affiliation	D	✓✓
(others)[e]		

[a]Dimensions or denominational categories possessing coded *abbreviations,* as listed in Koenig et al. (2012), pp. 607–608

[b]Check marks indicate that an analogous dimension or category is contained in the Brief Multidimensional Measure of Religiousness/Spirituality (BMMRS, Fetzer Institute/National Institute on Aging Working Group 1999) as the main focus of a chapter (✓✓) or within a chapter (✓)

[c]Represents a specific widely used measurement instrument, rather than (or that is equivalent to) a conceptual R/S dimension

[d]Many other dimensions appear unabbreviated (e.g., "faith score," "religious peyote use")

[e]Many other denominational categories appear unabbreviated (e.g., "Mormon," "Hindu")

table displays dimensions that were assigned coding abbreviations by Koenig et al. (2012) to represent the "religious variable" in the several thousand empirical studies that these investigators catalogued in their *Handbook* appendices.[5] The table's final column shows that many but not all of these dimensions are measurable using a set of brief questionnaire scales developed for health research by an expert panel co-sponsored by the National Institute of Aging (Fetzer Institute/National Institute on Aging Working Group 1999).

Several of the dimensions and measures listed in Table 1 possess a long research history that is noteworthy in one way or another. Some selections of that history are presented in Box 2. Fuller treatments of the history and importance of many dimension may be found elsewhere (e.g., Hill and Hood 1999; Hood et al. 2009).

Box 2: Examples of History Connected to Various Dimensions of Religion/Spirituality
- Frequency of attendance at religious services, which can be measured with a single item, has been included in large epidemiologic studies for more than half a century, and has repeatedly been found to predict longevity in healthy Western populations (Chida et al. 2009).
- Intrinsic and extrinsic religiosity are among the most intensely studied R/S dimensions. Derived from the work of psychologist Gordon Allport, the intrinsic dimension represents the assimilation and *living out* of a "meaning-endowing framework" through which all of life is understood, whereas the extrinsic orientation compartmentalizes religious teachings, prioritizing conventions and instrumentally *using* religious group membership for personal comfort (Donahue 1985, p. 400).
- Religious and spiritual "struggle," closely related to negative religious coping, is one of the few R/S dimensions that consistently predicts poorer mental health outcomes. R/S struggle has been measured in numerous ways, and now possesses high-quality validated measures (e.g., Exline et al. 2014) (for more on R/S struggle, see chapter on "Mental Health, Religion, and Spirituality," this volume).
- Koenig (2008, p. 349) has criticized the FACIT-SP, along with several other measures that claim to measure spirituality, as not useful for studies of spirituality and well-being relations. He views them as "contaminated" by inclusion of well-being items, thereby generating meaningless "tautological" positive correlation with well-being.

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[5] Other R/S dimensions were entered unabbreviated into the *Handbook* appendices, and therefore do not appear in Table 1. Several reviews of religious/spiritual measures and some annotated collections are available, although none is exhaustive (de Jager Meezenbroek et al. 2012; Fetzer Institute/National Institute on Aging Working Group 1999; Hill and Hood 1999; Kapuscinski and Masters 2010; Lewis 2008; Lucchetti et al. 2013; Monod et al. 2011; Selman et al. 2011a, b).

This volume places major emphasis on effects of religion/spirituality that potentially generalize to diverse traditions. Our reviews therefore give most attention to the top-listed category of measures in Table 1, "Dimensions showing degree of engagement in R/S." We devote comparatively little attention to health differences between denominations.

Empirically, different dimensional measures of degree of R/S often show medium-size correlations with each other, and sometimes display higher-order factor structures (e.g., Idler et al. 2003). Over time, different religious/spiritual dimensions may influence each other – for example, in a process of spiritual development or maturation (Thoresen et al. 2005). Nonetheless, different dimensions may sometimes also show unique associations with other variables of interest, such as health (Johnson et al. 2008).

The review chapters in this volume do not always describe the precise dimension or measure that has been used when explaining findings from an R/S-health study. For example, when explaining a meta-analysis or systematic review, it has often been impossible to describe all of the diverse measures that have been pooled together or aggregated. At other times, we do describe a specific R/S dimension that has been employed, especially when such information enhances interpretability of the findings. Our emphasis has been on the overall macro-level patterns of findings, and readers seeking more detail can find it in the cited literature.

10   Q10: Who Is Religious/Spiritual, and in What Ways?

To grasp the importance of religion and spirituality to a practically-oriented field such as public health, it is important to recognize that large majorities of people, both in the US and worldwide, adhere to some form of spiritual or religious belief or practice.

The US Census does not track religious or spiritual variables, but many US data on R/S belief and affiliation are gathered by nongovernmental organizations. Two important sources of data about R/S views and commitments of US adults are the Pew Foundation and the Gallup Organization. Pew conducts many large-scale demographically-focused surveys that supply accurate estimates of proportions and trends of affiliation by the US population to various religious denominations. For example Pew's 2014 U.S. Religious Landscape Study (n > 35,000) revealed that from 2007 to 2014, proportions of self-identified Christians fell from 78.4 to 70.8%, adherents to non-Christian traditions grew from 4.7 to 5.9%, and the unaffiliated grew from 16.1 to 22.8% of US adults (Pew Research Center 2015). The Gallup Organization conducts numerous surveys of US adults, often including questions about religious and/or spiritual attitudes or practices, with some questions having been asked repeatedly over many decades. For example, in 2016, Gallup reported that 53% of US adults viewed themselves as "very religious," a figure that "is low on a relative basis but is similar to what Gallup measured in 1978 and 1987" (Newport 2016, December 23). Similarly, the same Gallup publication reported that

in 2014 through 2016, an historic low of 36% indicated that they had attended religious worship services in the past week – a figure not much different than the previous low of 37% in 1940, and only slightly lower than the "figures of approximately 40%" that were reported for many decades after the 1950s (see also Newport 2012).

Worldwide information about religious variables and trends is also available. The Pew Foundation is a major source – for example, Pew's 2010 Global Religious Landscape report (Pew Research Center 2012) synthesized hundreds of national surveys to estimate that of 6.9 billion adults and children worldwide, 5.8 billion (84%) were affiliated with a religious tradition. The largest groups as percentages of the world's population are Christians (32%), Muslims (23%), Hindus (15%), Buddhists (7%), adherents to folk and traditional religions (6%), and the unaffiliated (16%). The report also notes that

> many of the religiously unaffiliated have some religious beliefs. For example, belief in God or a higher power is shared by 7% of Chinese unaffiliated adults, 30% of French unaffiliated adults and 68% of unaffiliated U.S. adults. Some of the unaffiliated also engage in certain kinds of religious practices. For example, 7% of unaffiliated adults in France and 27% of those in the United States say they attend religious services at least once a year. And in China, 44% of unaffiliated adults say they have worshiped at a graveside or tomb in the past year. (p. 24)

To maximize understanding, many social scientists combine such quantitative findings with qualitative interview data. One leader in using such mixed methods to understand R/S at a US national level has been sociologist Robert Wuthnow (1998, 2005).

11   Q11: Were Any Public Health Subfields Omitted?

In this volume we have aspired to offer reviews that address the concerns of all major public health subfields, but we have not been able to cover every topic of interest to public health. At least two limitations of scope merit mention.

First, *aging and public health* is a topic in which some schools of public health offer coursework or specialty area certificates, although the extent of such offerings is not recorded in ASPPH statistics. Among health fields, gerontology has had a comparatively longstanding interest in R/S factors, and a substantial portion of the early work on R/S-health focused on aging populations. Unfortunately, this long interest has not prevented R/S factors from being omitted from some of the more prominent work on aging. For example, spirituality has been identified as a "forgotten factor" in Rowe and Kahn's influential model of successful aging (Crowther et al. 2002). For ensuring attention to R/S-aging issues, the present volume offers no single chapter overview of R/S-aging research, but many aging-related topics are embedded in the available review chapters. For example, the chapter entitled "Religious/Spiritual Effects on Physical Morbidity and Mortality" examines relations of R/S with several chronic diseases as well as disability. Similarly, the chapter entitled "Clinical Practice, Religion, and Spirituality" examines R/S and

end of life interventions. Many relevant systematic reviews and meta-analyses are listed in the chapter entitled "Weighing the Evidence: What is Revealed by 100+ Meta-Analyses and Systematic Reviews of Religion/Spirituality and Health?" Examples of age-related topics addressed by narrative or systematic reviews include caregiving and long-term care (Hebert et al. 2006; McFadden 2005). Several excellent authored and edited books have also addressed R/S-health connections in older populations (e.g., Kimble and McFadden 2003; Krause 2008).

A second topic that lacks a focused review chapter is genetics. Some reported evidence links R/S to genetic factors, and a very small subset of these has examined relations of R/S with health-related variables (e.g., Boomsma et al. 1999; Eaves et al. 1999). More recently, Churchill (2009) has argued for the importance of religion/spirituality to understanding how patients respond to genetic diagnoses and engage in genetic therapies. While genetics has become a topic of interest in public health, its implications for the study of religion/spirituality and health are not yet clear.

12 Q12: How Do Religion/Spirituality and Stress "Get Into the Body"?

Sometimes scholars and scientists have misunderstood religion and spirituality as focused solely on entities that are ethereal and disconnected from the material world. It is therefore frequently asked how R/S factors can "get into the body." On one level, the answer is straightforward: Many pathways by which engagement with religion and/or spirituality may plausibly influence the body have been described in Part I of this volume, especially in the chapter entitled "Model of Individual Health Effects from Religion/Spirituality: Supporting Evidence." That chapter described major causative pathways that include adherence to well-established health behaviors, such as regular physical exercise and refraining from smoking, that affect physical health through well-understood mechanisms. These pathways are graphically presented in that chapter's Fig. 1, entitled "Model of major causal effects of individual religion/spirituality on physical health."

That same review chapter also identified another potential mediating pathway as the use of religious/spiritual methods of coping with stress. Viewing reduced stress as a causative pathway invites the question: How does stress itself get into the body? Such "mind/body influences" have been investigated for many decades independently of questions about R/S and health. Much is now known about how stress affects physical health. A detailed review of the overall stress-health literature is beyond the scope of this volume, but a sketch of a few major ideas and findings may offer a useful starting point for readers seeking greater understanding.

First, it must be remembered that stress experiences often affect the body in part by catalyzing adverse changes in health behaviors, such as when stressed individuals attempt to raise their mood through substance abuse (e.g., using alcohol to "drown one's sorrows"). Yet it has long been understood that stressful experiences

may also affect the body directly by catalyzing biochemical changes, such as the elevation of adrenaline or other hormones as part of a "fight or flight" response. Furthermore, ongoing chronic stress may lead to hormone imbalance or dysregulation of other bodily systems, thereby producing "wear and tear" and enhancing disease risk. The potential for such direct effects of stress on bodily disease has been studied since the time of Hans Selye (1955). In recent decades, much work in the field has been conceptualized using the so-called allostatic load model (Juster et al. 2010; McEwen 2015).

Allostasis refers to adaptation to changed circumstances, and allostatic load refers to the cumulative burden of such adaptation. In the words of some of its developers, the allostatic load model "expands the stress-disease literature by proposing a temporal cascade of multisystemic physiological dysregulations that contribute to disease trajectories" (Juster et al. 2010, p. 2). Cumulative excess stress is viewed as potentially giving rise to imbalances in neuroendocrine, immune, metabolic, and cardiovascular system functioning (note that most of these systems are graphically represented in the aforementioned figure that represents the model of individual causal effects). Research using the allostatic load approach commonly employs indices based on "allostatic load batteries" that encompass biomarkers reflecting the functioning of many or all of these bodily systems (McEwen 2015, p. S3). Examples of relevant biomarkers include 12-hour urinary cortisol, epinephrine, serum dehydroepiandrosteronesulphate (DHEA-S), various cholesterol measures, aggregate systolic and diastolic blood pressure, plasma glycosylated hemoglobin (HbA1c), waist-to-hip ratio, telomere length, and telomerase (Juster et al. 2010; McEwen 2015). A review by Juster et al. (2010) of 58 studies has confirmed that such indices offer enhanced predictiveness of morbidity and mortality outcomes.

At least three studies of religion/spirituality and health have employed allostatic load batteries, revealing generally salutary and favorable associations (Hill et al. 2014; Hill et al. 2017; Maselko et al. 2007). The earliest study by Maselko et al. (2007) administered a 10-component measure of allostatic load (AL) to high functioning older US adults (n = 853), finding that attendance at religious services was associated with lower AL among women but not among men, after adjusting for age, income, education, marital status, and level of physical functioning. Second, a study by Hill et al. (2014) administered an 8–component AL scale to a representative sample of older US adults (n = 1450), finding that attendance at religious services predicted lower AL after adjustments for age, gender, income, and race. A third study by Hill et al. (2017, p. 956) employed an 8-item scale to measure AL among older Mexican adults (n = 772), finding that frequency of participation in "events organized by your church" predicted lower AL after adjusting for age, gender, education, income, health status, and activities of daily living.

Individual biomarkers of relevance to AL batteries have also been investigated in numerous empirical studies of R/S factors. Dozens of studies showing generally salutary links between R/S and cardiovascular biomarkers such as cholesterol and blood pressure (hypertension), as well as inflammation, have been discussed in the chapter on "Religious/Spiritual Effects on Physical Morbidity and Mortality" (this volume). Generally salutary links have also been reported in studies of R/S factors

and other biomarkers, such as cortisol and telomere length (Bormann et al. 2009; Hill et al. 2016; Tobin and Slatcher 2016). Koenig et al. (2012) have indexed 19 studies of cortisol (11 showing favorable associations and the remainder null, pp. 846–847), as well as 5 studies of epinephrine/norepinephrine (4 showing favorable associations and the remaining one null, pp. 847–848). Multiple studies have also linked better individual biomarkers to meditation, a so-called "borderline spiritual construct" that exists in both spiritual and secular form (see discussion in section above on Q5; Schutte and Malouff 2014). Unfortunately, more than a dozen years have elapsed since the most recent refereed critical review of R/S and biomarkers by Seeman et al. (2003), who used a levels-of-evidence approach and reported a "reasonable" l evel of evidence that linked practices such as attendance at religious services to better immune competence and lower blood pressure. An updated and systematic review of evidence linking R/S factors, biomarkers, and allostatic load, could help advance our understanding of how and when stress responses are key mediators between R/S engagement and physical and mental health.

References

Adler, N. E., Boyce, T., Chesney, M. A., Cohen, S., Folkman, S., Kahn, R. L., et al. (1994). Socioeconomic status and health: The challenge of the gradient. *American Psychologist, 49*(1), 15–24. https://doi.org/10.1037/0003-066X.49.1.15.

Berry, J. W. (1999). Emics and etics: A symbiotic conception. *Culture & Psychology, 5*(2), 165–171. https://doi.org/10.1177/1354067x9952004.

Boomsma, D. I., de Geus, E. J., van Baal, G. C., & Koopmans, J. R. (1999). A religious upbringing reduces the influence of genetic factors on disinhibition: Evidence for interaction between genotype and environment on personality. *Twin Research, 2*(2), 115–125. https://doi.org/10.1375/twin.2.2.115.

Bormann, J. E., Aschbacher, K., Wetherell, J. L., Roesch, S., & Redwine, L. (2009). Effects of faith/assurance on cortisol levels are enhanced by a spiritual mantram intervention in adults with HIV: A randomized trial. *Journal of Psychosomatic Research, 66*(2), 161–171. https://doi.org/10.1016/j.jpsychores.2008.09.017.

Chida, Y., Steptoe, A., & Powell, L. H. (2009). Religiosity/spirituality and mortality. *Psychotherapy and Psychosomatics, 78*(2), 81–90. https://doi.org/10.1159/000190791.

Churchill, L. R. (2009). Religion, spirituality, and genetics: Mapping the terrain for research purposes. *American Journal of Medical Genetics Part C: Seminars in Medical Genetics, 151C*(1), 6–12. https://doi.org/10.1002/ajmg.c.30195.

Crowther, M. R., Parker, M. W., Achenbaum, W. A., Larimore, W. L., & Koenig, H. G. (2002). Rowe and Kahn's model of successful aging revisited: Positive spirituality – The forgotten factor. *The Gerontologist, 42*(5), 613–620. https://doi.org/10.1093/geront/42.5.613.

de Jager Meezenbroek, E., Garssen, B., van den Berg, M., van Dierendonck, D., Visser, A., & Schaufeli, W. B. (2012). Measuring spirituality as a universal human experience: A review of spirituality questionnaires. *Journal of Religion and Health, 51*(2), 336–354. https://doi.org/10.1007/s10943-010-9376-1.

DeHaven, M., Hunter, I. B., Wilder, L., Walton, J. W., & Berry, J. (2004). Health programs in faith-based organizations: Are they effective? *American Journal of Public Health, 94*(6), 1030–1036. https://doi.org/10.2105/AJPH.94.6.1030.

Donahue, M. J. (1985). Intrinsic and extrinsic religiousness: Review and meta-analysis. *Journal of Personality and Social Psychology, 48*(2), 400–419. https://doi.org/10.1037/0022-3514.48.2.400.

Eaves, L., D'Onofrio, B., & Russell, R. (1999). Transmission of religion and attitudes. *Twin Research, 2*(2), 59–61. https://doi.org/10.1375/136905299320565924.

Exline, J. J., Pargament, K. I., Grubbs, J. B., & Yali, A. M. (2014). The religious and spiritual struggles scale: Development and initial validation. *Psychology of Religion and Spirituality, 6*(3), 208–222. https://doi.org/10.1037/a0036465.

Fetzer Institute/National Institute on Aging Working Group. (1999). *Multidimensional measurement of Religiousness/Spirituality for use in health research*. Kalamazoo: Fetzer Institute (full text: http://www.fetzer.org).

Gershkoff-Stowe, L., & Thelen, E. (2004). U-shaped changes in behavior: A dynamic systems perspective. *Journal of Cognition and Development, 5*(1), 11–36. https://doi.org/10.1207/s15327647jcd0501_2.

Hebert, R. S., Weinstein, E., Martire, L. M., & Schulz, R. (2006). Religion, spirituality and the well-being of informal caregivers: A review, critique, and research prospectus. *Aging & Mental Health, 10*(5), 497–520. https://doi.org/10.1080/13607860600638131.

Hill, P. C., & Hood, R. W., Jr. (Eds.). (1999). *Measures of religiosity*. Birmingham: Religious Education Press.

Hill, P. C., & Pargament, K. I. (2003). Advances in the conceptualization and measurement of religion and spirituality: Implications for physical and mental health research. *American Psychologist, 58*(1), 64–74. https://doi.org/10.1037/0003-066X.58.1.64.

Hill, T. D., Rote, S. M., & Ellison, C. G. (2017). Religious participation and biological functioning in Mexico. *Journal of Aging and Health, 29*(6), 951–972. https://doi.org/10.1177/0898264317716244.

Hill, T. D., Rote, S. M., Ellison, C. G., & Burdette, A. M. (2014). Religious attendance and biological functioning: A multiple specification approach. *Journal of Aging and Health, 26*(5), 766–785. https://doi.org/10.1177/0898264314529333.

Hill, T. D., Ellison, C. G., Burdette, A. M., Taylor, J., & Friedman, K. L. (2016). Dimensions of religious involvement and leukocyte telomere length. *Social Science and Medicine, 163*, 168–175. https://doi.org/10.1016/j.socscimed.2016.04.032.

Hood, R. W., Hill, P. C., & Spilka, B. (2009). *The psychology of religion: An empirical approach* (4th ed.). New York: Guilford.

Idler, E. L., Musick, M. A., Ellison, C. G., George, L. K., Krause, N., Ory, M. G., et al. (2003). Measuring multiple dimensions of religion and spirituality for health research: Conceptual background and findings from the 1998 general social survey. *Research on Aging, 25*(4), 327–365. https://doi.org/10.1177/0164027503025004001.

James, W. (1961/1902). *The varieties of religious experience: A study in human nature*. New York: Collier. (originally published in 1902)

Johnson, T. J., Sheets, V. L., & Kristeller, J. L. (2008). Empirical identification of dimensions of religiousness and spirituality. *Mental Health, Religion and Culture, 11*(8), 745–767. https://doi.org/10.1080/13674670701561209.

Joshi, A., Bhargava, R., & Scachdeva, U. (1998). Mental distress among winter-over personnel in Antarctica. Fourteenth Indian Expedition to Antarctica, Scientific Report, Department of Ocean Development, Technical Publication, No. 12, 333–341.

Juster, R.-P., McEwen, B. S., & Lupien, S. J. (2010). Allostatic load biomarkers of chronic stress and impact on health and cognition. *Neuroscience & Biobehavioral Reviews, 35*(1), 2–16. https://doi.org/10.1016/j.neubiorev.2009.10.002.

Kapuscinski, A.N., & Masters, K.S. (2010). The current status of measures of spirituality: A critical review of scale development. Psychology of Religion and Spirituality*, 2*(4), 191–205, doi:https://doi.org/10.1037/a0020498; Supplemental: 10.1037/a0020498.supp.

Kimble, M., & McFadden, S. H. (Eds.). (2003). *Aging, spirituality, and religion: A handbook* (Vol. 2). Minneapolis: Fortress Press.

Koenig, H. G. (2000). Religion, spirituality, and medicine: Application to clinical practice. *Journal of the American Medical Association, 284*(13), 1708. https://doi.org/10.1001/jama.284.13.1708-JMS1004-5-1.

Koenig, H. G. (2008). Concerns about measuring "spirituality" in research. *Journal of Nervous and Mental Disease, 196*(5), 349–355. https://doi.org/10.1097/NMD.0b013e31816ff796.

Koenig, H. G., McCullough, M. E., & Larson, D. B. (2001). *Handbook of religion and health*. New York: Oxford University Press.

Koenig, H. G., King, D. E., & Carson, V. B. (2012). *Handbook of religion and health* (2nd ed.). Oxford/New York: Oxford University Press.

Krause, N. M. (2008). *Aging in the church: How social relationships affect health*. West Conshohocken: Templeton Foundation Press.

Kristeller, J. L., Rhodes, M., Cripe, L. D., & Sheets, V. (2005). Oncologist assisted spiritual intervention study (OASIS): Patient acceptability and initial evidence of effects. *International Journal of Psychiatry in Medicine, 35*(4), 329–347. https://doi.org/10.2190/8AE4-F01C-60M0-85C8.

Lewis, L. M. (2008). Spiritual assessment in African-Americans: A review of measures of spirituality used in health research. *Journal of Religion and Health, 47*(4), 458–475. https://doi.org/10.1016/S0191-8869(03)00045-X.

Link, B. G., & Phelan, J. (1995). Social conditions as fundamental causes of disease. *Journal of Health and Social Behavior, 35*(Supp), 80–94. https://doi.org/10.1177/0022146510383498.

Lippert-Rasmussen, K. (2013). Discrimination. In H. LaFollette (Ed.), *International encyclopedia of ethics* (Vol. 3, pp. 1405–1415). Malden: Wiley-Blackwell.

Lucchetti, G., Bassi, R. M., & Lucchetti, A. L. G. (2013). Taking spiritual history in clinical practice: A systematic review of instruments. *Explore: The Journal of Science and Healing, 9*(3), 159–170. https://doi.org/10.1016/j.explore.2013.02.004.

Mahoney, A., Carels, R. A., Pargament, K. I., Wachholtz, A., Leeper, L. E., Kaplar, M., et al. (2005). The sanctification of the body and behavioral health patterns of college students. *The International Journal for the Psychology of Religion, 15*(3), 221–238. https://doi.org/10.1207/s15327582ijpr1503_3.

Maselko, J., Kubzansky, L. D., Kawachi, I., Seeman, T., & Berkman, L. (2007). Religious service attendance and allostatic load among highfunctioning elderly. *Psychosomatic Medicine, 69*(5), 464–472. https://doi.org/10.1097/PSY.0b013e31806c7c57.

McEwen, B. S. (2015). Biomarkers for assessing population and individual health and disease related to stress and adaptation. *Metabolism - Clinical and Experimental, 64*(3), S2–S10. https://doi.org/10.1016/j.metabol.2014.10.029.

McFadden, S. H. (2005). Points of connection: Gerontology and the psychology of religion. In R. F. Paloutzian & C. L. Park (Eds.), *Handbook of the psychology of religion and spirituality* (pp. 162–176). New York: Guilford.

Meyer, I. H., & Schwartz, S. (2000). Social issues as public health: Promise and peril. *American Journal of Public Health, 90*(8), 1189–1191. https://doi.org/10.2105/AJPH.90.8.1189.

Miller, W. R., & Thoresen, C. E. (2003). Spirituality, religion, and health: An emerging research field. *American Psychologist, 58*(1), 24–35. https://doi.org/10.1037/0003-066X.58.1.24.

Monod, S., Brennan, M., Rochat, E., Martin, E., Rochat, S., & Bula, C. J. (2011). Instruments measuring spirituality in clinical research: A systematic review. *Journal of General Internal Medicine, 26*(11), 1345–1357. https://doi.org/10.1007/s11606-011-1769-7.

Newport, F. (2012). *God is alive and well: The future of religion in America*. New York: Gallup Press.

Newport, F. (2016, December 23). Five key findings on religion in the US. http://www.gallup.com/poll/200186/five-key-findings-religion.aspx. Accessed 17 Feb 2017.

Oman, D. (2013). Defining religion and spirituality. In R. F. Paloutzian & C. L. Park (Eds.), *Handbook of the psychology of religion and spirituality* (2nd ed., pp. 23–47). New York: Guilford.

Oman, D., & Paranjpe, A. C. (2017). Indian spirituality: How relevant is Pargament's framework? *Psychological Studies* (online before print). https://doi.org/10.1007/s12646-017-0412-z.

Pargament, K. I., & Mahoney, A. (2005). Sacred matters: Sanctification as a vital topic for the psychology of religion. *The International Journal for the Psychology of Religion, 15*(3), 179–198. https://doi.org/10.1207/s15327582ijpr1503_1.

Pargament, K. I., Poloma, M. M., & Tarakeshwar, N. (2001). Methods of coping from the religions of the world: The bar mitzvah, karma, and spiritual healing. In C. R. Snyder (Ed.), *Coping with stress: Effective people and processes* (pp. 259–284). New York: Oxford University Press.

Pew Research Center. (2012). *The global religious landscape*. Washington, DC: Pew Research Center.

Pew Research Center. (2015). *America's changing religious landscape*. Washington, DC: Pew Research Center.

Post, S. G., Puchalski, C. M., & Larson, D. B. (2000). Physicians and patient spirituality: Professional boundaries, competency, and ethics. *Annals of Internal Medicine, 132*(7), 578–583. https://doi.org/10.7326/0003-4819-132-7-200004040-00010.

Saler, B. (2000). *Conceptualizing religion: Immanent anthropologists, transcendent natives, and unbounded categories*. New York/Oxford: Berghahn.

Saler, B. (2008). Conceptualizing religion: Some recent reflections. *Religion, 38*(3), 219–225. https://doi.org/10.1016/j.religion.2008.03.008.

Schutte, N. S., & Malouff, J. M. (2014). A meta-analytic review of the effects of mindfulness meditation on telomerase activity. *Psychoneuroendocrinology, 42*, 45–48. https://doi.org/10.1016/j.psyneuen.2013.12.017.

Seeman, T. E., Dubin, L. F., & Seeman, M. (2003). Religiosity/spirituality and health: A critical review of the evidence for biological pathways. *American Psychologist, 58*(1), 53–63. https://doi.org/10.1037/0003-066X.58.1.53.

Selman, L., Harding, R., Gysels, M., Speck, P., & Higginson, I. J. (2011a). The measurement of spirituality in palliative care and the content of tools validated cross-culturally: A systematic review. *Journal of Pain and Symptom Management, 41*(4), 728–753. https://doi.org/10.1016/j.jpainsymman.2010.06.023.

Selman, L., Siegert, R., Harding, R., Gysels, M., Speck, P., & Higginson, I. J. (2011b). A psychometric evaluation of measures of spirituality validated in culturally diverse palliative care populations. *Journal of Pain and Symptom Management, 42*(4), 604–622. https://doi.org/10.1016/j.jpainsymman.2011.01.015.

Selye, H. (1955). Stress and disease. *Science, 122*(3171), 625–631.

Smith, H. (1991). *The world's religions: Our great wisdom traditions*. San Francisco: Harper San Francisco.

Smith, T. B., McCullough, M. E., & Poll, J. (2003). Religiousness and depression: Evidence for a main effect and the moderating influence of stressful life events. *Psychological Bulletin, 129*(4), 614–636. https://doi.org/10.1037/0033-2909.129.4.614.

Thoresen, C. E., Oman, D., & Harris, A. H. S. (2005). The effects of religious practices: A focus on health. In W. R. Miller & H. D. Delaney (Eds.), *Judeo-Christian perspectives on psychology: Human nature, motivation, and change* (pp. 205–226). Washington, DC: American Psychological Association. https://doi.org/10.1037/10859-011.

Tobin, E. T., & Slatcher, R. B. (2016). Religious participation predicts diurnal cortisol profiles 10 years later via lower levels of religious struggle. *Health Psychology, 35*(12), 1356–1363. https://doi.org/10.1037/hea0000372.

Todd, N. R., Houston, J. D., & Odahl-Ruan, C. A. (2014). Preliminary validation of the sanctification of social justice scale. *Psychology of Religion and Spirituality, 6*(3), 245–256. https://doi.org/10.1037/a0036348.

Warnock, C. J. P. (2009). Who pays for providing spiritual care in healthcare settings? The ethical dilemma of taxpayers funding holistic healthcare and the first amendment requirement for separation of church and state. *Journal of Religion and Health, 48*(4), 468–481. https://doi.org/10.1007/s10943-008-9208-8.

Worthington, E. L., Kurusu, T. A., McCullough, M. E., & Sandage, S. J. (1996). Empirical research on religion and psychotherapeutic processes and outcomes: A 10-year review and research prospectus. *Psychological Bulletin, 119*(3), 448–487. https://doi.org/10.1037/0033-2909.119.3.448.

Worthington, E. L., Hook, J. N., Davis, D. E., & McDaniel, M. A. (2011). Religion and spirituality. *Journal of Clinical Psychology, 67*(2), 204–214. https://doi.org/10.1002/jclp.20760.

Wuthnow, R. (1998). *After heaven: Spirituality in America since the 1950s*. Berkeley: University of California Press.

Wuthnow, R. (2005). *America and the challenges of religious diversity*. Princeton: Princeton University Press.

Part II
Implications for Public Health Practice

Implications for Community Health Practitioners: Framing Religion and Spirituality Within a Social Ecological Framework

Rabbi Nancy E. Epstein

Abstract Community health educators who build connections and partnerships with religious leaders and communities can leverage influential resources and effective supports to improve public health. As with most community health work, this approach requires a genuine, strong, and ongoing commitment to relationships and trust-building, as well as an understanding of the distinctive features and dynamics of religions and their core spiritual dimensions, and an awareness of the growing diversity and religious pluralism in the United States (as in many other countries). Drawing on a social-ecological framework, this chapter provides an overview of key opportunities, illustrative examples, core challenges and practice-focused guidance at the individual, relationship/group, community and societal/policy levels to help the health educator work effectively with religious communities and religious leaders – all derived from the author's experience as an academic, rabbi and community health educator who has practiced in the field for nearly 40 years.

Keywords Community health · Social-ecological model · Religious communities · Religious leaders · Religious diversity · Building partnerships · Health promotion

1 Introduction

Public health educators are among the best prepared public health professionals to address the wide variety of community health issues that arise in U.S. communities. Trained to work cooperatively within the community contexts in which people live, community health educators constitute one of the largest professional sections in the American Public Health Association. Yet many have not yet fully deployed an

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important resource in their toolkit: building on the important health implications of religious and spiritual factors, and accessing the rich array of U.S.-based models and resources for partnering successfully with religious communities and their leaders.

Religion and spirituality are expressed in every dimension of American life and are recognized as one of our largest sources of social capital (Putnam 2000). By addressing issues of "ultimate concern" that typically tap into people's deepest motivations (Tillich and Kimball 1964), religion and spirituality have been shown to positively influence some health behaviors (see chapter, "Model of Individual Health Effects from Religion/Spirituality: Supporting Evidence," this volume).

How integral is religion to the rhythm of American life? In 2010, a Gallup Poll reported that 43% of U.S. adults attended church, synagogue, or a mosque once a week or almost every week (Newport 2010) and more than half of Americans believe that the presence of churches is very positive for their communities (Barna Group 2011). A follow up Gallup Poll (Newport 2012) found that 7 in 10 Americans are very or moderately religious.

Estimates place the number of American religious congregations above 300,000 (McKeever 2015; Ammerman 2001a). They tend to be among the groups and organizations that are most accessible and closest to community members. Ammerman writes: "Congregations are more pervasive than schools or libraries, more numerous than voting precincts and claim more members than any other single voluntary organization" (Ammerman 2001b, p. 6). Similar to other community-based organizations, congregations and religious communities are known to provide an array of public health-related services such as food, clothing, education, day care, after-school activities, literacy, health care, cultural activities, and other forms of outreach (Ammerman 2001b).

Religion can be a powerful force in an urban setting. Ram Cnaan and his colleagues, in the first-ever congregational census of a large American city, documented the presence of over 2000 congregations in Philadelphia (many located in neighborhoods rife with poor social determinants of health) representing 181 different religious traditions and denominations, and found that 80% of the city's residents were connected with a place of worship. Cnaan shared with this author that in West Philadelphia his team documented 433 congregations, at a density of 33.3 congregations per square mile. His research team interviewed religious leaders from 1392 of these congregations and developed a vivid portrait of how religious communities offer safety nets of formal and informal assistance for people under stress, many of whom struggle to meet their basic needs (Cnaan 2006).

While Christian churches are the numerically predominant religious group in American life, great religious diversity exists. No single faith dominates the U.S. religious landscape. The 2010 U.S. Religion Census (Grammich et al. 2012), conducted privately by the Association of Statisticians of American Religious Bodies, identified 236 different religious traditions present in the United States. Harvard's Pluralism Project confirms the presence of significant and growing religious diversity in the United States, particularly among sub-populations that identify as Muslim, Hindu, Sikh, Buddhist and other world religions observed by immigrants who arrived in the United States from the Middle East, Africa, Asia, and Latin

America during the last 50 years (Pluralism Project n.d.). Sizeable numbers of Americans have also converted from Judeo-Christian religious traditions to some non-Judeo-Christian traditions (e.g., Buddhism – see Smith and Novak 2003).

Diverse religious communities and leaders provide important community assets and offer meaningful points of access to sub-populations, such as immigrants, that often experience health disparities. These disparities may be due to barriers, such as language differences, poverty, insurance status, fear of deportation, and lack of culturally and religiously competent standards of care. At the population-level, many immigrant sub-populations are known to avoid health care and other service delivery systems (even when they are in this country legally and may be eligible for services) yet regularly attend worship services in religious communities where their immigrant group gathers.

Clearly, religion and spirituality are key factors for health educators to consider as they plan and initiate community-based public health education programs and community-engaged research. This chapter provides an overview of strategic ideas and challenges plus practice-focused guidance to help the community health practitioner work effectively with religious communities and religious leaders – all derived from the author's experience as an academic, rabbi and community health educator who has practiced in the field for nearly 40 years. Using a social-ecological lens as an organizing framework, the author describes the practical relevance of religious and spiritual factors at the individual, relationship (group), community, and societal (policy) levels.

For consistency with language used throughout this volume, this chapter refers primarily to "religious communities" and "religious leaders" and treats these terms as synonymous with expressions such as "faith-based communities," "congregations," "houses of worship," "faith leaders," and "clergy," which are commonly used in the wider literature and in program descriptions.

2   The Nature of Community Health Education

Effective community health education spurs change through community engagement, community capacity-building, and community-based problem solving – all of which are built on the foundation of positive relationships. This author's understanding of community health education is informed by the mid-twentieth century contributions of Guy Steuart, former Chair of the Department of Health Education at the University of North Carolina at Chapel Hill where she completed her Master of Public Health (MPH) degree. He affirmed the importance of health educators' work with communities and documented their effectiveness as agents of change and partners in shifting social determinants of health. Steuart was a pioneer in what later became known as community-based participatory research (CBPR). His work also provided a foundation for the emergence of social-ecological models in public health. Steuart emphasized that the community health educator must understand communities as ecological systems, learning to identify and build vital, meaningful partnerships with their formal and informal community leaders (Steckler et al. 1993).

Steuart offered the pivotal insight that *all* behavior is health-related – and so a wholistic view of an individual's life and their community's experiences should be taken into account when planning and implementing health education programs. He insisted that only some human behavior is health-specific (e.g., taking preventive measures and getting flu shots) and noted that people in communities are often not motivated by their health and are not responsive to the priorities that health professionals set <u>for</u> them. People are much more influenced by their immediate lives, household and community economics, religious and cultural environments, and interpersonal interactions with peers, family and close friends. He emphasized that the community health educator must learn to listen deeply for community members' pre-existing interests, priorities, and motivations (rather than assume they are unmotivated) to find ways to meaningfully harness or align their "emic" (internal and/or cultural perspective) with the goals and programmatic interests of the agencies, organizations, and health care systems for whom the educator works (Steckler et al. 1993).

Steuart stressed the critical importance of taking a strengths-based approach to community health education that emphasized identifying community assets and resources as well as community needs and problems. He emphasized that there was no such thing as a "one size fits all" approach when building relationships and developing a program. The health educator must respect each community's integrity and unique features, and design programs and develop partnerships with these in mind. This approach was affirmed in an Institute of Medicine (IOM) 2012 report, "An Integrated Framework for Assessing the Value of Community-based Prevention." It stated that the value of an intervention must be in accordance with a community's beliefs and priorities, and that decisions must be aligned in transparent ways to gain legitimacy and promote sustainability (Institute of Medicine 2012).

Community health educators typically gain efficacy by developing partnerships with religious communities, with their formal leaders (clergy) and with informal leaders who are "close to the ground" of religious community life. Clergy and lay leaders can be key influences among members who are most motivated to help one another address issues of ultimate concern in their lives, and are uniquely positioned to help community health educators align health education goals with their community's unique pre-existing goals and priorities.

How then does a community health educator find alignment between public health objectives and the interests and motivations of religious communities and religious leaders? Values and commitments are a starting place. Public health and religious communities share a number of important prevailing values and commitments, particularly with regard to promoting peace, health and well-being, social justice, and addressing social determinants of health. Chief among these are:

- Promoting individual lifestyles and practices (see chapter, "Model of Individual Health Effects from Religion/Spirituality: Supporting Evidence," this volume) that support a healthy body, mind, heart, and spirit
- Providing a safety net of services for vulnerable populations, especially children, elders, and people who are ill

- Advocating for social justice, particularly on behalf of people who experience oppression, discrimination, racism, and poverty
- Welcoming the stranger and preserving dignity and respect for people of all races, religions, and ethnicities

3 Looking at Religion and Spirituality Through a Social-Ecological Lens

The principles asserted by Steuart and the values shared by public health and religious communities are well-viewed by public health educators through a social-ecological lens, commonly used as an organizing and planning framework in the health education field (McLeroy et al. 1988). The social-ecological framework takes into account dynamic interrelations among individual, social and environmental factors, and provides useful context for examining the role and impact of the community health educator's work with religious communities and religious leaders at multiple levels: the individual level, the relationship or group level, the community level, and the societal or policy level. An important overview and analysis by Campbell et al. (2007) of church-based health education interventions in the *Annual Review of Public Health* validates the usefulness of the social-ecological perspective:

> Church-based health promotion (CBHP) interventions can reach broad populations and have great potential for reducing health disparities. From a social-ecological perspective, churches and other religious organizations can influence members' behaviors at multiple levels of change. Formative research is essential to determine appropriate strategies and messages for diverse groups and denominations. A collaborative partnership approach utilizing principles of community-based participatory research, and involving churches in program design and delivery, is essential for recruitment, participation, and sustainability. (Campbell et al. 2007, p. 213)

Let us now consider the relevance of religious and spiritual factors to each of the four levels identified through this social-ecological framework.

3.1 Level One: The Individual Level

Community health education at the individual-level typically focuses on disseminating information and educational messages. The primary goal is to positively influence an individual's knowledge, attitudes, beliefs and health behaviors. Individual-level messaging often occurs via patient-centered and provider-centered education at community health care settings. At this level, the community health educator is advised to address what Campbell and colleagues (Campbell et al. 2007) refer to as surface structures – health education messages and materials that are aligned with cultural and religious contexts. To do this effectively, the community

health educator should research the religious traditions of various patient sub-populations and use this information to craft information, messages, and education materials that are consistent with patients' religious values, beliefs, and practices.

It is important to emphasize that prevailing health education messages and information sometimes unintentionally conflict with an individual's religious beliefs or practices, especially given the growing religious diversity in this country. Examples of inadvertent conflicts: not being aware of the impact of religious fasting on an individual's adherence to prescription drug regimens; or promoting blood transfusions to someone whose religious beliefs do not allow this.

Illustrative Example Philadelphia's urban health clinics serve a substantial population of African-American Muslim women. African-Americans constitute 35% of American Muslims and are its single largest subgroup (Gallup 2009). Clinic staff members are often unfamiliar with the unique health issues faced by African-American Muslim women and the impact of cultural, spiritual, and religious practices and barriers to seeking care. This lack of information about the unique experiences of African-American Muslim women combined with a general "homogenization" of information about all Muslims can affect their care-seeking and health behaviors. In addition, African-American Muslim women may experience racial discrimination as well as religious stereotyping in some health care contexts. (Mu'Min 2013).

To better serve African-American Muslim women, this author invited an African-American Muslim woman colleague, who is a behavioral health therapist and a health educator, to write a health guide for nurses, social workers, physicians, and other health professionals. This guide focuses on Muslim sources of cultural and spiritual resilience and how these can be holistically integrated into a patient's plan of care. Chapters address sexual and reproductive health, diet, nutrition, marital and family stress, mental health concerns, and intimate partner violence, all viewed through a religious lens. The guide also includes a list of frequently asked questions, a glossary of common Islamic terms and phrases, and a list of local and national Muslim resources (Mu'Min 2013).

Guidance Here are some recommendations for the community health educator working with religious and spiritual factors at Level One – The Individual Level:

- Focus on strengths! Don't forget that religion can be a source of cultural strength and spiritual resilience for patients and their families as they deal with illness, trauma, and health care system challenges. Acknowledge and consider this in your informational and educational materials for both patients and providers.
- Do your homework! Be sure to address religious and spiritual competency (think of this as a subset of cultural competency) when developing specific health messages, health information, and patient education and provider education materials. This requires knowing your sub-populations, becoming familiar and literate with each group's religious beliefs, norms, practices and symbols, and designing culturally and religiously consistent informational materials with these in mind.

- Remember that religious diversity is often a factor in immigrant communities, so language can be a barrier. Be sure to pilot test *all* health education materials in all languages (in English and in translated text) to make sure these accurately convey the health promoting messages you intend.
- Recognize there are great variations within individual religious traditions and in levels of observance within a religious tradition. All people who identify with a specific religion are not alike. African-African Muslims, for instance, may have different norms and lifestyle practices from Muslims born and raised in the Middle East. Catholics who are Hispanic may have different practices from Catholics who are Italian or Irish. Likewise, norms within the Ultra-Orthodox Jewish community are different from norms in Reform and Conservative Jewish communities. Don't make assumptions. Check with individual clients/patient sub-groups about their beliefs and practices even after you have done your initial homework to learn generally about their religions.

3.2   Level Two: The Relationship or Group Level

Community health education programs at the relationship or group level emphasize the importance of trust and community engagement through relationships and interpersonal influence. Examples of health promoting activities at this group level include mentoring, advising, offering social support, building social capital, and working within formal and informal social networks. In particular, formal religious leaders and informal lay leaders are often pillars in their religious communities who have earned considerable trust and are exemplars of social capital (see chapter, "Social and Community-Level Factors in Health Effects from Religion/Spirituality," this volume). They can model health behaviors and influence the adoption of healthy behaviors by others. In their natural helping roles, lay leaders can also serve as peer health advisers who effectively help link people with needed community services and supports (Service and Salber 1977; Hatch and Jackson 1981). Because others often go to them for help to solve problems of all kinds, formal religious leaders and informal lay leaders are important partners with whom a community health educator can work.

Among predominantly black congregations, church is often a core community institution that positively influences the lives and lifestyles of members, reinforces healthy community values, provides social support, offers a meaningful setting for the delivery of public health programs, and serves as an agent of community change (Eng et al. 1985; Chatters 2000). Churches serving these communities are often an ideal venue where addressing religious and spiritual factors at the relationship or group level has great potential to lead to positive healthy change (Hatcher et al. 2009).

Illustrative Example   John Hatch, a professor at the University of North Carolina-Chapel Hill, founded a health education project in black Baptist churches across

North Carolina that built on the natural roles of informal lay leaders to serve as health-related resources in their religious communities. Pastors worked collaboratively with the project to identify natural helpers – people in religious communities to whom others already turned for advice and help – and trained them to serve as lay health advisers. These natural helpers received information and training about chronic diseases, e.g., hypertension and diabetes, most prevalent in their communities. They were also trained to offer well-informed health-related advice and informal referrals to help fellow congregants connect with local professionals, service providers, and other community resources. They brought attention to health issues within their congregations at worship services, church meetings, and organized health fairs. The project's health education impact was strengthened and reinforced through lay health advisers' personal relationships with fellow congregants, their shared religious context and values, and the positive influence of social support. This classic project was widely recognized as a model that provided an outstanding conceptual and practice-based grounding for the subsequent development of now-popular community health worker and patient navigator roles. This project provides a relevant model for the health educator who desires to work at the group level with religious communities (Hatch and Jackson 1981; Hatch and Lovelace 1980).

Guidance Here are some suggested tips for the community health educator working with religious communities and religious leaders at Level II – The Relationship or Group Level:

- It's all about relationships! Become a partner and agent of positive change. Remember that your role is not to preach or fix or teach people but rather to facilitate engagement, self-efficacy, and empowerment. Communicate respect for everyone, act with integrity, build a track record of credibility, and generously share valuable health information and resources.
- Build relationships and foster partnerships with both formal religious leaders (clergy) and informal, lay leaders. Formal religious leaders play pivotal roles and are pillars of their communities; and informal lay leaders hold substantial influence with fellow community members. Remember that building relationships of trust takes time. Don't rush it!
- How do you identify informal, lay leaders? Ask the formal religious leader as well as community members: "Who gets things done in this community? Who do people go to for advice or support?" Notice whose names are mentioned over and over again. Have follow up conversations to assess the match between referrals made by congregants and clergy: confirm whether the individuals recommended are consistently viewed as positive influences in their communities.
- Religious communities and religious leaders may be initially skeptical of establishing a relationship with you. Don't take this personally! Their attitudes may reflect previous experience with government, universities, health care institutions or public health agencies that historically offered them little mutual benefit or respect, had different values and talked a different language (see "Core Challenges for the Community Health Educator" section below). Begin by sim-

ply initiating connections – not by making requests on behalf of your agency or program or by offering suggestions (or demands) for change. Attend worship services, get to know people in the community, and invite a religious leader for coffee/tea to explore areas of mutual interest. An introduction to a religious leader from a known community or civic leader may help you open the door and begin to establish these crucial relationships. Show genuine interest and commitment. Remember that trust takes time and is built on experience not promises.

3.3   Level Three: The Community Level

Health education at the community level leverages the deep and often powerful influences of religion and spirituality in religious communities. Health educators benefit from understanding religious communities and religious leaders as community health assets (Gunderson and Cochrane 2012) and as mediating structures that focus on values and community norms and provide social resources (McLeroy et al. 1988).

Interventions at this level typically engage what Campbell and colleagues refer to as deep structures (Campbell et al. 2007), referring to programs and partnerships that require greater commitment, more resources, and that also have a greater likelihood to endure than those based solely on surface structures. Community-level interventions are more likely to address social determinants of health such as economic disparities, discrimination, and more deeply held beliefs and underlying cultural assumptions (Campbell et al. 2007).

Community level health education programs with religious communities are often structured in faith-placed, faith-based or collaborative formats (DeHaven et al. 2004). Building on DeHaven et al.'s original categorization, this author offers this additional context:

- Faith-placed programs are generally developed by outside health professionals and offered in religious community settings. They reflect the priorities of the outside agency, e.g. a health department, and are planned and conducted by its staff. The religious community might help market the program to its members or people who live nearby.
- Faith-based programs are often developed by outside health professionals and planned in response to the interests expressed within a religious community. Such programs take into account members' perceived needs and interests.
- Collaborative programs typically integrate faith-placed and faith-based approaches. These programs are characterized by longer-term relationships and partnerships developed jointly by community health educators (and their agency) and religious community leaders.

Faith-based collaborations can occur in several types of settings: within a single religious community; within a network of religious communities in the same religious denomination; or through a multi-faith network that brings together religious

leaders and communities across a diverse religious spectrum to work together on shared health and health education priorities.

Collaborative community health education programming with religious communities is best initiated from the ground-up in cooperation with formal religious leaders who are generally held in high esteem by their faith communities and by the community-at-large. As key influencers, these leaders can effectively raise awareness of crucial health issues, model health behaviors, and promote health behavior change (Levin 1986). When a community health educator aspires to work cooperatively with a religious community, the support and blessing from that religious leader (or the senior religious leadership team) is very important. Their participation in program design and evaluation is also critically important. Highly motivated religious lay leaders can also help plan programs and positively talk them up to community members to promote their participation (Ammerman 2002).

Illustrative Example The power of the faith-based collaborative community health education model can be seen in a wide-ranging initiative by the Philadelphia Department of Behavioral Health and Intellectual disAbility Services (DBHIDS) to build ongoing partnerships with diverse religious communities and religious leaders that promote behavioral health, reduce stigma and provide a strengths-based recovery approach to substance use and addictions. DBHIDS takes a population-based, public health approach to behavioral health and substance use/abuse throughout Philadelphia, one of the largest and poorest cities in the U.S.

Arthur C. Evans, the commissioner of this department realized that strong partnerships and collaborations with a wide range of religious communities and religious leaders were necessary to reach the largest number of city residents, promote large-scale behavioral health education, reduce the stigma and shame associated with mental illness and addiction, deliver the kinds of services that people would be truly willing to accept, and provide post-treatment community resources and supports for clients.

As vice-chair of the department's Faith and Spiritual Affairs (FSA) Advisory Board from 2010 to 2014, this author helped DBHIDS develop collaborative behavioral health education programs in partnership with religious communities throughout Philadelphia. The FSA board, comprised of leaders from many of the city's diverse religious communities, partners with the commissioner and agency staff to develop training and behavioral health education programs for religious leaders and religious communities. Together, they collaboratively plan DBHIDS's annual Faith and Spiritual Affairs conference. Offered since 2006, this conference strengthens, inspires, and mobilizes an expanding network of participating religious communities focused on behavioral health and substance abuse education, services and supports and is generally attended by more than 500 practitioners, clergy and community members. (Cnaan and Seongho 2016).

Guidance Here are some recommendations for health educators who are working with religious and spirituality factors, religious communities, and religious leaders at Level Three – The Community Level:

- Religious communities are excellent settings for faith-placed and faith-based health education programs, but are best cultivated as collaborators and genuine program partners. When exploring partnerships, work to develop collaborative relationships that can be sustained over time and to create programs that address the mutual, shared interests of religious communities and public health entities. Consider going beyond health-specific programs to address broader social determinants of health, disparities, inequalities, stigma and aspects of discrimination that affect health.
- Community-based health education programs will be most successful if they build on existing strengths, assets, and expertise within religious communities (e.g., existing health ministries, prayer groups, the pivotal, esteemed role held by the religious leader, religious and spiritual beliefs). Such programs are most effective when they strengthen a religious community's ability to deploy its own community-based problem-solving.
- Respect the growing diversity of religious communities and leaders and recognize that no "one size fits all" approach to community health education is realistic or possible.
- Remember that collaborative partnerships must balance the needs and interests of all parties. Be honest and clear about each partner's abilities, resources, strengths, and requirements. Be sure to clearly outline each partner's roles and responsibilities.

3.4 Level Four: The Societal or Policy Level

Health education initiatives at the societal or policy level are crucial to changing underlying influences on health in neighborhoods and communities – especially in communities with health disparities. Residents often lack sufficient resources to individually improve neighborhood-level conditions that influence health such as physical infrastructure (homes and workplaces), local economy (jobs offering a living wage), and the environment (clean water and air) (see also chapters, "Social and Community-Level Factors in Health Effects from Religion/Spirituality," and, "Environmental Health Sciences, Religion, and Spirituality," this volume). Local organizing is often the key to spur strategic news coverage and to build consumer activism and public support for desired policy changes at the local, state, or national levels that can address root causes of poor health.

Religious communities have a long history of engagement and intervention at the societal/policy level where legislative, policy and resource allocations are made. Successful organizing at this level tends to be the most direct and effective way to address issues of social justice and healthy equality and overcome obstacles to health linked to access barriers and insufficient funding for necessary services and supports. Achieving progress at a systemic level requires partnerships and coordination among networks of religious organizations and religious leaders at the local,

state, and national levels who are advocating for policy and social change. These networks typically design effective messaging for media campaigns that educate the public and galvanize widespread support to influence the policy and funding decisions of elected leaders.

Illustrative Examples The PICO National Network, the Industrial Areas Foundation, and Gamaliel are three different multi-faith national organizing networks with many local and state affiliates that focus on policies that can transform society – starting at the neighborhood-level. These non-partisan faith-based organizing networks address root causes of public health problems by providing strong leadership and advocacy training at the grassroots level and building coalitions. Grounded in the strong foundation of one-to-one relationships, they understand the dynamics of power, the importance of social media, and advocate for a broad array of community-based and health-related issues, including but not limited to jobs, neighborhood safety, criminal justice, economic development, fair housing, public education, youth development, access to health care, aging, civil rights, voter engagement, and finance reform. Their networks are widespread across the United States. The PICO National Network, for example, is comprised of more than 1000 congregations representing more than 50 different religious denominations and faith traditions and more than a million people in 150+ American cities and 17 states (PICO National Network n.d.).

Guidance Here are some recommended strategies for health educators who work with religious communities and religious communities at Level Four – The Societal or Policy Level:

- Don't shy away from working at this level. Too often community health educators say "Oh not me! I don't do politics!" (Or if they studied health behavior and health education, they say "If I wanted to do policy, I would have done my public health degree in a department of health management and policy!") Working at the policy level is not equivalent to working in politics. It is a pivotal way to address social justice and inequality issues, support prevention and health promotion programs, and advocate for community resource allocations at the local, state, and national levels.
- Power is in numbers! Look for a local chapter of one of these local, state or national multi-faith advocacy networks in your area and contact a lead organizer. Explore how the coalition's interests align with your public health concerns, particularly those related to social justice, vulnerable populations and determinants of health.
- Remember that widespread and continual media coverage is important to educate the public, influence policymakers, and keep attention focused on vitally important health-related issues.
- Join the American Public Health Association's Caucus on Public Health and the Faith Community so you can participate in societal-level and policy-oriented public health activities with other public health colleagues.

4 Core Challenges for the Community Health Educator

Health educators may encounter unanticipated challenges working with religious communities and religious leaders. Despite her prior decades of experience as a health educator, this author encountered several such surprises when she first began working with religious communities and religious leaders. This section offers seven additional pieces of friendly advice to help health educators work as efficiently and effectively as possible.

1. Deep Contrasts Exist in Values and Language Used by Public Health Agencies and Religious Communities

The work of building bridges and developing partnerships of trust and mutuality between public health organizations and religious communities and their leaders requires an important alignment of values and language. However, there may be sharp and distinct contrasts between the values and language used in the religious world versus those used in the public health domain.

Religious communities have a culture of helping the needy that is unparalleled in American life. Their values and language are often characterized by a focus on "God," "spirit," "people's lived experience," "trust," "compassion," "justice," "helping one's brother out," and being motivated by "doing the right thing." On the other hand, public health agencies, government and institutions such as hospitals, health departments, and universities tend to use language characterized by a focus on "goals and objectives," "evaluation," "grants and contracts-monitoring," "budgets," and "audits." These sharp contrasts can result in conflicts about fundamental values and commitments that must be bridged by community health educators, particularly if they work for government or large institutions.

2. There is a Generalized Lack of Religious Competency When Planning Public Health Education Programs

The community health educator must research and do thoughtful homework to genuinely understand the fundamental beliefs of any religious community with which they seek to work at the program-level and to pay attention to the nuances and differences outlined previously in this chapter under Level One: The Individual Level. One wouldn't, for instance, ask a Seventh Day Adventist Church, whose dietary laws focus on vegetarianism and whose members do not eat meat, to host an emergency-feeding program in a disaster-stricken neighborhood where emergency food packets of dehydrated meat would be distributed.

3. There Is No Single Doorway to Working with the "Faith-based Community"

Community health professionals often assume there is one doorway or portal for working with the vast array of religious communities that comprise the so-called "faith-based community." But, there is not. There is widespread variation in the ways that different religious traditions are structured, governed and organized. Some religious traditions have strong, central leadership (e.g. Catholics); others do

not (e.g. Jews). Some have large memberships; others are small in number. Some own buildings and have long-established houses of worship; others rent temporary space in storefronts. Some have paid clergy that graduated from seminary; others have volunteer clergy with no formal training (see below). Some have large budgets; others have very limited funds available. Some charge membership dues; others rely solely on tithing and charitable contributions from members.

In addition, there exist many unaffiliated congregations (e.g. evangelical Christian mega-churches) that are generally not part of any larger religious governance structure. The number of mega-churches – congregations with weekly attendance of more than 2000 people – has grown considerably in the last 20 years and now numbers more than 1650 in the United States. (Hartford Institute for Religion Research n.d.).

4. There Exist Wide-Ranging Differences among Religious Leaders

All religious leaders are not alike. The religious roles, congregational jobs, training and educational backgrounds of religious leaders (clergy, pastors, rabbis, priests, and many other types of religious leaders) vary tremendously. Many religious leaders have attended and graduated from degree programs and/or seminary. Other religious leaders have no formal religious educational background, degree, or seminary preparation. Some religious leaders work full-time for their religious community and are paid for their services. Others earn their living working in other occupations and serve their religious communities as part-time volunteer pastors. Some are members of clergy professional associations with formal policies and oversight on issues like ethics; others do not participate in formal professional associations. Some serve large religious communities and congregations that have their own buildings and considerable financial and other resources; others serve storefront congregations with extremely limited financial and other resources.

5. There is Growing Religious Diversity and Pluralism in the United States

The Pew Center's 2014 Religious Landscape Survey confirmed that the U.S. has become a minority Protestant country. The fraction of Americans who reported being members of Protestant denominations has dropped from 51% in 2007 to 46% in 2015. Pew also confirmed a diverse and fluid religious U.S. landscape linked to immigration with 87% of Hindus, 61% of Muslims, and 40% of Orthodox Christians identifying as first-generation American immigrants (Pew Research Center 2015). A description of this vastly changing religious landscape across the U.S. is provided in the Harvard University's Pluralism Project's mission statement:

> "There are Islamic centers and mosques, Hindu and Buddhist temples and meditation centers in virtually every major American city. The encounter between people of very different religious traditions takes place in the proximity of our own cities and neighborhoods" (Pluralism Project n.d.).

Religious issues can be of paramount importance among immigrant populations – especially among less familiar non-majority religions, such as Islam,

Santaria, Hinduism, Buddhism, Sikhism, Jainism, and the many other world religions prevalent in the countries from which so many first-generation immigrant populations originate. Careful attention to forming relationships and partnerships with these diverse religious communities and their leaders can make a significant difference in accessing and educating these harder-to-reach populations, many of whom experience health disparities.

Additionally, religious communities often provide immigrants with a sense of safety and solace as well as sanctuary and support. These communities are where community health educators are likely to find sub-populations in need of health services who tend not to show up in service delivery systems.

6. It Can Become a Problem to Go Over and Over Again to the Same Religious Community

An unintentional problem may occur when a community health educator establishes a well-functioning partnership with one large religious community, often a mega-church, and partners repeatedly and sometimes exclusively with that church to develop and continually offer health education programs. It is also not unusual for such a well-organized religious community to become a popular go-to partner for health educators from many different agencies. While health education programming may be excellent at this religious community, other religious communities, sometimes even nearby, may have few, limited or no health education offerings. Diligent efforts, sustained over time, to build relationships and partnerships with a broad array of diverse, religious communities and their leaders can lead to more extensive community outreach and public health impact, particularly in communities that are diverse and which experience health disparities.

7. There is a Lack of U.S. Census Data about Religion

Despite the importance of religion, religious communities, and religious leaders to public health, a notable challenge exists regarding data: religion is excluded from demographic data collected by the U.S. Census, public health's main tool for understanding demographics and the "public" in public health. There are no official government statistics about the religious composition of the U.S. population. Several non-governmental entities have stepped up to address this gap and conducted extensive surveys, but none are on the scale of the U.S. Census. Chief among these is the Pew Research Center, which conducted a religious landscape survey by telephone with more than 35,000 adults in all 50 states in 2007 and again in 2014. The surveys provided volumes of comparative data and considerable details about Americans' religious identification and religious/spiritual lives. The 2014 survey found that intermarriage, switching religious affiliation, and religious diversity are on the rise, and there is a growing sub-population of people who are not religiously affiliated (called the "nones") yet who report that religion remains important to them (Pew Research Center 2015).

5   Final Recommendations for the Community Health Educator

- Know thyself! Each individual has the capacity to be a religious and spiritual person, including you. Cultivate self-reflection and be aware of your own religious and spiritual beliefs and biases. Commit to being open to others, particularly those who are different than you. If you don't have a faith tradition or a belief in a higher power, don't make assumptions about the intellect or sophistication of those who do. Practice cultural, religious, and spiritual humility.
- Don't romanticize or oversimplify this work with religious communities and religious leaders. It is complex, nuanced, and requires staying power and genuine commitment.
- Build relationships of integrity, mutual trust, respect, consistency, and sustainability for the long haul. Engage in open, honest, and transparent communications.
- Recognize that "once you've seen one, you've seen one" – meaning that religious communities can vary significantly, sometimes even within the same denomination.
- Do your homework. Learn about various and diverse religions – their beliefs and tenets, values, priorities, health-related practices, the ways in which their communities are structured, and ways in which religious leaders are ordained/selected. Build on existing religious commitments to healthy behaviors, such as exercise, healthy eating, and smoking cessation. Accept that there may be many public health issues on which you can work together, but there may also exist "hot button issues" (e.g., gender, sexuality, mental health) where collaboration is not possible.

6   Conclusion

This chapter has drawn from the author's extensive professional experience to provide useful insights and strategies to help health educators work effectively with religious communities and religious leaders to promote health. This practical approach incorporates a social-ecological framework focusing on four levels of intervention (individual, relationship/group, community and societal/policy) with conceptual overviews, illustrative examples and professional guidance at each level. It also outlines core challenges and specific recommendations to the community health educator. This author sincerely hopes she has inspired and prepared her reader to form strong partnerships with religious leaders and their communities that improve health, well-being and justice in all communities, particularly those that are vulnerable and underserved.

References

Ammerman, N. (2001a). *Doing good in American communities: Congregations and service organizations working together*. Resource Document. Hartford Institute for Religion Research. http://hirr.hartsem.edu/orw/orw_cong-report.html. Accessed 23 January 2017.

Ammerman, N. (2001b). Still gathering after all these years: Congregations in U.S. cities. In A. Walsh (Ed.), *Can charitable choice work?* (pp. 6–22). Hartford: Leonard E. Greenberg Center for the Study of Religion in Public Life.

Ammerman, A. (2002). The PRAISE project: A church-based nutrition intervention designed for cultural appropriateness, sustainability and diffusion. *Health Promotion Practice, 3*(2), 286–301. https://doi.org/10.1177/152483990200300223.

Barna Group. (2011). *Do churches contribute to their communities?* Resource Document. https://www.barna.com/research/do-churches-contribute-to-their-communities/#. Accessed 28 November 2016.

Campbell, M., Hudson, M., Resnicow, K., Blakeney, N., Paxton, A., & Baskin, M. (2007). Church-based health promotion interventions: Evidence and lessons learned. *Annual Review of Public Health, 28*, 213–234. https://doi.org/10.1146/annurev.publhealth.28.021406.144016.

Chatters, L. (2000). Religion and public health: Public health research and practice. *Annual Review of Public Health, 21*, 335–367. https://doi.org/10.1146/annurev.publhealth.21.1.335.

Cnaan, R. (2006). *The other Philadelphia story: How local congregations support quality of life in urban America*. Pennsylvania: University of Pennsylvania Press.

Cnaan, R., & Seongho, A. (2016). Harnessing faith for improved quality of life: Government and faith-based nonprofit organizations in partnership. *Human Services Organization Management, Leadership and Governance, 40*(3), 208–219. https://doi.org/10.1080/23303131.2015.1117555.

DeHaven, M., Hunter, I., Wilder, L., Walton, J., & Berry, J. (2004). Health programs in faith-based organizations: Are they effective? *American Journal of Public Health, 94*(6), 1030–1036. https://doi.org/10.2105/AJPH.94.6.1030.

Eng, E., Hatch, J., & Callan, A. (1985). Institutionalizing support through the church and into the community. *Journal of Health Education and Behavior, 12*(1), 81–92. https://doi.org/10.1177/109019818501200107.

Gallup Report. (2009). *Muslim Americans: A national portrait*. Resource Document. http://www.gallup.com/poll/116260/muslim-americans-exemplify-diversity-potential.aspx. Accessed 11 November 2016.

Grammich, C., Hadaway, K., Houseal, R., Jones, D., Krindatch, A., Stanley, et al. (2012). *2010 U.S. Religion census: Religious congregations & membership study*. Kansas City: Association of Statisticians of American Religious Bodies, Nazarene Publishing. http://www.rcms2010.org/images/2010_US_Religion_Census_Introduction.pdf. Accessed 20 November 2016.

Gunderson, G., & Cochrane, J. (2012). *Religion and the health of the public: Shifting the paradigm*. New York: Palgrave MacMillan.

Hartford Institute for Religion Research. (n.d.) *Megachurch definition*. Resource Document. http://www.hartfordinstitute.org/megachurch/definition.html. Accessed 1 November 2016

Hatch, J., & Jackson, C. (1981). North Carolina Baptist church program. *Urban Health, 10*, 70–71.

Hatch, J., & Lovelace, K. (1980). Involving the Southern rural church and students of health professions in health education. *Public Health Reports, 95*, 23–25.

Hatcher, S., Clay, K., & Burley, J. (2009). The role of black faith communities in fostering health. In R. L. Braithwaite, S. E. Taylor, & H. M. Treadwell (Eds.), *Health issues in the black community* (pp. 507–522). San Francisco: Jossey-Bass.

Institute of Medicine. (2012). *An integrated framework for assessing the value of community-based prevention*. Washington, DC: National Academies Press.

Levin, J. S. (1986). Roles for the black pastor in preventive medicine. *Pastoral Psychology, 35*(2), 94–103. https://doi.org/10.1007/BF01768709.

McKeever, B. (2015). *Nonprofit sector brief 2015: Public charities, giving and volunteering*. Washington, DC: Urban Institute.

McLeroy, K., Bibeau, D., Steckler, A., & Glanz, K. (1988). An ecological perspective on health promotion programs. *Health Education Quarterly, 15*(4), 351–377. https://doi. org/10.1177/109019818801500401.

Mu'Min, K. (2013). *Providing culturally competent care for African-American Muslim women: A resource guide for health professionals* (Unpublished draft). Philadelphia: Drexel University School of Public Health.

Newport, F. (2010). *Americans church attendance inches up in 2010*. Gallup Report. http:// www.gallup.com/poll/141044/americans-church-attendance-inches-2010.aspx. Accessed 12 December 2016.

Newport, F. (2012). *Seven in 10 Americans are very or moderately religious*. Gallup Report. http://www.gallup.com/poll/159050/seven-americans-moderately-religious.aspx. Accessed 22 January 2017.

Pew Research Center. (2015). *America's changing religious landscape*. http://www.pewforum. org/2015/05/12/americas-changing-religious-landscape/. Retrieved 18 February 2017.

PICO National Network. (n.d.) *History*. http://www.piconetwork.org/about/history. Accessed 2 January 2017.

Pluralism Project. (n.d.) *Mission statement*. Harvard University. http://pluralism.org/about/our-work/mission/. Accessed 12 November 2016

Putnam, R. (2000). *Bowling alone: The collapse and revival of American community*. New York: Simon and Schuster.

Service, C., & Salber, E. (1977). *Community health education: The lay health advisor approach*. Durham: Department of Community and Family Medicine, Duke University School of Medicine.

Smith, H., & Novak, P. (2003). *Buddhism: A concise introduction*. San Francisco: HarperSanFrancisco.

Steckler, A., Israel, B., Eng, E., & Dawson, L. (1993). Community health development: An overview of the works of Guy W. Steuart. *Health Education Quarterly, Supplement, 1*, S3–S20. https://doi.org/10.1177/10901981930200S102.

Tillich, P., & Kimball, R. C. (Eds.). (1964). *Theology of culture*. New York: Oxford University Press.

Implications for Public Health Systems and Clinical Practitioners: Strengths of Congregations, Religious Health Assets and Leading Causes of Life

Teresa F. Cutts and Gary R. Gunderson

Abstract Historically and in current times, religious, public health and health system partnerships have been essential in improving health at community scale, ranging from ending infectious disease epidemics to improving the health of the vulnerable dealing with chronic conditions. This chapter sketches that historical background, situating recent efforts against the backdrop of more than a century of public health practice and describes the roles of public health professionals and of empirical evidence in fostering community partnerships between religious organizations and health systems. We also offer seven key principles for religion/health partnerships distilled from the last three decades of practice and theory crafted and conducted by Gary Gunderson, Teresa Cutts and others, built upon the specific frameworks of strengths of congregations, religious health assets and Leading Causes of Life and, in some cases, backed by empirical evidence. These points are illustrated by two case studies of religion/health partnerships in Memphis and North Carolina that exemplify some of those principles. We summarize and draw conclusions, with a particular emphasis on offering useful information for public health practitioners.

Keywords Community engagement · Faith communities · Stakeholder Health · Trust · Spirituality · Public health · Religion · Assets

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1 Introduction

Public health professionals outside of academia work in diverse settings, ranging from the Centers for Disease Control (CDC) to local health departments to community based organizations. They pursue activities ranging from policy advocacy to the delivery of medical care. One important locus of activity for many health professionals involves working for the optimal functioning of *health systems* – the interlocking sets of civil and governmental organizations that deliver healthcare and engage in related health promotional activities. For optimal effectiveness, such organizations must be embedded in a web of relationships – a web of partnerships – with other organizations and individuals in their communities. Such partnerships can supply needed trust, help extend health promotion and training efforts, build community capacity deeper into more vulnerable populations and enhance sustainability of work by mobilizing volunteers. Untold numbers of public health professionals have rendered invaluable services to their communities by envisioning, encouraging, and facilitating such partnerships.

For many generations, such partnerships have often included religious organizations and communities. Religious partnerships have often been essential and have helped eradicate smallpox and end cholera epidemics. A comprehensive history is beyond this chapter' scope, but we will describe some major historical examples as well as more recent religion-health caregiving partnerships that encompass hundreds of rural, urban, and often minority congregations in North Carolina and Tennessee. While such partnerships are perennially valuable, their conditions and nature change over time, so even time-tested principles that have guided such work for generations can benefit from contemporary reformulations. Later we therefore summarize several essential principles, both classic and contemporary, derived from the second author's work over three decades in supporting and fostering partnerships between religious communities and health systems.

In the following sections, we sketch historical background, situating recent efforts against the backdrop of more than a century of public health practice. The third section describes principles or tenets for religion/health partnerships distilled from practice and in some cases backed by empirical evidence. Fourth, we offer two case studies of religion/health partnerships. We then summarize and draw conclusions.

2 Historical Legacy of Religion and Public Health

Public health and religious/spiritual/faith entities have been working together for hundreds of years. Yet, in recent decades, one or both sides have all too often remained ignorant – some might even say chosen to remain ignorant – of their shared heritage of work together. A quick tour through some illustrative historical highlights may convey a sense of this shared collaborative legacy.

One instructive example was long hidden within an iconic episode: Most first year public health students learn that the London Cholera epidemic (1854) was contained by physician Dr. John Snow's seminal work that earned him the moniker of the "Father of Epidemiology." Only recently has the partnership between Dr. Snow and a local cleric, Rev. Henry Whitehead, been explored by scholars, revealing how clergy trust and interviews with locals in that section of London were pivotal factors in helping Snow to map the index case (Johnson 2006). The cleric's work was essential for identifying the female baby whose soiled diaper contaminated the pump that started the contagious rampage across her under-served neighborhood. As is well known, Dr. Snow's removal of the pump handle halted the epidemic that had already killed so many (Gunderson and Cochrane 2012a).

Other examples exist in which public health (more broadly defined) or clinical and community health practitioners were partners without which some epidemics could not have been eradicated. Dr. William Foege was a physician missionary whose smallpox eradication work in Africa (1960–1972) illustrates how religious missionaries – and in this case, the missionaries' radio network helped contain the disease in Africa (Foege 2011). Dr. Foege later relocated his innovative efforts back to the US, where he served as head of the CDC in 1977–1983. Under his guidance, the Carter Center created the Interfaith Health Program (1992), with President Carter's mandate to "do for health what Habitat for Humanity did for housing," even though it was recognized that health is much more complex than housing.

The Interfaith Health Program (IHP) worked out of the Carter Center until relocating in 1999 to Emory University's Rollins School of Public Health. The IHP documented and disseminated lessons learned from field sites around the country, starting with an effort called "Strong Partners: Realigning Religious Health Assets for Community Health" (Gunderson 1997), followed by a CDC-funded training institute (Institute of Faith and Public Health Leaders, 1992–2005). IHP's efforts established early groundwork for the burgeoning field of fostering and evaluating public health and faith partnerships (see also chapter on "Religion and Public Health at Emory University," this volume).

The Interfaith Health Program was launched with a public health vision of needed priorities, but over time, the IHP moved toward the lively space in between both public health and what might be called public faith. This harkened back to the progressive religious tradition of the early twentieth century Social Gospel, which shaped the National Council of Churches and the normative practices of denominations and congregational leaders. These expressed public spirituality through the formation of thousands of social and health ministries, hundreds of hospitals, and ongoing support of public health initiatives such as the widely observed initiative to eradicate tuberculosis. It was the rare public health department that did not have clergy on its founding Boards. Thus, while the collaboration between public health and faith may have seemed new to the generation of leaders working in the 1990s, they were only rediscovering a stream of innovation that had been flowing for at least a century.

For example, in early interfaith dialogues held by the Public Health Leadership Institute at the Fetzer Institute and CDC, leaders such as Dr. Paul Weisner quickly

came to appreciate the deep and common stream of hope for mercy and justice. Those particular public health leaders insisted on the relevance of the expansive language of shalom, experienced as much more resonant to shared public health and faith community discourse than "social determinants."

Recent US national legislation has significantly altered – and arguably improved – the context for successful faith/health collaborations in the US. More specifically, the Affordable Care Act (ACA), although controversial on the level of partisan politics, is widely and universally viewed by public health and faith leaders as an important step in achieving health equity, and as having enabled recent public policy to narrow the gap between public health and faith community values. In this regard, key ACA features include its closely linked rules calling non-profit hospitals to account for their community benefit as determined by public health logic, not just how much medical care they give away. This has drawn the non-profit medical institutions of healthcare further onto the journey toward community health. Many of those hospitals are arguably remembering a faint religious echo in their founding documents. That is, in responding to legislative incentives or mandates to undertake new partnerships, some nonprofit hospitals have consulted their century-old founding documents that dated to times when organizational missions were less likely to incorporate technocratic language, and more likely to express theological visions and values. In those earlier times, both public health and religious healthcare were learning the purposes and possibilities of twentieth century health science while often conceiving of their organizational mission in terms of the values of mercy and justice. As these organizations revisit their deepest responsibilities in light of new circumstances generated by the ACA, they are discovering a partly religious and spiritual – not purely scientific – history in that shared vision that is reemerging, and arguably bearing fruit again 100 years later. From this widespread and deeply rooted but not universal US-based religious perspective, the "public" part of health itself has a religious history that expects spirit to bear fruit in public scale actions by the collective called "the people," (Gunderson and Cochrane 2012a; Rauschenbusch 2010).

For example, virtually every large health system in the US today was founded in the last two centuries by a religious leader or denomination for enhancing the common good, often specifically to supply health care to the poor (Gunderson and Cochrane 2012a). Far from being confined to private opinion and internalized taste, from this influential deeply indigenous US religious perspective, "spirit" is historically the driver of very public policies and political choices. Policy-making emphasis on the common good was very common in the United States for much of the twentieth century, and nowhere more visible than in the public choices to harness the new science to create charitable hospitals as expressions of religious mission and to create public health departments, often with the same Board members and expectations of public service. Interestingly, that movement, which continues today, has been grounded in care for vulnerable populations with chronic conditions vs. infectious diseases and has been spurred on by the passage of the Affordable Care Act or ACA.

Passage of the ACA has also helped launch more robust health system and congregational partnerships (2010). The ACA has generated controversy especially

because of its handling of insurance coverage. Less known is that hundreds of pages of the legislation is about pushing care upstream toward prevention and improved community health. Those facets of the law do not just decenter hospitals, but also pull all public health entities beyond their traditional boundaries into working partnership with the active various community partners. In most communities these working partnerships include congregations and the social service networks those congregations have created and still are creating constantly. Such social groupings, sometimes called *social or generative nodes*, may often be operationally understood by their secular healthcare or governmental partners as a kind of secular non-profit organization. By social or generative nodes we refer to those organizations where differing streams of thought, innovations, and relationships come together to form a hub capable of generating fresh approaches to community health development (Winslow et al. 2016). But most such congregationally derived partners understand themselves as being formed for, by and of faith. For fully effective partnerships, both partners must be respectful of what might be called each other's "birth narratives." The faith partners must be respected for their own stories, just as the public partners have to be respected for their histories and missions. As we go to press, the ACA has been law for more than half a decade. Many significant ACA components have been valued in a bi-partisan fashion, including no caps on lifetime coverage for those with chronic or catastrophic illnesses, and coverage for adult children up to age 26 years. Many US-based observers, including the present authors, believe there is no going back to simpler times when faith, medicine and public health could maintain a comfortable distance from each other. Much common work, arrived at by two different driving identities, has made the field of faith/health partnerships not only interesting and challenging, and relevant in societies around the world (see chapter, "International and Global Perspectives on Spirituality, Religion, and Public Health," this volume), but also increasingly important if not essential for the well-being of millions of Americans.

3   Principles for Fostering Successful Religion and Public Health Partnerships

Today there are many ways to think about the relevance of religion/spirituality (R/S) to healthcare systems. One way of viewing R/S relevance is to consider the base of empirical evidence, as has been reviewed extensively in Part I of this book. Potentially relevant published literature addresses health program interventions at R/S sites (Campbell et al. 2007), R/S-tailored treatments offered in health care settings (Worthington et al. 2011), and interventions such as nonsectarian or culturally appropriate forms of meditation and mindfulness that may support spirituality in workplaces (Giacalone and Jurkiewicz 2010) (see chapter, "Public Health Education Promotion, and Intervention: Relevance of Religion and Spirituality," this volume).

Alternately, one may think about the relevance of R/S to both public health and healthcare from perspectives that have been articulated in three major frameworks

contributed by the second author of this chapter over the past three decades. These three frameworks focus, respectively, on *strengths or assets of congregations*, *Leading Causes of Life* and *religious health assets* (Gunderson 1997; Gunderson and Pray 2009; Gunderson and Cochrane 2012a, b). These perspectives and the relevance of R/S to health systems will be reviewed below and followed by practical examples in which these concepts have been used to create public health, health system and faith community partnerships shown to improve community health status (Gunderson and Cochrane 2012a).

3.1 Strengths of Congregations, Leading Causes of Life and Religious Health Assets

Strengths of Congregations The convergent logic of the Interfaith Health Program was not limited to highlighting promising practices that could accomplish public health goals in faith-based venues, or adapting prevention messages to include convenient scriptures from the ancient traditions. Rather, both the fields and movements of health and faith were drawing from a common pool of logic that defined how health is determined over time. Both movements – public health and public faith – brought strengths to be woven into policies and practices. Congregations of all faiths were viewed as mediating social entities (Todd and Allen 2011; Ribisl and Humphreys 1998) with a pattern of social strengths expressed in roles that could be shaped over time with integrity. These congregation-based social strengths were more adaptive than a list of best practices. Importantly, they also generally depend on leaders in both health and faith to understand the social complexity of humans. A pattern of eight core strengths of congregations (Gunderson 1997) served in the IHP as a framework to hold open the imagination of both faith and health leaders so that the roles, practices and policies of faith organizations could be strengthened and artfully combined with public health science. And, likewise, the roles, practices and policies of public health could also be strengthened by artfully applied questions (as posed by IHP) and insights in the complex lives of citizens, leaders of all kinds of institutions. This focus on the social strengths of congregations accompanied and in some cases preceded the increased recognition by the health sciences of the strong influence that can be exerted on health by many social factors. Recognized social strengths of congregations included the ability to accompany, convene, connect, tell stories, give sanctuary, bless, pray and endure. This strengths of congregations framework (Gunderson 1997) has provided a robust way for congregations to think systematically about their work, particularly in terms of building public health partnerships.

Leading Causes of Life However, it is important to note that the relationship between public health and faith is not without creative tension. Tensions include a resistance to the core focus of public health on the leading causes of death, embodied by the irony that the department of vital statistics is usually publicly known primarily

as an organization offering rank orderings of causes of death and disability. Faith rhetoric is usually quite responsive to context and experience and a focus on strengths or life vs. death. But, interestingly, there also has been an increasing move in the health sciences over the last few decades toward "salutogenic" approaches (Antonovsky 1987; Seligman 2002; Singhal 2013; see also chapter, "Social and Community-Level Factors in Health Effects from Religion/Spirituality", this volume). As such, it is not entirely surprising that the faith side of the faith and health movement triggered the initial organized curiosity about the Leading Causes of Life (LCL, Gunderson and Pray 2009), *but*, that many in the body of health science have also embraced these causes (Gunderson and Cochrane 2012a). The five leading causes of life include connection, coherence or a means of understanding your own narrative, agency or the ability to do, inter-generativity or blessing, and hope. The great challenges and opportunities of twenty-first century science may be more likely to be realized through programs organized around a more integrative understanding of health – not just disease – such as that offered the Leading Causes of Life framework. The Leading Causes of Life are useful in animating practical alternative approaches to the great challenges facing communities, but may also help in developing new data and evaluation techniques more directly serving the goals of health and well-being. These contrast to evaluation models based on disease and pathology, the elimination of which does not equate to wellness. Also, there is a contingent of over 50 international scholars (Leading Causes of Life Fellows), many of whom are embedded in public health, who are carrying this initiative and promoting use of the Causes in a variety of clinical, academic, economic, educational and policy settings (see Leading Causes of Life Initiative website: http://www.leading-causes.com/about-us.html).

Religious Health Assets There has been no greater public health crucible than HIV/AIDS, especially in Africa where the disease followed the weak channels of cultural and political injustice to wreak havoc among the oppressed and vulnerable, especially defined by gender and ethnicity. The radical scale of that public health catastrophe called out a whole new body of thought in response, the idea of religious health assets (Cochrane et al. 2011). The capacity of religion for both good and bad was very evident in this crisis. On the negative side, it was obvious, and still is, that religion can often be the last refuge of the worst stigmas and most debilitating public language that makes public health policy difficult. But on the positive side, religious communities also offered many positive responses. In 2005 it was a bold move by Rev. Ted Karf of the World Health Organization (WHO) to fund scholars at the University of Cape Town, University of Kwazulu Natal, University of Witswatersrand and Emory University to develop a researchable typology and practical methodologies to bring to visibility the community health assets on which public health initiatives of country scale could be based. What made Ted's move bold was that the WHO had not previously included any religiously linked community assets in their comprehensive strategy to prevent, treat, or deal with the consequences of the high death rates associated with AIDS. While religion was well understood as both a social and political barrier to the application of public health science the pandemic, it was novel and risky to systematically explore the way in

which these same networks could serve as assets. This resulted in the only global release of a WHO report ever held in a religious venue, at the National Cathedral in Washington, DC in 2007 (ARHAP 2006).

The methodology of participatory mapping labeled originally as Participatory Inquiry into Religious Health Assets, Networks and Agency or PIRHANA, was developed to make those religious and community assets visible. The mapping process has now evolved through numerous iterations endorsed by USAID, CDC and numerous governments, including implementation across South Africa (Cutts et al. 2016). The methodology and logic is fundamental to the large scale faith and health initiatives in Memphis and North Carolina. Indeed, the very name of those initiatives is African: we now speak of FaithHealth, without the space, because of the discovery that in the African language of Sesotho there is no word for faith that does not include health and no word for health that does not include faith. Thus, there is no way to speak of individual health or spirit without including the social – public – connections.

3.2   Principles for Application for Health Systems

Decades of study of the concepts of strengths of congregations, Leading Causes of Life , and religious health assets have led the authors of this chapter and others to develop and refine the following key principles for practice, development and implementation, outlined in more detail in Gunderson and Cochrane's *Religion and Health of the Public* (2012a). These principles also are embodied in the two case studies of faith community, health system and public health partnerships that follow.

1. *Seeing the "health of the public" as ultimately emerging from all organizations and groups,* not just health departments, hospitals, clinics and healthcare practitioners, but churches, schools, sports clubs, beauty and barber shops, etc.
2. *Building, strengthening and nurturing this broader health of the public via webs of trust*. Work only flourishes when trust is repaired, established and then continually nourished and held between the health systems and faith and other community partners.
3. *Fostering community scale health vs. that of individuals, or patient- practitioner dyad models.* We discovered that moving to community or public health scale transcends the more limited bio-medical model to build the scope of the work and maximize its impact much more quickly.
4. *Highlighting strengths and assets model vs. deficits/gaps/needs.* As noted above, the African/International Religious Health Assets Programme (ARHAP) and its mapping and other tools focus on strengths of communities and congregations. In a similar manner, the work that uses Leading Causes of Life vs. a pathology focus tends to be pivotal to inspiring hope and sustaining the broader faith community partnership work.

5. *Seeing the health of the individual within their broader life context* (socio-ecological model, bophelo or the African Sesotho word that reflects that faith and health cannot be disconnected) *to enhance healing and engage their social and spiritual assets*. Our work adheres to understanding the individual within a broader bio-psycho-social-spiritual framework (World Council of Churches 2007).
6. *Being aware of and intentionally disrupting the power dynamics that further marginalize some individuals and groups*. Lifting up the "voices" of those groups who are vulnerable and/or marginalized in a truth-telling fashion shifts those power dynamics and signals to the broader community that public health and health systems are open to a new way of dealing with those who are vulnerable.
7. *Being aware that religion/spirituality can have a shadow or toxic aspect when it comes to health and well-being is critical to preventing harm*. This point was especially poignant in the early work with those with HIV/AIDS in the late 1980s and 1990s in sub-Saharan Africa, where many faith community leaders and denominations engaged in blaming, judgment, stigma and other practices that inadvertently worsened that pandemic's spread (Cochrane et al. 2011).

How do we apply these to health systems in particular? Each principle has various common applications in the context of health systems. For the first principle – health emerging from all organizations – a health system, as a major force in the community, can often serve in the role of a convener of the spectrum of community organizations. We convey these applications through two case studies, the focus of our next section.

4   Health System and Faith Community Partnerships: Case Studies

Our national learning collaborative of over 50 health systems, Stakeholder Health, began in 2011 with the goal of caring for vulnerable populations and shares the practice of dozens of community and health system partnerships granularly in our recently published book (Cutts and Cochrane 2016). The following two well-documented case studies with which the present authors have been closely involved (also highlighted in the Stakeholder book) illustrate several challenges and opportunities to contribute that are open to health systems, which increasingly are focused on building robust partnerships with community partners. Partnerships represent a way to adapt to the Affordable Care Act, which mandates decreased reimbursement for readmissions and care for indigent persons, particularly those seen in Emergency departments (Stine et al. 2013). While faith community partnerships with health systems are not new, few have shown true return on investment or viable metrics to support their efforts (Barnett et al. 2016). Both of the following partnerships generated early data that documents favorable impacts on healthcare utilization. A similarity between Memphis and North Carolina is that both health system sites flourished when they relinquished more control of the work, ceding that to the

self-organizing women's council in Memphis and the county level workers in North Carolina. A difference noted between sites is that North Carolina churches are reluctant to sign covenants, while Memphis churches were eager to do so.

4.1   The Memphis Model or Congregational Health Network

The Memphis Model or Congregational Health Network (CHN) Congregational Health Network (CHN) is a partnership with 604 congregations (85% African American) and Methodist Le Bonheur Healthcare or MLH (a 1.5 billion dollar, 7-hospital system) located in the concentrated urban poverty and disparity hub of Memphis, Tennessee. Its goal is to improve the health and well-being of all who live in the Memphis area. The Memphis Model offers tangible examples of all seven of the principles noted above.

The CHN started in 2006 with a 12 month covenant development and design committee comprised of 25 local clergy, who developed five care pathways, tracks that members might take extending from community to the hospital and back. These pathways included (1) prevention, (2) education, (3) treatment (access to ambulatory care), (4) intervention (inpatient care) and (5) aftercare (post hospital discharge). Covenantal language was chosen vs. the more secular "contract" to reflect the religious context of the partnership and both clergy leaders and the health system signed on to fulfill their part of the covenant. Clergy leaders agreed to be a part of the ongoing planning and tracking for CHN, to preach and model wholistic health from the pulpit and in their actions, to appoint at least two health ministers (called liaisons) to be trained, as well as to serve as the custodians of the program as it evolved. MLH, the health system, agreed to offer up to 60% out-of-pocket discounts for inpatient health care to paid clergy leaders in the CHN, provide free educational offerings to clergy and lay members, assign a dedicated Navigator to the congregations and provide ongoing support, training, and appropriate resources for the partnership.

In the CHN, clergy and other church representatives play an equal role with hospital staff, promoting better health by serving as role models, helping individuals adopt healthier lifestyles, encouraging use of community-based programs, and serving as a link between congregants and the health care system. By "taking the brick off the walls of the hospital," or integrating the work of community and clinical care, the hospital's power is decentered, becoming only one part of the total community health care system as it partners with traditional public health departments, businesses, universities as well as faith communities (Gunderson and Cochrane 2012a, b). The CHN has other key aspects, including authentic community-based design, partnering, data analysis, evaluation and ongoing program development (Agency for Healthcare Research and Quality or AHRQ 2014). For example, a key group of 25 local clergy worked for several months at the outset of the program to develop the covenant signed by senior clergy leaders, outlining what the hospital would offer and what the congregations/clergy would agree to do in that cooperative agreement. Additionally, all data from hospital utilization was shared with CHN

members for their input/analysis/interpretation, which greatly enhanced its utility in creating new programs in congregations as well as identifying needed training topics for congregational members. We view these efforts as a part of authentic Community Based Participatory Research or CBPR (Wallerstein and Duran 2006). The Memphis Model or CHN structure includes both 12 paid navigators (full-time staff who work both within the hospital and outside in the congregations to "bridge" persons to better care), as well as 602 liaisons (volunteer trained health ministers in congregations).

As part of the CHN function, enrolled congregants (now over 20,000) are flagged by the health system's electronic medical record whenever admitted to the hospital. A hospital-employed navigator, working both within the hospital and in congregations, visits the patient to determine his or her needs and then works with a church liaison to arrange post-discharge services and facilitate transition. Such visits are key examples of the integration between health systems and faith communities, showing how the partnership adds value beyond the siloed efforts of only hospital care and congregational caregiving. Lastly, CHN has trained over 4000 congregational and community laypeople in at least one of 14 capacity building 14 h trainings, designed to improve the ability of community caregiving, in the following areas: care for the dying, hands-on caregiving, mental health first aid, community health worker certification and learning how to access safety net services, chronic care management, early brain development and prevention of dementia, cancer prevention, diagnosis and treatment and others (Cutts, Personal Observation, 2014).

Early findings showed that the 473 individual CHN members cared for in the network had aggregate total charges that were $4M less than those of non-CHN members matched on age, sex, race and diagnostic related groups (90% of these patients were also affiliated churches, that were not part of our network) (Cutts 2011). More rigorous predictive modeling of the data archived in the electronic medical record showed that CHN members' time to readmission for all diagnoses was significantly longer than that of matched controls and that their gross morality levels were roughly half of non-CHN patients (Barnes et al. 2014).

The Memphis Model findings have captured the attention of many prominent groups, including the Dept. of Health and Human Services (Health Systems Learning Group 2013), AHRQ (2014) and the Institute Of Medicine or IOM (Gunderson et al. 2015). Stine et al. (2013) highlighted the need for developing geographic or place-based population health approaches for the 80% of US residents who live in urban environments and promoted the Congregational Health Network as best practice in an under-served setting with a majority African-American population, leveraging the strength of faith-based community networks and resources.

Lessons learned from the Memphis Model include allowing the grassroots and lay leaders (in this case, the women of the church, who self-organized an Advisory Council) to take on more autonomy and input into programming earlier in the process. Additionally, bringing clinical providers into the planning for the CHN earlier in the process would have also improved MLH's internal staff understanding of CHN structure, function and intent, probably escalating the growth of the network and enhancing community educational efforts.

4.2 The North Carolina Way

In 2012, Wake Forest Baptist Medical Center (WFBMC), other North Carolina (NC) philanthropies and the NC Hospital Association sought to bring the Memphis Model to the state, including recruiting the second author (GG) to the position of VP of what was initially named FaithHealthNC. The process now includes many aspects that reflect the particular array and interplay of partners across the state, is known as "The North Carolina Way," whose structure and function is described in detail below. The goal of the NC Way was to replicate the work done in Memphis with the CHN to decrease healthcare utilization and costs to the hospital and it embodies all of the seven principles noted above.

In 2012 the WFBMC Board committed the funds of an internal foundation to the process of providing "proactive mercy" toward the poor versus the usual reactive charity care write-offs (Gunderson et al. 2015). By reactive charity care write-offs, we refer to how most hospitals assume that costs of caring for indigent cannot be predicted or managed in any way; the WFBMC team believes that costs of care to the under-served can be managed and contained (i.e., proactive mercy). The three indicators for accountability promised to the WFBMC Board to demonstrate such proactivity in 2012 included: (1) Evidence of wide and growing community partnerships, (2) that charity care or self-pay costs for the indigent would increase in 2013 (due to persons testing expanded access) and then decrease annually and (3) that the model would gain peer endorsement.

The emergence of the NC Way network was much slower in growth of congregational partners than that of Memphis; but, since Fall 2013, the congregational partnerships have escalated, particularly as defined by congregational caregiving efforts. To date, there are 311 congregational partners spanning 19 NC counties (and one in Virginia). These partnerships include local congregational partnerships in other counties, which often have local branding and specific local leadership. For example, the Robeson County partnership is called "Compassion for U," and the Watuaga county group is called "App FaithHealth." Specific congregations are defined as partners if they have made referrals to our hospital partners or have responded to referrals made by the hospitals with community caregiving, in a bi-directional caregiving model.

The NC Way is marked by a more distributed and localized model than that of Memphis, especially in highly rural counties, who are engaging volunteers in more hands-on caregiving services. The NC Way structure is led by WFBMC, an umbrella organization that intentionally does not brand itself as such. The NC Way also includes 7 Fellows, 21 Connectors, 1753 volunteer clergy and 601 trained lay volunteers (231 unique). Additionally, 3 full-time Liaisons employed by WFBMC, also represent the overall denominational structure of the General Baptist Convention of 4000 congregations (traditionally all African-American congregations), the North Carolina Baptist State Convention, representing 3600 congregations and the Cooperative Baptist Convention, representing 400 congregations, totaling roughly 8000 congregations),

FaithHealth *Fellows* are a collaborative learning cohort from across NC who have been trained to be leaders in the theory and practice of integrating health systems and community efforts, most recently through a Kate B. Reynolds (KBR) Charitable Trust grant. They will serve as faculty for the next cohort of leaders trained, starting in January 2017. *Connectors* (who are locally embedded in given geographical areas and/or other denominational networks, like the Moravian Church or United Methodist Church) triage volunteers, provide direct caregiving, train lay persons and build capacity across networks and are funded by the above-mentioned KBR grant, as well as the Wake Forest Baptist Foundation, most working 10 h per week for a monthly stipend of $500. Three *liaisons* are full-time paid staff representing the three denominational structures mentioned above. Lastly, pivotal to our local Wake Forest/Forsyth county model is our five full-time staff, the *Supporters of Health*, who work primarily in our most under-served neighborhoods in Forsyth County and have shown significant return on investment in their first 6 months' efforts (Barnett et al. 2016).

In terms of function, Connectors, Supporters of Health, Liaisons, congregational volunteers and hospital staff all work together to provide care for the most vulnerable in our 19 counties, and in conjunction with 8 partnering health systems across 8 counties. Referrals can come from community or congregational partners and are triaged by local Connectors to the most appropriate social or clinical service line associated with the most proximal health system appropriate to that referral need. Additionally, our Connectors, Supporters and hospital staff also refer to local agencies and congregations when a non-clinical need is identified, such as transportation, food, access to medications, support and activities of daily living or home repair. For example, congregations located nearby a recently discharged patient who cannot cook his own meals due to health limitations (e.g., post-surgical) may be asked to provide warm meals daily for a 2 week period. Or congregations may provide daily rides for chemotherapy or other ongoing treatment needs for those who live far from the setting where that level of tertiary care can be provided. Evidence suggests that religious congregations may be experienced as especially trustworthy and effective in providing such assistance (see chapter, "Public Health Education, Promotion, and Intervention: Relevance of Religion and Spirituality," this volume).

In terms of results, WFBMC's 2012 estimated aggregate charity care spending was $60M (self-pay figures only, not including uncollected co-pays or other bad debt), with roughly 30% of self-pay patients accounting for those costs being concentrated in five local under-served zip codes. Charity care figures trended exactly as predicted by second author in 2012 (GG); that is, due to expanded access, there would be an increase in charity care in the second year. From a baseline in FY12, there was a 9% increase in FY13, then a downward trend from FY14 (16% decrease from baseline) and FY15 (4% decrease from baseline), representing a decrease of $2.5M.

Since 2012, congregational partnership growth in Forsyth County has been steady, with 89 partners, representing 20% penetration of the total congregations (meeting our target for each county). Lastly, the NC Way has attracted national attention, including the Institute for Healthcare Improvement (IHI 2014), the Institute of Medicine (Gunderson et al. 2015) and has been funded to document parts of its work

by the Robert Wood Johnson Foundation (Cutts and Cochrane 2016). Thus, all three indicators promised to the WFBMC Board in 2012 have been achieved.

Lessons learned from adapting the Memphis Model to NC include these tenets. NC churches are reluctant to sign covenants, which we believe reflect wariness of "company town" entanglement, as hospitals are now similar to very large companies (Earle et al. 1976). Training caregivers in churches before there is a structure to engage them can quickly suppress congregational mobilization efforts. A focus on locally responsive caregiving models with less uniformity has been more useful than WFBMC staff providing more prescriptive coordination oversight. Lastly, under-served and minority populations' community distrust in academic medical centers is often strong, given past historical trauma, such as the Eugenics program in NC (Begos et al. 2012). Such distrust often makes community engagement efforts difficult in marginalized communities.

5   Applications for Professionals in Health Systems

For professionals working in health systems – whether trained in public health or other fields – applying the principles enunciated earlier means understanding how the healthcare system can apply those principles. The case studies above offer examples of how each of the seven principles have been successfully applied to help faith community, health system and public health partnerships can work together to achieve community health improvement. We now offer additional examples of how these principles may be put into practice by health systems and the individuals working with them and in them.

In terms of *seeing the "health of the public" as ultimately emerging from all organizations and groups,* not just traditional health departments, hospitals, clinics and healthcare practitioners, the Memphis Model engaged all of these entities in terms of "creating health." Two local community colleges in Memphis voluntarily offered up to 3 h of elective credit for church members who completed the four core courses offered by the CHN. In NC, we even engaged local businesses via the Chamber of Commerce, to work in partnership and sign covenants along with the churches (Gunderson, personal communication, 2014).

Building, strengthening and nurturing this broader health of the public via webs of trust was manifested when, in both sites, the work flourished when trust was established between the health systems and faith and other community partners. This was particularly salient in Memphis, where many under-served persons of color had deep distrust of the health systems, often seeing hospitals as places where the elderly go to die (Cutts et al. 2016). By 2012, however, CHN members were significantly more likely to be admitted to Hospice than the total population served at the hospital, indicating through this proxy measure that trust had been built in this predominantly African-American cohort (Cutts et al. 2016). Also, the program began to grow exponentially and flourish when CHN clergy leaders were offered and received the 60% clergy discount on care – a real value to many bi-vocational

pastors who had no other healthcare coverage. Trust may be the most necessary component to build and sustain viable partnerships of any kind between faith and public health entities.

Fostering community scale health vs. that of individuals, or patient- practitioner dyad models was demonstrated in both partnerships. Through community-based educational offerings (now having been conducted with literally thousands of congregational and lay leaders in the Memphis area and across NC, the focus has been on encouraging community-based caregiving and self-management of disease, empowering locals to be a stronger agent in improving health status outside of only traditional healthcare settings.

Highlighting strengths and assets model vs. deficits/gaps/needs was noted in the Memphis and NC examples. Both sites used versions of the ARHAP religious and community asset mapping as a springboard for their community engagement and trust-building work. In a similar manner, all case studies demonstrate an emphasis on Leading Causes of Life rather than pathology. Memphis used Leading Causes of Life as an orientation to many of its 7 week trainings in community and it was a part of orientation for all new Methodist Le Bonheur Healthcare staff. In NC, WFBMC teaches Leading Causes of Life as part of its training for Clinical Pastoral Care residents and as part of the Behavioral Health curriculum for Medical Residents in Family Medicine and Psychiatry.

Seeing the health of the individual within their broader life context is key to the way both sites approach clinical and community care. WFBMC in NC conceptualizes all cared for, both inside the clinical enterprise and in community (via our Connectors and Supporters of Health and Volunteers) as individuals living within a full bio-psycho-social-spiritual context.

Being aware of and intentionally disrupting the power dynamics that further marginalize more vulnerable individuals and groups can be seen in both the work in Memphis and NC. For example, in Memphis, the Methodist Le Bonheur Healthcare Board by-laws were changed such that local CHN clergy could become voting members of the hospital FaithHealth Board. Similarly, in NC, WFBMC FaithHealth staff used their positional authority to sponsor drives for approximately 900 undocumented persons (mostly Hispanic) in 2016 to obtain picture identification cards, in conjunction with local city and county law enforcement partners (despite current anti-immigrant sentiment in the state) (Cutts et al. 2016).

Being aware that religion/spirituality can have a shadow or toxic aspect when it comes to health and well-being is critical to preventing harm and exemplified by both case studies. The Congregational Health Network in Memphis and The North Carolina Way staff work pragmatically with faith communities, chaplains, local clergy and a variety of other faith-oriented stakeholders, while noting that they are not a panacea to problems or all issues. For example, despite bitter bi-partisan splits in the NC government, The NC Way work has had strong support from both deeply conservative and more liberal religious and governmental leaders.

References

African Religious Health Assets Programme. (2006). *Appreciating assets: The contribution of religion to Universal Access in Africa. Report for the World Health Organization.* Retrieved from http://www.irhap.uct.ac.za/pub_WHO2006.php

Agency for Healthcare Research and Quality. (2014). *Service delivery innovation profile: Church-Health system partnership facilitates transitions from hospital to home for urban, low-income African Americans, reducing mortality, utilization, and costs*. Retrieved from https://innovations.ahrq.gov/profiles/church-health-system-partnership-facilitates-transitions-hospital-home-urban-low-income

Antonovsky, A. (1987). *Unraveling the mystery of health: How people manage stress and stay well*. San Francisco: Jossey-Bass Publishers.

Barnes, P. B., Cutts, T. F., Dickinson, S. B., Hao, G., Bowman, S., & Gunderson, G. (2014, October). Methods for managing and analyzing electronic medical records: A formative examination of a hospital-congregation based intervention. *Population Health Management, 17*(5), 279–286. https://doi.org/10.1089/pop.2013.0078.

Barnett, K., Cutts, T., & Moseley, J. (2016). Financial accounting that produces health. In T. Cutts & J. R. Cochrane (Eds.), *Stakeholder health: Insights from new systems of health* (pp. 125–147). Winston Salem: Stakeholder Health.

Begos, K., Deaver, D., Railey, J., & Sexton, S. (2012). *Against their will: North Carolina's sterilization program*. Apalachicola: Gray Oak Books.

Campbell, M. K., Hudson, M. A., Resnicow, K., Blakeney, N., Paxton, A., & Baskin, M. (2007). Church-based health promotion interventions: Evidence and lessons learned. *Annual Review of Public Health*, *28*, 213–234. https://doi.org/10.1146/annurev.publhealth.28.021406.144016.

Cochrane, J. R., Schmid, B., & Cutts, T. (Eds.). (2011). *When religion and health align: Mobilizing religious health assets for transformation*. Pietermaritzburg: Cluster Publications.

Cutts, T. (2011). The Memphis congregational health network model: Grounding ARHAP theory. In J. R. Cochrane, B. Schmid, & T. Cutts (Eds.), *When religion and health align: Mobilizing religious health assets for transformation*. Pietermaritzburg: Cluster Publications.

Cutts, T., & Cochrane, J. R. (Eds.). (2016). *Stakeholder health: Insights from new systems of health*. Winston Salem: Stakeholder Health.

Cutts, T., King, R., Kersmarki, M., Peachey, K., Hodges, J., Kramer, S., & Lazarus, S. (2016). Community asset mapping: Integrating and engaging community and health systems. In T. Cutts & J. R. Cochrane (Eds.), *Stakeholder health: Insights from new systems of health* (pp. 73–95). Winston Salem: Stakeholder Health.

Earle, J. R., Knudsen, D. D., & Shriver, D. W. (1976). *Spindles and spires: A re-study of religion and social change in Gastonia*. Westminster: John Knox Press.

Foege, W. H. (2011). *House on fire: The fight to eradicate smallpox*. Berkelely: University of California Press.

Giacalone, R., & Jurkiewicz, C. (Eds.). (2010). *Handbook of workplace spirituality and organizational performance*. Armonk: M.E. Sharpe.

Gunderson, G. R. (1997). *Strong partners: Realigning religious health assets for community health*. Atlanta: Carter Center.

Gunderson, G. R., & Cochrane, J. R. (2012a). *Religion and the health of the public: Shifting the paradigm*. New York: Palgrave MacMillan.

Gunderson, G. R., & Cochrane, J. R. (2012b). *Mobilizing religious health assets for transformation: The Barefoot guide 3*. Available at http://www.barefootguide.org/index.php/download/the-barefoot-guide-3

Gunderson, G., & Pray, L. (2009). *Leading causes of life*. Nashville: Abingdon Press.

Gunderson, G., Cutts, T., & Cochrane, J. R. (2015). *The health of complex human populations*. Washington, DC: Institute of Medicine.

Health Systems Learning Group (HSLG). (2013). *Strategic investment in shared outcomes: Transformative partnerships between health systems and communities*. Retrieved from http://stakeholderhealth.org/wp-content/uploads/2013/09/HSLG-V11.pdf

Institute for Healthcare Improvement (2014). *Luther story.*

Johnson, S. (2006). *The Ghost map: The story of London's most terrifying epidemic – And how it changed science, cities, and the modern world*. New York: Riverhead Books.

Rauschenbusch, W. (2010). *Theology of the social gospel*. Eastford: Martino Fine Books.

Ribisl, K. M., & Humphreys, K. (1998). Collaboration between professionals and mediating structures in the community: Toward a "third way" in health promotion. In S. A. Shumaker & E. B. Schron (Eds.), *The handbook of health behavior change* (2nd ed., pp. 535–554). New York: Springer.

Seligman, M. (2002). *Authentic happiness: Using the new positive psychology to realize your potential for lastingfFulfillment*. New York: Free Press.

Singhal, A. (2013). *Positive deviance and social change*. Philadelphia: Plexus Institute.

Stine, N. W., Chokshi, D. A., & Gourevitch, M. N. (2013). Improving population health in US cities. *JAMA, 309*(5), 449–450. https://doi.org/10.1001/jama.2012.154302.

Todd, N. R., & Allen, N. E. (2011). Religious congregations as mediating structures for social justice: A multilevel examination. *American Journal of Community Psychology, 48*, 222–237. https://doi.org/10.1007/s10464-010-9388-8.

Wallerstein, N. B., & Duran, B. (2006). Using community-based participatory research to address health disparities. *Health Promotion Practice, 7*(3), 312–323. https://doi.org/10.1177/1524839906289376.

Winslow, G., Smith, F., Stiger, D., Barilla, D., & Carter Perrilliat, C. (2016). Mission and the heart of healthy communities. In T. Cutts & J. R. Cochrane (Eds.), *Stakeholder Health: Insights from new systems of health* (pp. 185–192). Winston Salem: Stakeholder Health.

World Council of Churches. (2007). *Consultation on mental health and faith communities*. Vellore: Christian Medical College. Available at www.arhap.uct.za.

Worthington, E. L., Hook, J. N., Davis, D. E., & McDaniel, M. E. (2011). Religion and spirituality. *Journal of Clinical Psychology, 67*(2), 204–224. https://doi.org/10.1002/jclp.20760.

Part III
Implications for Educating of Public Health Professionals

Introduction: What Should Public Health Students Be Taught About Religion and Spirituality?

Doug Oman

Abstract This chapter introduces the volume's Part III, which contains chapter-length portraits of how seven top schools of public health are addressing religious/spiritual (R/S) factors in their educational offerings. This chapter also reports findings from national surveys of public health graduate students (n = 980) and public health school leaders (e.g., deans, n = 24).The history of public health teaching about religious/spiritual factors can be traced back several decades, but only now, with the emergence of a large and rapidly expanding inter-disciplinary empirical research literature on R/S and health, does the topic appear poised and ready for widespread inclusion in public health education. Completed surveys about R/S and health were obtained from 980 public health graduate students from 24 US-based schools and colleges of public health. A majority (53%) believed that R/S-health topics received too little coverage in their public health education. Respondents who had received more frequent educational exposure to evidence about relations of R/S factors with disease and longevity were significantly more likely to believe that R/S factors should receive coverage in public health training that is similar to the coverage of other well-established health factors. Similarly, of 24 deans or dean-designated respondents to a public health school leader survey, a large majority (20/24) agreed that evidence about R/S-health relations should be included in public health education. Enunciation of formal professional competency lists would be premature. But many resources are available to academic public health educators who wish to start new efforts or refine existing ones, including the seven following chapters.

Keywords Religion · Spirituality · Public health · Education · Curriculum · National survey · Graduate student · School leader · Professional competency · ASPPH

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Persistent and possibly causative associations between religion and spirituality
(R/S) and health have been documented in an enormous empirical research litera-
ture, as described in Part I of this volume. Public health professionals doing practi-
cal work in communities have much to gain by taking into account R/S factors, as
described in Part II of this volume. But how should academic public health educa-
tors teach about religion and spirituality to their public health students in training?
In particular, what should be learned by the more than 25,000 PhD, DrPH, MPH,
and other students enrolled in the 50+ schools of public health (SPHs) and colleges
of public health (CPHs) across the US?

The following seven chapters in Part III of this volume portray some of the
diverse ways that leading academic public health educators at top-ranked schools
and colleges of public health have been teaching about R/S factors. Some of the
R/S-health courses that they teach have been underway for about a decade
(University of California, Berkeley) or much longer (Boston University), whereas
others are newer (e.g., University of Illinois). The educational efforts documented
in this part vary considerably in their approaches and emphases, which underscores
the breadth and freshness of the R/S-health topic. The courses described here
include diverse strengths. Emphases include practice and community engagement
(Drexel), multicultural diversity (Michigan), statistical inference (Harvard), empiri-
cism and diversity (Berkeley), ethics (Boston), international and theological engage-
ment (Emory), and evidence-based inter-professional relevance (Chicago). Each
chapter sketches the history of efforts to address R/S-health topics at the author's
institution, profiling at least one course, sometimes briefly, more often in depth.
Together we hope that these chapters will offer current and future academic public
health educators a rich source of inspiration and a collection of models and tools for
undertaking their own teaching about R/S factors. Most readiers will perhaps agree
with us that in a rapidly changing world, our students, who are the next generation
of public health leaders, deserve nothing less than the best evidence-grounded edu-
cation that we can give them about religion and spirituality as forces that may pow-
erfully affect health.

Stand-alone classes – a major emphasis of the next seven chapters–are not the
only vehicle for teaching about R/S factors within public health schools and col-
leges. An equally important and complementary role is played *across the curricu-
lum* by additional lectures, readings, internships, and other learning activities that
enable students to comprehend the wideranging relevance of R/S factors to health.
The empirical reviews that appear in Part I of this volume reveal that R/S factors are
relevant to virtually every major public health subfield. Some coursework or other
teaching about R/S factors is therefore warranted, and arguably needed, in every
public health subfield. But even as R/S factors need to be given adequate attention,
a public health education must also cover many other important topics, suggesting
that a key consideration is *balance*.

We submit that the most balanced and appropriate manner to address R/S factors
is likely to vary between subfields, and evolve over time, as new research and teach-
ing resources emerge, and as individual instructors develop expertise and gain
resources. Instructors who have never previously taught about the R/S topic might

consider starting small – perhaps devoting five minutes of a lecture and assigning a single reading. In several public health subfields, devoting such a small amount of time might be equally sufficient as a long term strategy, if R/S factors are adequately addressed elsewhere in the student's public health education. But devoting more substantial periods of time to educating about R/S factors – for example, a full lecture – seems especially germane to a few specific public health subfields, such as social epidemiology or other subfields devoted to psychosocial health factors. A fuller treatment – perhaps partly integrated into case study approaches – is also arguably necessary for students learning clinical skills, such as those in medical dual degree programs (Cobb et al. 2012) (see also chapter, "Clinical Practice, Religion, and Spirituality," this volume).

We therefore submit that an optimally balanced long-term school-level strategy to educating public health students about religious/spiritual factors is likely to contain at least two major components: First, R/S factors should be appropriately addressed across the curriculum, with time allocations varying between subfields. The reviews in Part I of this volume offer empirical and conceptual points of departure that we hope will help empower instructors to proceed with balanced integration.

Second, we submit that a stand-alone course about R/S factors, perhaps offered at least once every two years as an elective, is another desirable component of a fully balanced training strategy. Some students are naturally drawn to learning more about R/S factors, and should be supported in doing so in greater depth. Over time, as a natural byproduct of teamwork and collegiality, such students will in turn share their learnings with their peers, first as students, and later as professional colleagues, ensuring that most public health professionals either themselves possess such training, or are closely networked to a colleague who has received richer training in R/S factors.

1 Evidence from National Surveys

The strongest case for addressing R/S factors in academic public health education is arguably derived from the empirical evidence base, theoretical cogency, and practical relevance of R/S factors. These have been documented in Part I and Part II of this volume. But additional encouragement for addressing R/S factors comes from two national surveys that were conducted by a working group at the University of California, Berkeley, with support from the John Templeton Foundation.[1] The results of the surveys support the readiness of public health students and public health educational leadership to move ahead toward devoting fuller and balanced attention to R/S factors in public health training.

Our two national surveys were conducted in the Autumn of 2013 and assessed the views of (i) graduate students and (ii) deans at the 52 US-based schools and

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[1] "On the Viewscreen" (grant #43419).

colleges of public health that were institutional members of the Association of Schools and Programs of Public Health (ASPPH). Both surveys received approval of the UC Berkeley Office for the Protection of Human Subjects, and were conducted through the internet. For each survey, we obtained respondents from about half of the eligible schools/colleges (n = 24, respondents from 46% of institutions). Additional details on sites and methods are provided in this chapter's appendix.

Student Survey We obtained 980 completed responses from public health graduate students enrolled in the 24 participating schools. Of respondents, more than one third (34%) said R/S had never been addressed as a potential causal factor in their education. A majority (53%) reported "too little" coverage of R/S, while some thought coverage was "about right" (42%), and hardly any (1%) reported "too much" coverage (see Fig. 1, panel a). Generally similar proportions were seen among respondents from every school (24/24), with at least 44% from every school reporting "too little" coverage. Majorities or pluralities thought R/S evidence should receive "similar coverage to other health factors" in its relation to health behaviors (66%), clinician sensitivity (62%), mental health (60%), and physical disease/longevity (45%) (see Fig. 2).

Yet out of 980 total student respondents, only 516 (53%) affirmed that R/S topics had received any coverage at all in their public health education. Reported rates of coverage also varied considerably between different R/S-health topics. As shown in Fig. 3, even among those who had heard mention of R/S factors in their public health education, nearly half *of them* (46%) stated that they had never heard any mention of evidence about relations between R/S factors and health *outcomes*, And far more than half (60%) stated that they had never been exposed to information about the frequency of adherence to religion/spirituality in the US population (For information on rates of R/S adherence worldwide and in the US, please see this volume's chapter "Questions on Assessing the Evidence Linking Religion/Spirituality to Health", section on "Q10: Who Is Religious/Spiritual, and In What Ways?").

Responses also revealed a striking relationship between exposure and endorsement. Evidence about R/S-disease/longevity relations is the focus of much of Part I of this book. Among the 512 respondents (53%) who affirmed that they had experienced *any* coverage of R/S, almost all (n = 512) reported both (i) how frequently they had been exposed to the specific topic of R/S-disease/longevity relations (Fig. 3, top right graph), and (ii) their view of how much educational coverage the topic should receive (Fig. 2, top graph). Figure 4 shows the relation between these two variables, revealing two steady trends: The greater a respondent's exposure to the topic of R/S-disease/longevity outcomes, the *less* likely the respondent is to endorse minimal coverage, and the *more* likely the respondent is to endorse coverage that is similar to that received by other well-established health factors.[2]

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[2]The steadiness of these trends – each displaying a monotonic increase or decrease – was unaltered by including within the "never" category an additional 114 respondents who i) reported never having been exposed to R/S factors in their public health education, and who also ii) endorsed a desirable coverage level for R/S-disease/longevity relations.

a. Graduate Students (N=980)

"Overall, in your studies to date in public health, would you say that spiritual / religious factors have received (Too little coverage / About the right amount of coverage / Too much coverage)?"

(Skipped question: 4)
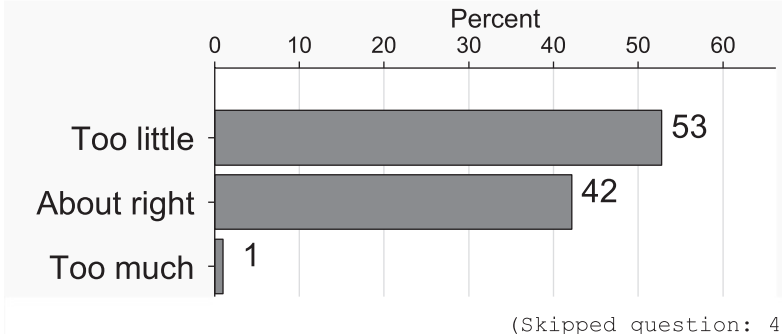
b. School Leaders (N=24)

"Would you disagree or agree that evidence about relations between religion/spirituality and health should be part of public health education?"
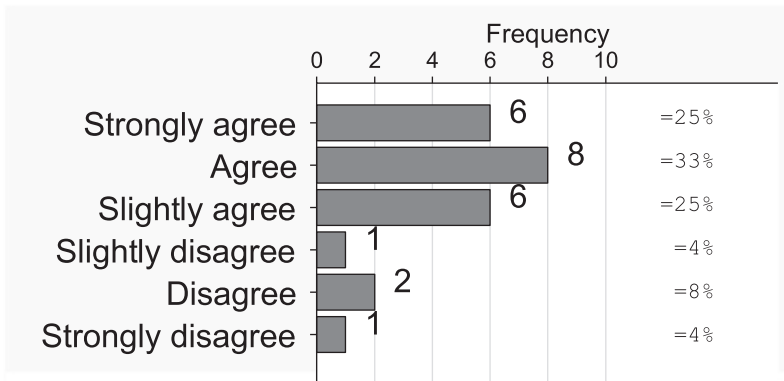
Fig. 1 Responses by public health graduate students and school leaders to questions about attention to spiritual/religious factors in public health education

To our knowledge, our student survey is the first survey ever to target all students nationally in a large stratum of any major academic field. Findings from this survey cannot be deduced as likely to generalize to all public health graduate students nationwide, but they do clearly show that most public health graduate students who are motivated to respond to a survey about R/S factors feel that more attention is needed to the topic, and hardly any feel that the topic is given too much coverage.

"In public health education, how much in your opinion should be taught about each of the following issues related to religion and spirituality (R/S)?"

possible responses

☐ Similar coverage to other health factors
☐ Minimal coverage – just the bottom line
☐ No need to discuss at all

Percent

R/S factors and physical disease / longevity
- Equal: 46
- Minimal: 44
- None: 10
- N=965

R/S factors and mental health
- Equal: 60
- Minimal: 34
- None: 5
- N=963

R/S factors and health behaviors
- Equal: 66
- Minimal: 29
- None: 4
- N=960

Collaboration with faith-based organizations
- Equal: 56
- Minimal: 37
- None: 7
- N=963

Skills for clinician sensitivity to R/S
- Equal: 62
- Minimal: 31
- None: 7
- N=957

Fig. 2 Public health graduate students' (N = 980) views of desirable educational coverage of specific topics about spirituality and religion

The consistency of the pattern of findings across all participating schools provides confidence that these results are likely to generalize to all accredited schools. The openness of the majority of respondents suggests that many students will support efforts to address R/S factors in public health education. The fact that student perceptions were not unanimous also underscores the importance of ensuring that efforts to address R/S factors should be informed by evidence and by clear explanations of the relevance of R/S factors to public health practice and research. Further

"On average, how often have the following aspects of spiritual or religious factors been addressed in (your public health) class lectures or discussions?"
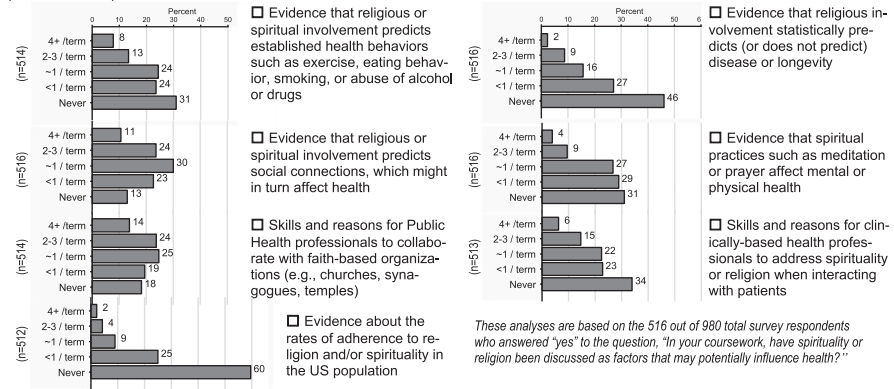
Fig. 3 Frequency of coverage of specific topics in the educational experience of public health graduate students (N = 516) who reported "any" attention to religious/spiritual factors

Fig. 4 Level of recommended coverage by public health graduate students of how religion/spirituality (R/S) is related to morbidity and mortality, by the student's self-reported frequency of prior exposure to the topic in his or her public health education (N = 512)

Coverage of R/S-Morbidity/Mortality:
Knowledge Promotes Endorsement
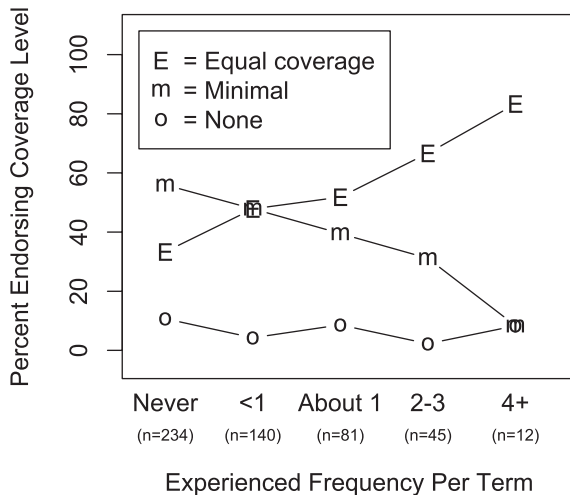
encouragement for inclusion comes from the finding that the more students had been exposed to the R/S-disease/longevity topic, the more they thought it merited similar coverage to other well-established health factors.

School Leader Survey Of 52 deans of ASPPH-affiliated schools, 24 (46%) responded, either directly, or through a designated responder, most often an associate or assistant dean. Most (20/24) agreed that "evidence about relations between

religion/spirituality and health should be part of public health education" (see Fig. 1, panel b), although only 6/24 (25%) reported relevant focused courses at their school. When queried about their needs for integrating R/S into public health teaching, respondents expressed resource needs that included reviews/summaries of evidence, curricular materials/topics/examples, competency lists, and case-based examples. These findings suggest that most leaders of public health are open to addressing R/S factors in public health, though few schools are yet doing so in a systematic way.

2 Needed Teaching Resources and Competencies

Resources now exist to address several of the needs expressed by the public health leaders. We hope that the Part I reviews in the present volume can help supply empirical overviews helpful for designing curricula. Many of this volume's reviews may also be useful as assigned or supplemental course readings. More broadly-focused introductory readings also have a place, and many are cited by chapters in Part III of this volume. One worthy of special mention is Miller and Thoresen's (2003) article introducing a special section of the *American Psychologist* that contains reports from a working group on R/S-health commissioned by the National Institutes of Health Office of Behavioral and Social Sciences Research. Though no longer recent, Miller and Thoresen's (2003) article offers a conceptual introduction to the field that retains a great deal of contemporary relevance and addresses many frequently asked questions. Although more limited in scope, Campbell et al.'s (2007) review supplies a similarly useful conceptual introduction to public health collaborations with faith communities. Finally, a useful contemporary sampling of chapters on diverse R/S-health topics from a public health perspective is provided by Ellen Idler's (2014) edited volume.

Yet in view of the diverse range of public health subfields, and the rapidly expanding research base, many additional teaching resources are clearly needed. The author and his colleagues hope soon to launch a network to facilitate the sharing of curricula among academic public health educators. Several of the following educationally-focused chapters in this volume mention the availability of curricular materials from the authors. As detailed in Box 1, we expect that these resources will also be available online by the time this volume is published.

Some public health leaders who responded to our survey expressed the desire for lists of public health competencies related to religious/spiritual factors. A general list of public health competencies was recently developed by a national panel sponsored by the ASPPH. Calhoun et al. (2012) describe 54 competencies in 7 skill domains that the panel viewed as relevant to graduates of doctoral degree programs in public health (DrPH degrees). Neither spirituality nor religion was mentioned among the domains or competencies, although several domains appear relevant to R/S. Perhaps most relevant to addressing R/S factors are competencies in the skill domain of "Community–Cultural Orientation" (p. 26). Since religion/spirituality is commonly regarded as a human and client diversity factor, the domain of

Box 1: Curriculum Archive for Public Health, Spirituality, and Religion
Academic public health educators may benefit from exchanging materials and ideas with others who seek to teach about religious and spiritual factors in schools, colleges, and programs of public health. A newly organized online archive of educational materials is available at the following website:

- http://viewscreen.berkeley.edu/curricula/

Supplemental materials mentioned in other chapters in Part III of this volume will be available through this archive, or from the chapter authors, or both. These include materials from:

- University of California at Berkeley (see chapter "An Evidence-Based Course at U.C. Berkeley on Religious and Spiritual Factors in Public Health", Box 1)
- Drexel University (see chapter "Incorporating Religion and Spirituality into Teaching and Practice: The Drexel School of Public Health Experience", Box 4)
- University of Illinois at Chicago (see chapter "Online Teaching of Public Health and Spirituality at University of Illinois: Chaplains for the Twenty-First Century", Box 1)

"Professionalism and Ethics" (p. 26) also seems important and relevant (see also chapter, "Social Identity and Discrimination in Religious/Spiritual Influences on Health," this volume). Some competence in legal issues may also be desirable to ensure that graduates are empowered to act in ways that respect constitutional safeguards and other legal requirements (e.g., see Warnock 2009).

At present, however, the breadth and details of public health R/S competencies have seldom been discussed. Offering a definitive list would seem premature. Over time, as the R/S topic is more widely and regularly addressed in schools and colleges of public health nationwide (and perhaps worldwide), recurring themes and approaches may become more apparent. Potential resources for competency formulation efforts include the practice-focused chapters in Part II of this volume, as well as lists of R/S competencies that have been identified in other, health professions, such as psychology (Vieten et al. 2013, 2016; Vieten and Scammell 2015).

3   Summary and Conclusion

Earlier parts of this volume have described the substantial empirical research literature on religious/spiritual factors, and their great relevance to public health practice. This chapter has introduced Part III of this volume, which provides diverse portraits

of how seven top schools of public health are addressing R/S factors in their educational offerings. The early history of such teaching can be traced back several decades, but only now, with the emergence of a large and rapidly expanding interdisciplinary empirical research literature on R/S and health, does the topic appear poised and ready for widespread inclusion in public health professional education and training. Enunciation of formal professional competency lists would be premature at present. But many resources are available to academic public health educators who wish to start new efforts or refine existing ones. The following seven chapters describe a rich set of educational exemplars that is of potential interest to every public health educator.

Appendix: National Survey Methods and Participating Institutions

National surveys of attitudes of public health graduate students and public health leaders were conducted in Autumn 2013 after having received approval of the University of California at Berkeley Office for the Protection of Human Subjects. For each survey, we sought to disseminate materials to the 52 continental US-based schools and colleges of public health affiliated with the ASPPH (at that time called the Association of Schools of Public Health). We obtained respondents to one or both surveys from a total of 35/52 (67%) of schools and/or colleges, with responses to both surveys obtained from 13 schools (25%). Table 1 lists the 52 schools where invitations were distributed and the sites where responses were obtained.

To disseminate invitations to participate in the graduate student survey, we sought assistance from staff at each school, usually staff in a department of student services or student affairs (for neither survey were schools formal survey cosponsors). For the student survey, invitations were disseminated to public health graduate students via email, e-newsletter, or other means by staff at 24 (46%) of schools, and 980 completed individual responses were received. Student participants were nearly two-thirds MPH students (64%) and about one-fifth doctoral students (PhD, 17%; DrPH, 4%), with the remainder in a range of degree programs that include dual degree programs as well as programs leading to doctoral or masters degrees of science (e.g., in biostatistics). Respondents' most common areas of specialization were epidemiology/biostatistics (28%), social/behavioral topics (20%), health policy/management (16%), and environmental health (7%). Slightly more than one-third (36%) were in their first year of studies, with a larger number in their second year (43%), and some also in third year (10%) or higher (10%). Respondents were overwhelmingly female (80%), with nearly half of respondents aged 25–29 years (42%), many also aged 20–24 (28%) or 30–39 (21%), and fewer aged 40 or older (8%). When asked "Which of the following statements comes closest to describing your beliefs?" respondents were almost evenly divided among those indicating they were "religious and spiritual" (33%), "spiritual, but not religious" (31%), and

Table 1 Source sites of participants in national surveys (✓ indicates participation)

Studentª	Leaderᵇ	School or college of public health (site)
		Boston University
		Brown University
		Colorado School of Public Healthᶜ
		Columbia University
✓	✓	Drexel University
	✓	East Tennessee State University
✓		Emory University
		Florida International University
✓	✓	George Washington University
✓	✓	Georgia Southern University
	✓	Georgia State University
✓	✓	Harvard University
		Hunter Collegeᵈ
	✓	Indiana University Purdue University Indianapolis
✓	✓	Indiana University at Bloomington
	✓	Johns Hopkins University
	✓	Loma Linda University
✓	✓	Ohio State University
✓	✓	Rutgers University
		Saint Louis University
		San Diego State University
		SUNY Downstate Medical Center
✓	✓	Texas A&M Health Science Center
	✓	Tulane University
✓	✓	University at Albany SUNY
✓		University at Buffalo SUNY
✓		University of Alabama at Birmingham
		University of Arizona
		University of Arkansas for Medical Sciences
✓	✓	University of California at Berkeley
✓		University of California at Los Angeles
✓	✓	University of Florida
	✓	University of Georgia
		University of Illinois at Chicago
✓		University of Iowa
✓		University of Kentucky
		University of Louisville
✓	✓	University of Maryland
	✓	University of Massachusetts Amherst
✓		University of Michigan School
	✓	University of Minnesota

<div align="right">(continued)</div>

Table 1 (continued)

Student[a]	Leader[b]	School or college of public health (site)
	✓	University of Nebraska Medical Center
		University of North Carolina at Chapel Hill
✓	✓	University of North Texas Health Science Center
✓		University of Oklahoma
		University of Pittsburgh
✓		University of South Carolina
	✓	University of South Florida
✓		University of Texas
✓		University of Washington
		West Virginia University
		Yale University
24	24	Total number (of 52 invited)

[a]Survey of graduate students of public health
[b]Survey of school leaders
[c]Collaboratively sponsored by University of Colorado, Colorado State University and University of Northern Colorado
[d]Collaboratively sponsored by Hunter College, Brooklyn College, Lehman College and City University of New York (CUNY)

"neither religious nor spiritual" (29%), with only a small number self-identifying as "religious, but not spiritual" (5%) or skipping the question (1%).

Surveys of school leaders were emailed directly to each of the 52 deans, who were invited to respond themselves, or else to respond through someone that they designated. Completed leader surveys were returned from 24 (46%) of schools. Of the 24 respondents, 14 (58%) were deans, 7 (29%) were assistant or associate deans, two (8%) were faculty, and the role of one responder was unspecified.

References

Calhoun, J. G., McElligott, J. E., Weist, E. M., & Raczynski, J. M. (2012). Core competencies for doctoral education in public health. *American Journal of Public Health, 102*(1), 22–29. https://doi.org/10.2105/AJPH.2011.300469.

Campbell, M. K., Hudson, M. A., Resnicow, K., Blakeney, N., Paxton, A., & Baskin, M. (2007). Church-based health promotion interventions: Evidence and lessons learned. *Annual Review of Public Health, 28*, 213–234. https://doi.org/10.1146/annurev.publhealth.28.021406.144016.

Cobb, M., Puchalski, C. M., & Rumbold, B. (Eds.). (2012). *Oxford textbook of spirituality in healthcare*. New York: Oxford University Press.

Idler, E. L. (Ed.). (2014). *Religion as a social determinant of public health*. New York: Oxford University Press.

Miller, W. R., & Thoresen, C. E. (2003). Spirituality, religion, and health: An emerging research field. *American Psychologist, 58*(1), 24–35. https://doi.org/10.1037/0003-066X.58.1.24.

Vieten, C., & Scammell, S. (2015). *Spiritual and religious competencies in clinical practice: Guidelines for psychotherapists and mental health professionals*. Oakland: New Harbinger.

Vieten, C., Scammell, S., Pilato, R., Ammondson, I., Pargament, K. I., & Lukoff, D. (2013). Spiritual and religious competencies for psychologists. *Psychology of Religion and Spirituality, 5*(3), 129–144. https://doi.org/10.1037/a0032699.

Vieten, C., Scammell, S., Pierce, A., Pilato, R., Ammondson, I., Pargament, K. I., et al. (2016). Competencies for psychologists in the domains of religion and spirituality. *Spirituality in Clinical Practice, 3*(2), 92–114. https://doi.org/10.1037/scp0000078.

Warnock, C. J. P. (2009). Who pays for providing spiritual care in healthcare settings? The ethical dilemma of taxpayers funding holistic healthcare and the first amendment requirement for separation of church and state. *Journal of Religion and Health, 48*(4), 468–481. https://doi.org/10.1007/s10943-008-9208-8.

Religion and Public Health at Emory University

Ellen Idler and Mimi Kiser

Abstract Emory University has nearly two decades of collaboration between degree programs in public health and theology, in addition to its even longer history of research and service activities at this intersection of disciplines. Students at the Rollins School of Public Health have opportunities to take cross-listed courses in religion and public health, to earn a certificate in religion and health, to choose faith-based field placements in the US and abroad, and to participate in extra-curricular conferences, guest lectures, workshops, and discussion roundtables. In addition, students at the Candler School of Theology may earn a dual degree in public health along with their degree in divinity or theological studies. The objective of these interdisciplinary professional degree programs is to prepare students for work in local and global settings where knowledge and understanding of religious communities can deepen the public health professional's engagement and ability to promote the health of the whole community.

Students interested in getting a Master's degree in public health are almost always people seeking to do good in the world. They have an idea about how communities function in a larger sense, and they want to promote the strengths and well-being of those communities. They often have a good understanding of the "upstream" social

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From this early start, the Interfaith Health Program (IHP) grew and took a national and global perspective on faith communities as significant public health assets. In 1997, with support from the Templeton Foundation, IHP began a Faith and Health Consortium that paired schools of public health with theological schools and seminaries in their areas in five locations around the country, to form partnerships for research, teaching, and practice. IHP moved from The Carter Center to the Rollins School of Public Health in 1999. In 2001, with support from the Centers for Disease Control and Prevention, IHP expanded its programming to develop and conduct the Institute for Public Health and Faith Collaborations. Over 5 years, 78 teams of 400 religious and public health leaders in 24 states around the country, representing not just Judeo-Christian, but also Muslim and Buddhist faith communities, were trained to collaborate with each other for eliminating health disparities in their communities. Ten of these teams, in places such as Minneapolis, Los Angeles, Colorado Springs, and Detroit, continue to work with IHP to mobilize their local networks of trusted faith and community based organizations to reach vulnerable populations with seasonal influenza prevention services.

The Interfaith Health Program was thus already well-established when Emory University launched its 2005–2015 strategic plan with the theme "Where Courageous Inquiry Leads". With proceeds from the sale of a patent for an HIV drug developed by Emory researchers, the university sought to fund proposals for cross-school, interdisciplinary programs. One of the successful proposals was for a Religion and Public Health Collaborative (RPHC) that would broaden the work of IHP to develop curricular and co-curricular programs and a dual degree program for students, seed grants for faculty research, conferences, the hiring of faculty, and support for a major project in South Africa on religious health assets mapping. An RPHC Academic Working Group was formed to develop and coordinate curricular programming activities.

Today IHP and RPHC are close and active partners at Emory. IHP is housed in the department of Global Health at the School of Public Health, and RPHC is now formally affiliated with Emory University's Center for Ethics. While we will describe the IHP and RPHC teaching and student-focused activities in detail below, it is important to point out that such student learning takes place in the context of robust research, scholarship, and practice on the part of faculty. This is the hallmark of a research university – that the boundaries of knowledge are being pushed outward by the same faculty who are sharing that knowledge in the classroom.

Some of IHP's recent projects include: (1) a 6-year long effort with the CDC and the Association of State and Territorial Health Officials (ASTHO) to reach vulnerable, at-risk, and minority populations with annual influenza vaccines; (2) a joint program with St. Paul's University in Limuru, Kenya, in a Faith, Health Collaboration, and Leadership Development Program that brings faith-based and civil society organizations together to address the HIV crisis; (3) a project with funds from the President's Emergency Fund for AIDS Relief (PEPFAR) to map the locations of and

connections between faith-based and civil society organizations providing HIV services in the informal settlements of Nairobi, Kenya; (4) a new project funded by UNAIDS for several countries in Africa that will assess and extend the reach of faith-based organizations providing HIV/AIDS services to stigmatized and hard to reach populations.

The Religion and Public Health Collaborative, for its part, recently completed an edited volume to address the place of religion as a social determinant of health; it was the product of a 3-year long faculty seminar that involved faculty from nearly every school in the university (Idler 2014). Thirty-five scholars from the schools of public health and theology, but also medicine, nursing, law, anthropology, sociology, and ethics were involved; moreover, as individuals with personal faith and/or scholarly interests, they represented all of the world's major faith traditions. The process of developing the volume was truly interdisciplinary and collaborative; we met monthly during those three years to discuss the framing of the topics and the drafts of each chapter. The book argues, (as do some earlier chapters in the present volume), that religious practices and membership in religious communities, have a measurable impact on health, usually, although not always, a positive one. Moreover, a number of chapters focus on the critical institutional level, by profiling faith-based organizations around the world, and enlarging the concept of religious social capital, a contribution that goes beyond the more-frequently studied religious functions of social support and social control. By bringing practitioners from different professional schools together with scholars from the humanities and social sciences, we manifested the broad diversity of perspectives on the subject. The project culminated in a 2-day conference at Emory. Dr. William Foege, who in many ways had set all of these events in motion, was the keynote speaker.

This section has been a brief account of some of the non-teaching work being done by members of the Interfaith Health Program and the Religion and Public Health Collaborative at Emory. Not all of the faculty associated with IHP and RPHC do classroom teaching in religion and public health, of course, but those who do have a broad base of research, scholarship, and practice to draw on, and are networked with many colleagues across the university whose similar interests bring them into contact with students at co-curricular events, as we describe below. Together, the Interfaith Health Program and the Religion and Public Health Collaborative have built an interdisciplinary space at Emory that allows a significant institutional capacity for research and scholarship addressing these issues simultaneously from multiple perspectives. Additional information about Emory's religion/health activities is available online at the the websites of these inter-related institutions (see Box 1).

The next two sections of this chapter discuss teaching efforts grouped into two broad categories: formal curricular offerings that appear on a student's transcript, and co-curricular offerings that deepen and integrate the students' classroom learning experiences and promote the building of networks across schools. The chapter concludes with some reflections on future directions.

Box 1: Web Resources for Further Information About Religion and Public Health Education at Emory University\<return\>
Interfaith Health Program

- http://ihpemory.org/

  Religion and Public Health Collaborative

- http://www.rphcemory.org/

  Dual Degree and Religion and Health Certificate

- http://www.rphcemory.org/students/degree-programs/

  Rollins School of Public Health

- https://www.sph.emory.edu/

  Rollins School of Public Health Practicum Program

- https://www.sph.emory.edu/rollins-life/community-engaged-learning/practicum/employer-info/index.html

  Good Samaritan Health Center

- http://goodsamatlanta.org/about-us/

  Candler School of Theology

- http://candler.emory.edu/index.html

  Candler School of Theology Contextual Education Program

- http://candler.emory.edu/academics/con-ed/index.htm

2 Curricular Offerings

Courses One of the priorities in the 2005 RPHC proposal was to develop new courses in the area that could be taken by students in multiple professional and academic (graduate) degree programs at Emory, including Master's degree students in public health and theology, and PhD students in the humanities and social sciences. Thus it was desirable (if time-consuming) to have these courses cross-listed, so that students would be aware that they were being offered, and the classes would have good representation from different schools. RPHC offered faculty who were willing to develop new courses support for their preparation. Table 1 shows a list of courses that have been taught, the faculty member's department, and the other programs with which it is cross-listed. Courses marked with an asterisk are still being taught regularly.

Table 1 Emory University Courses in Religion and Public Health, 2008–2016

Course	Instructor's department/school	Cross-listed with:	Cross-listed with:
Health and Healing: Understanding the Role of Religion	Graduate Division of Religion	School of Public Health	School of Nursing
Health as Social Justice*	School of Public Health	School of Theology	School of Nursing
Responding to Suffering	School of Nursing	School of Theology	
Faith and Health: Transforming Communities*	School of Public Health	School of Theology	
Religion and Public Health*	Graduate School Sociology	School of Theology	School of Public Health
Topics in Religion and Public Health: AIDS and Reproductive and Sexual Health*	School of Public Health	School of Theology	Graduate Division of Religion
Pastoral Dimensions of Biomedical Decisions	School of Theology		
African Traditional Healing*	School of Theology		
Ethnography, Reproductive Health, and Religious Ethics	Graduate Division of Religion		

*Courses that were continuing to be taught regularly as of 2017

The authors of this chapter are instructors for three of the regularly-taught courses. To illustrate the different content and approaches of faculty, we will describe two of the courses in detail. In the Fall 2015 Religion and Public Health course (Idler) there were 11 graduate students – two from public health, two from religion, one dual degree, one from theology, and five from sociology (one of whom already had an MPH), so a mix of professional and academic graduate programs was represented. This is key to the quality of class discussion and the success of the course. One pedagogical objective for the course was health research literacy; weekly assignments required students to "extract" an empirical research article that was assigned for that week. The reading list reviews theoretical and research literature on the social determinants of health in general, and on religion's role as a determinant of health in particular. Another objective was to look for these issues in daily life, achieved through a weekly "Minute for Media" in which a student talks about a contemporary news story and its relevance to religion and public health. Another objective was to have the students apply their new knowledge to either research or practice; for a final project they wrote a paper and did a class presentation.

The final projects were wide-ranging and exciting. One student (Sociology PhD, with previous MPH) did a qualitative analysis of references to religion and spirituality in interviews with public health, religious, and faith-based organization leaders of HIV programs for LGBT youth in Detroit. Another student (Master of Divinity) designed an 8-week Bible-based program on preventing domestic violence for her upcoming congregation-based contextual education requirement. A third student

(MDiv/MPH dual degree) analyzed General Social Survey data on religious affiliation, gun ownership, and attitudes toward gun control. Other equally relevant and interesting topics included end of life care, faith-based organizations' role in disasters, a history and theology of Habitat for Humanity, religious not-for-profit hospitals, and the health consequences of the *halal* diet. As in previous years, there were students with diverse religious backgrounds, including Islam, Hinduism, Seventh Day Adventism, and some with very skeptical attitudes. Also as in every previous year, it was a privilege to be present as these students learned to see each other's perspectives across so many differences.

The second author (Kiser) began teaching Faith and Health: Transforming Communities in the spring of 2003, and has taught it nearly every year since. Its primary listing is in the school of theology with a cross listing in public health. Course enrollment averages between 20 and 25 graduate students, the majority being theology students, but some public health students also enroll. Some challenges to building an interdisciplinary learning environment have included the campus geographic distance, conflicts in course scheduling, and course credit hours misfit. The course has an applied public health practice and health equity orientation, inviting students to first think in new ways about what health means and then conceptualize the role of religion at community level in a way that addresses their new view of health. Readings each week represent the different fields, public health or social sciences matched with a theological, ecclesial, or religious studies. New meanings of health are explored through personal narrative and image in the first half of the semester. The second half is devoted to application of an expanded view, its implications for leadership, and their evolving vision of healthy, transformed communities. In interdisciplinary groups the students analyze a local agency and make recommendations for the optimum alignment of religion and health. The final assignment is an opportunity to integrate course learning on religion and health by designing something that is practical, resonates with their individual vision, and is relevant to their leadership strengths and goals. Options for this paper include but are not limited to the following forms (a) an action memorandum/policy recommendation, (b) grant proposal, (c) a job description and the associated programmatic plan or (d) community scale collaborative strategy with persuasive supporting discussion for the proposal.

Religion and Health Certificate   Students at both the Candler School of Theology and the Rollins School of Public Health who want to concentrate in the area of religion and health can take a set of courses and earn a Religion and Health Certificate with their degree. It is a university-wide certificate designed to accommodate existing courses and credit hour and other degree requirements common across the schools. This is another mechanism, in addition to cross-listing, by which students can discover courses in another program that are relevant to their interests. To complete the certificate, the student must take one of three core courses and 9 h of elective courses, complete a practice or fieldwork component, attend co-curricular programs, and write an integrative paper/thesis.

Dual Degree Program A final innovation in the curriculum initiated by the RPHC was a dual degree program between the Candler School of Theology and the Rollins School of Public Health. Candler students in either the Master of Divinity or Master of Theological Studies programs can opt to complete a second Master's degree in public health in a 12-month compressed time frame, instead of the usual two academic years. Enrolled Candler students may apply to any of seven departments at RSPH, including Behavioral Science and Health Education, Global Health, and Epidemiology. These dual degree programs are unique in that they bring together the health sciences, the social sciences, and religion to teach students about the personal, communal, institutional and social dimensions of health.

The 2005 strategic initiative funding allowed the development of a number of new courses in different schools across the university, which was the necessary basis for the creation of the certificate and dual degree programs. The courses anchor the program in the classroom, providing a sustained meeting place for students from very different schools to grow in their knowledge of each other, each other's training, and the diverse institutions to which they are headed for their careers. As they assume leadership roles in their institutions, these graduate school experiences may pave the way for seeing potential alignments with other sectors, and the confidence to reach out across what are often very large divides.

Off-Campus Practice and Fieldwork Experiences As professional schools, both Rollins and Candler require off-campus learning experience for credit toward the degree. At Rollins this requirement is called the Practicum. All MPH students must complete 200–400 h of applied experience outside the classroom in a health care or public health institution, a nonprofit organization, or an NGO. Students with an interest in religion and public health can choose to do their fieldwork at one of the many faith-based organizations in Atlanta or in global settings that provide housing for the homeless, shelters for domestic violence victims, medical care for the indigent, and care for the mentally ill. One recent MPH graduate did her practicum at the Good Samaritan Health Center, a faith-based primary care clinic with sliding scale fees in underserved northwest Atlanta; her project was the development of a Community Health Ambassador program to train adolescent girls to be peer health educators.

At Candler, off-campus fieldwork is called Contextual Education. MDiv students are required to do 2 credit hours in each of their first four semesters; in the first year they work at sites serving populations of prisoners, refugees, senior citizens, and youth – (some of these settings also serve as placements for Rollins students). In the second year they are placed in congregations in the metro Atlanta area. These experiences of "education in context" are supervised by professionals who work at the sites. Because the contextual education experiences are an invaluable addition to classroom discussion for public health and social science students as well as theology students, RPHC created online population-specific public health modules for each of the populations Candler students were working with, to be shared by the site supervisors.

We see further opportunities for aligning public health and theological education in off-campus settings. In the coming year we will be running a semester-long Academic Learning Community for faculty who are involved with fieldwork in both schools. The purpose is to improve interdisciplinary experiential learning administrative structures and further extend and integrate the interdisciplinary classroom pedagogies into applied settings. We are pleased to be able to involve four doctoral students who have all had religion and public health interdisciplinary learning experiences at Emory and can provide insights on pedagogy and potential PhD student mentoring roles in the design outcome.

Summer Program in Kenya Faculty from Emory and St. Paul's University in Limuru, Kenya, led by John Blevins, designed and conducted over three summers an interdisciplinary program in religion, public health, and development studies. This "course" represents a unique approach to interdisciplinary contextual education, offering classroom learning and reflection (1 week on both ends of their time in the field), 8 weeks of full time field placement, and an international context to teaching and learning involving students and faculty from both universities. In addition to the cultural contextual richness of this learning, a distinctive is the shared classroom learning between Emory and St. Paul's students from public health, theology, urban leadership, and community development studies. The combination of intensive seminars on either end of a long field placement guided by critical thinking and reflection provides a unique opportunity for integrative and transformative learning (Blevins et al. 2012).

3   Co-curricular Offerings

The Religion and Public Health Collaborative organizes events for students and faculty outside the classroom, holding an event on average once per month. Besides IHP, RPHC partners with other units on campus, including the Center for Ethics, the Department of Sociology, the Center for AIDS Research, and the Center for Race and Difference, to pool resources and reach additional audiences. All events are advertised to our Religion and Public Health listserv, which includes students and faculty on campus, as well as community leaders and partners; flyers are also placed at key locations on campus. Every event is free of charge. As the School of Public Health and the Center for Ethics and Candler School of Theology are at opposite ends of campus, we diversify the location of events to reach as many people as possible.

Community of Scholars Reception   Each fall we welcome everyone back to campus with a reception, including refreshments and usually a panel discussion. In recent years, we have invited students who participated in the IHP summer program in Kenya to speak about their experiences. While all students in the program had similar classroom experiences at St. Paul's University and with St. Paul's students, the Emory students were posted to different fieldwork sites, giving them very differ-

ent perspectives on the roles of faith-based organizations in the AIDS crisis in Kenya. In other years we have invited students involved in the dual degree program to speak about their training, and their work following graduation.

Conferences   The national conference on the book *Religion as a Social Determinant of Public Health*, held in 2014, has already been mentioned. In this 2-day event, called "Practices, Peoples, Partnerships, and Politics", there were nine outside speakers in addition to the 35 Emory authors and additional faculty chairing sessions. Invited guests, in addition to William Foege (Gates Foundation), were David Williams (Harvard University), Nancy Ammerman (Boston University), Linda Waite (University of Chicago), Ahmed Ragab (Harvard University), Ted Karpf (World Health Organization), Amy Laura Hall (Duke University), Lydia Ogden (Centers for Disease Control and Prevention), and Rev. Dr. Emilie Townes (Vanderbilt University). Each of these noted scholars spoke about their own work and its relationship to specific sets of chapters in the book; the chapter authors then responded with their own reflections.

An earlier conference (2010) called "Beliefs and Barriers" was co-sponsored with the Center for Ethics, and focused on religion's role in end-of-life care decisions. Our invited speakers were Tracy Balboni and Andrea Phelps (Harvard University), authors of a then-new study (Phelps et al. 2009) with the disturbing finding that Stage 4 cancer patients who used more religious coping had *more negative* outcomes in that they were less open to hospice care and experienced more futile, expensive aggressive treatment. Other speakers were local Atlanta religious leaders from a diversity of faiths, and Myra Christopher, Center for Practical Bioethics, who spoke about her Robert Wood Johnson Foundation project to bring discussions about end of life planning to local congregations.

An even earlier "think tank" conference in 2007 was called "Maps and Mazes: Critical Inquiry at the Intersections of Religion and Health." It brought together faculty from Emory with members of the African Religious Health Assets Program to discuss approaches to studying religion as a health asset. Panels of presenters and "provocateurs" addressed such theoretical and methodological topics as the concepts of vitality versus pathology as a framework for understanding religious health assets; the "healthworlds" of the body; critical issues in participatory research; and interreligious and public health literacy. As the invitation stated, "Urgent global and local humanitarian crises in HIV/AIDS, tuberculosis, malaria, safe water, women's health, poverty, human migration, the environment require both innovative thinking and a reorientation of the way in which we understand the intersections of religion and health."

A fourth conference focused on Emory-based research in religion and health. RPHC provided seed grant funding for a number of projects, some of which were carried out in part or wholly by students. Topic areas included a safe water project in Haiti, a meditation program for dementia patients, religion and maternal-infant outcomes in Latinas, development of instruments for assessing compassion meditation, the theology of African religious healing traditions, church-based networks for

People Living with HIV/AIDS, the sources of African American health disparities in Georgia, the role of religion in genomic counseling, ways to reduce adolescent sexual risk behavior, religion and teen childbearing in the South, and many others. Posters reporting on the projects were displayed at a conference, and a panel including the President and Provost of the University, and the Deans of the schools of public health and theology commented on their efforts, with great enthusiasm; James Curran, leading epidemiologist of the AIDS epidemic, and Dean of the Rollins School of Public Health concluded his remarks by saying, "Religious literacy is a 21st century skill."

Guest Lectures In partnership with others, RPHC has sponsored leading speakers to come to campus to present their work. With the Center for Ethics, RPHC ran a Public Health, Religion, and Ethics (PHRE) series of public lectures. Our first speaker was President Jimmy Carter, who spoke about the role of the church in the community he grew up in, and more broadly, about religion's role in global health. Other speakers in this series have been Helene Gayle, Executive Director of CARE, who spoke about gender, reproductive health, and religion; Laurie Zoloth, then-current President of the American Academy of Religion, who spoke on public health and social justice; and Allan Kellehear, British author of *A Social History of Dying*, and advocate for community-based (including faith-based) care for the dying. With the Center for Race and Difference we sponsored Dr. John Wallace, professor of social work at the University of Pittsburgh and founder of Homewood Children's Village. With the Department of Sociology and the Center for AIDS Research, we sponsored Jenny Trinitapoli, University of Chicago sociologist and author of *Religion and AIDS in Africa*.

Religion and Health Roundtables Our roundtables have been organized by several members of the RPHC Executive Committee, who bring a topic and some background information for discussion. Topics are chosen for their current interest and controversy; discussions have been lively and more often than not have centered on how religion is often a problem for public health practice. Some of the topics have included religious grounds for vaccination refusal (focus on measles); provisions for religion in the Affordable Care Act (mandate exemption, the Hobby Lobby case, and Christian health insurance); the implications of unlimited life extension; and religious sources of stigma in HIV/AIDS.

Workshops To take good advantage of the presence of several of our distinguished speakers, we have asked them to stay for 2 days and participate in a workshop following the lecture. Some examples include: workshop with John Wallace and local clergy and theology students on congregation involvement in public health programming; workshop with Jenny Trinitapoli, faculty, and graduate students on ethical issues in global health research and practice, particularly in low-resource communities; workshop with Allan Kellehear and resident chaplains and clinical pastoral education students on end-of-life counseling. Other workshops have been put on by local faculty and graduate students, including one intended to elicit the

range of attitudes regarding abortion and reproductive rights, and the role played by religion, a program called Values Clarification and Attitude Transformation (VCAT).

Films As part of the Public Health, Religion, and Ethics series, RPHC and the Center for Ethics put on several film nights with episodes of the BBC series "Call the Midwife". This series is based on the post-World War II London memoirs of one of a group of nurse midwives in the National Health Service who were sent to live and work with a group of Anglican sisters who were also midwives, in one of London's poorest neighborhoods. The shows raise many ethical issues concerning abortion, alcoholism, domestic violence, disabled children, and suicide, that are approached in different ways by the nuns and the secular nurses, not necessarily in ways you would expect.

Emory was the site of the world premiere of the film "Yemanjá: Wisdom from the African Heart of Brazil", a documentary narrated by Alice Walker about the Candomblé religious tradition in Brazil, and its female leaders. RPHC and numerous other groups around campus were co-sponsors.

Planning is underway for events for the coming academic year. As in the past, our students are a key target audience, but what makes these events especially successful is that Emory faculty and Atlanta community members are present as well, allowing significant networking to take place.

4   Expectations for the Future

In our efforts at Emory University's Rollins School of Public Health, the Interfaith Health Program, and the Religion and Public Health Collaborative, we take for granted the importance of seeing religion as one of the social determinants of population health, and the ways in which it is mingled with the political and economic determinants that create and maintain health disparities (see also the present volume's chapters entitled "Social and Community-Level Factors in Health Effects from Religion/Spirituality" and "Social Identity and Discrimination in Religious/ Spiritual Influences on Health"). Churches, mosques, synagogues, and temples will unquestionably be significant places of gathering and sources of institutional social capital in communities around the world where our public health students will work. Students who are unfamiliar with this important sector of the community will have less capability as professionals to navigate the complex social and cultural terrain in which they will work. In situations where the interests of public health and religion are in alignment, as they often are, this means forgoing the possibility of working with valuable allies in the community. Where public health and religious interests are not aligned, the risk of failure to achieve public health goals is even greater.

Our commitment to including religion in the public health curriculum is a commitment to providing our students with the best possible education and preparation for their life's work in public health.

Looking ahead years from now, we see our efforts as investments in the future of the institutions that promote health and well-being in their communities. Students in public health, theology, and religious studies who are engaging with each other in Emory classrooms today will be the leaders of their fields tomorrow. Their familiarity with the discourse, concerns, and professional training of those in the other programs will enable them to see the issues from their own and the other's point of view, giving them an ability and perhaps the confidence to reach out and form partnerships. By sanctioning those conversations across what is often a great divide between religion and public health, we hope that we are instilling a sense of openness and willingness to build bridges. The public health community and the faith community have a lot to offer each other in promoting the health of the populations they serve; we hope that our graduates will leave our program with a sense of trust, a willingness to cooperate, and the ability to find a common language to do so.

5   Summary

Emory University provides training for future public health professionals that includes consideration of religion as one of the important "upstream" social determinants of health along with the other macrosocial forces of economics, politics, and the state. It also exposes students to religious practice and institutions that can and often do play a role as locations for "downstream" public health interventions and programs. Students in both public health and in theology can take interdisciplinary courses, participate in workshops and lectures, and engage with local and global communities in supervised fieldwork in ways that will prepare them for work in the real world, with other actors from all sectors. The range of programs and training experiences available at Emory are the legacy of visionary leaders at The Carter Center, a legacy that has been well- supported within the University by an atmosphere of intellectual openness and respect that we hope our students will carry with them in their work.

References

Blevins, J., Kiser, M., & Mombo, E. (2012). *Negotiating differences: Why theology is important for interdisciplinary field placement in global contexts*. IHP Archive: http://ihpemory.org/ihp-archive/. Accessed 2 Dec 2016.

Idler, E. L. (Ed.). (2014). *Religion as a social determinant of public health*. New York: Oxford University Press.

Phelps, A. C., Maciejewski, P. K., Nilsson, M., Balboni, T. A., Wright, A. A., Paulk, M. E., et al. (2009). Religious coping and use of intensive lifeprolonging care near death in patients with advanced cancer. *Journal of the American Medical Association, 301*(11), 1140–1147. https://doi.org/10.1001/jama.2009.341.

The Carter Center. (1989). *The church's challenge in health*, *Occasional paper series, vol. 1, no. 2*. Atlanta: Carter Center of Emory University.

The Initiative on Health, Religion and Spirituality at Harvard: From Research to Education

Tyler J. VanderWeele, Michael J. Balboni, and Tracy A. Balboni

Abstract We describe the formation of the Initiative on Health, Religion, and Spirituality at Harvard University including the teaching, research, and institutional efforts at both the Harvard T.H. Chan School of Public Health and the Harvard Medical School. A course has been offered on Religion and Public Health every second year at the School of Public Health and training programs for medical students, school of public health students, and residents are in place. Numerous students have been involved in the initiative's research projects. The initiative has also hosted numerous seminar series and conferences on religion, spirituality and health, and numerous students have participated in these as well. Research in public health has focused on religion and population health including the protective associations between religious service attendance and longevity, suicide, and depression, along with the use of longitudinal cohort studies to establish evidence for causality. Research within medicine has focused on the role of religion, spirituality, and spiritual care in end of life settings for patients, physicians, nurses, and clergy. The future goals of the program include establishing a stronger institutional base throughout Harvard University; sustained research, teaching, and training, and permanent funding for this; and broad influence on public health and medical teaching and practice within the United States and worldwide.

Keywords Religion · Spirituality · Health · Harvard · End-of-life · Mortality · Depression

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1 Introduction

This essay will discuss the formation of the Initiative on Health, Religion and Spirituality at Harvard University, along with some of the initiative's current activities and future hopes and goals, including effects on the educational experiences of public health and medical students at Harvard. The Initiative is a joint effort between faculty at the Harvard Medical and the Harvard T.H. Chan School of Public Health with the hope of eventually including faculty throughout Harvard University. Research and education on religion, spirituality, and health at Harvard has taken place for some time, led by several prominent physicians and scholars. Herbert Benson has been a pioneer of the field of mind-body medicine, and was founder of the Benson-Henry Institute for Mind Body Medicine. Armand Nicholi, a prominent psychiatrist at Harvard, taught one of the most popular courses at Harvard Medical School and the College for two decades, which contrasted the worldviews of Sigmund Freud and C.S. Lewis, which also led to a book and an acclaimed PBS special. Another Harvard psychiatrist, John Peteet, began publishing on religion and mental health in the early 1980s and has, since then, published dozens of journal articles and six monographs and edited books. Dr. Peteet continues to serve as a critical contributor and supporter of current efforts. Arthur Kleinman, a medical anthropologist and psychiatrist, has engaged these issues throughout his 40-year career. In 2007 he co-led, with theologian Sarah Coakley, a course on spirituality and medicine that brought together students from the Harvard Medical School and Harvard Divinity School.

Starting in 2009, a more systematic effort was made to bring together scholars on health, religion, and spirituality throughout the University and to begin a formal initiative to encompass research, teaching, and medical and public health training, and to also develop stronger institutional support. The various sections of this essay will describe developments related to each of these efforts, with particular emphasis on implications for education and teaching, both for individual students and institutionally. Research of course contributes to education by providing important evidence to support inclusion of issues of religion and spirituality in coursework and by providing students and post-doctoral fellows with research and learning opportunities. Institutional and financial support is essential in establishing longer-term and widespread educational opportunities in this area.

2 The Formation of the Initiative on Health, Religion, and Spirituality at Harvard

The Initiative on Health, Religion and Spirituality at Harvard came out of collaboration between Drs. Michael and Tracy Balboni at Harvard Medical School and Dr. Tyler VanderWeele at the Harvard T.H. Chan School of Public Health. We describe a bit about our own backgrounds, to illustrate how religion/spirituality factors are

gaining recognition as relevant to numerous health-related fields, and to trace the initial efforts to establish the initiative. Tracy Balboni had been trained at Harvard Medical School as a palliative care physician and radiation oncologist, and subsequently also completed a Masters in Public Health at the Harvard School of Public Health in 2006. In 2005, Tracy Balboni began research on the role of religion and spirituality in end-of-life care. Using data from the Coping with Cancer Study led by Dr. Holly Prigerson, Tracy Balboni began reporting findings on the role of religion and spirituality in end-of-life settings. She reported that provision of spiritual care from the medical team to patients in end of life settings resulted in greater use of hospice, fewer aggressive treatments and higher quality of life at the end of life (Balboni et al. 2010), but that patient religious coping was itself associated with more aggressive treatment at the end of life (Phelps et al. 2009). Around the same time she also designed and began the implementation of the Religion and Spirituality in Cancer Care (RSCC) study which was a mixed-methods examination of physician, nurse, and patient views, experiences, and preferences with spiritual care at the end of life. Michael Balboni is a licensed minister and completed doctoral studies at Boston University writing on a theological analysis of the culture of medicine. He completed doctoral studies in theology at Boston University in 2011 and had already by this time, begun to join Tracy Balboni in the empirical research on health, religion, and spirituality.

Tyler VanderWeele completed his doctoral studies in 2006 at the Harvard School of Public Health and served on faculty at the University of Chicago from 2006 until 2009 when he returned to Harvard to join the Epidemiology faculty at the School of Public Health. In early 2010, he joined Michael and Tracy Balboni as senior epidemiologist and statistician in their research on religion and spirituality in end-of-life care. The Balbonis had by that time completed the Religion and Spirituality in Cancer Care survey. Their initial work on the results of the survey suggested that the majority of patients, physicians and nurses believed that routine spiritual care would have a positive impact on patients (Phelps et al. 2012), that it was important and appropriate, but that it was nevertheless offered very infrequently (Balboni et al. 2013a, 2011a). The strongest predictor of a nurse or physician providing spiritual care was having training to do so, but training was itself very uncommon (Balboni et al. 2013a); other barriers included lack of private space, lack of time, and concerns about professional role and power inequities (Balboni et al. 2014). Spirituality and religious coping were associated with higher quality of life (Vallurupalli et al. 2012), but spiritual concerns were associated with worse quality of life (Winkelman et al. 2011). Further analyses of the Coping with Cancer data suggested that spiritual care provided by the medical team decreased aggressive treatment and increased hospice but spiritual care by a patient's religious community increased aggressive treatment and decreased hospice (Balboni et al. 2013b), perhaps indicating that when spiritual care and medical care are not integrated, and the prognosis is not taken into account in spiritual care, patients may be more likely to believe a miracle is possible and that all aggressive treatment options ought to be sought out. Because of the high cost of aggressive treatment at the end of life, cost analyses suggested that if spiritual care by the medical team were routinely provided at the end of life

for cancer patients, then, in addition to better patient quality of life at the end of life (Balboni et al. 2010), the overall cost saving in the United States would be projected to be approximately \$1.4 billion (\$2441 × 562,340 annual cancer deaths; Balboni et al. 2011b). The cumulative effect of the research made clear the importance of including further education and training efforts on religion and spirituality within health and healthcare. Numerous students were involved in the research.

The outreach to students expanded yet further when, in 2011, Dr. VanderWeele received a grant from the Templeton Foundation to create a seminar series on Religion and Public Health at the School of Public Health, to develop a course on religion and public health, and to begin research on religion and population health. The seminar series brought prominent scholars who had carried out important research at the interface between religion and health. Speakers included Drs. Ellen Idler (Emory University), Neal Krause (University of Michigan), Peter Van Ness (Yale University), Marc Musick (University of Texas at Austin), Harold Koenig (Duke University), Michael McCullough (University of Miami), Jennifer Allen (Tufts University), Everett Worthington (Virginia Commonwealth University), Tracy and Michael Balboni (Dana Farber Cancer Institute), and Kenneth Pargament (Bowling Green State University).

In 2011, Drs. Balboni and VanderWeele began conversations on establishing an interfaculty initiative at Harvard on Health, Religion, and Spirituality. The preliminary vision for the initiative was that it would span the schools of Harvard University. A series of meetings were convened in 2010 and 2011 with faculty participating from Harvard Divinity School, Harvard Medical School and the Harvard School of Public Health. A smaller committee, consisting of faculty from all three schools, was formed to discuss possible models for the initiative.

These conversations led to application in 2012 by Drs. Michael and Tracy Balboni to the Templeton Foundation for a grant to provide seed funding for the development of a Program on Health, Religion, Spirituality at Harvard. The grant was to supply funding to all three participating schools and would establish an additional seminar series, jointly coordinated by the Medical School and the Divinity School, to run in parallel with that at the School of Public Health. The new seminar series was to bring to Harvard theologically trained physicians to speak to issues of the role of religion and spirituality within medicine. Each speaker would give a lecture at the Divinity School, a seminar in one of the relevant Medical School Departments as well as present at Grand Rounds on clinical practice. The grant was funded in 2013 and six speakers subsequently participated including John Tarpley (Vanderbilt University), John Swinton (University of Aberdeen), Daniel Sulmasy (University of Chicago), Farr Curlin (Duke University), Dan Blazer (Duke University), and Arthur Kleinman (Harvard University). The lecture series attracted nearly 1500 Harvard faculty and students (and thousands have since watched videos). The lectures delivered at the Grand Rounds presentations were an important part of the series as it brought this topic to faculty and residents who do not typically hear about research in this area, and included speakers from leading Harvard

teaching hospitals such as Massachusetts General Hospital, Brigham and Women's Hospital, Beth Israel Deaconess Medical Center, and Dana-Farber Cancer Institute. The combination of seminar series and the Grand Rounds, in conjunction with the seminar series at the School of Public Health brought even greater levels of attention to the teaching and research on religion and spirituality taking place at Harvard's Medical School and School of Public Health.

The smaller joint committee to consider the development of the initiative on Health, Religion, and Spirituality at Harvard convened on a number of occasions. In discussions among the committee it became apparent that the extent of overlap in research interests between the Medical School and the School of Public Health on the one hand, and the Divinity School on the other, were not as substantial as might have been hoped. In conversations with Harvard's Vice-Provost of Research, Richard McCullough, it was suggested that the initiative begin where the research synergies were stronger, namely between the School of Public Health and the Medical School, and that extension to other schools at Harvard, including the Divinity School and the School of Arts and Sciences, take place gradually as research and teaching opportunities naturally arose. The initiative's focus thus shifted to be principally that of the Medical School and the School of Public Health with plans for expansion to other schools at Harvard in the years that followed. In November of 2013, the Harvard Medical School deferred a decision on granting formal joint-school recognition on the grounds of too much reliance on a single funding source (the Templeton Foundation) but was supportive of the work and encouraged its development. In conversations with relevant faculty members, the initiative was named "The Initiative on Health, Religion, and Spirituality at Harvard University."

A faculty executive committee was formed consisting of senior faculty throughout Harvard University who had had significant involvement with, or interest in, research and teaching on religion and health. The initial executive committee consisted of Emmanuel Akyeampong (Arts and Sciences), Susan Block (Dana Farber Cancer Institute), Gregory Fricchione (Massachusetts General Hospital), Ted Kaptchuk (Medical School), Arthur Kleinman (Arts and Sciences), David Silbersweig (Medical School), and David Williams (Public Health). Howard Koh (Public Health) later joined the executive committee in 2015. Other faculty participating in the initiative include Jennifer Allen (Tufts), Terry Bard (Beth Israel Deaconess Medical Center), Jorge Chavarro (Public Health), Michael D'Ambra (Medical School), John Denninger, (Medical School), Andrea Enzinger (Medical School), Cheryl Giles (Divinity School), Nancy Kehoe (Cambridge Health Alliance), John Knight (Medical School), John Peteet (Medical School), Ahmed Ragab (Divinity School), David Rosmarin (Medical School), Alexandra Shields (Harvard Medical School), and Patrick Smith (HMS Center for Bioethics). A website for the initiative including faculty, events, educational programs, and core areas of research (http://projects.iq.harvard.edu/rshm/home) was launched in the Fall of 2013 and new plans put in place for further expansion.

3 The Current Activities of the Initiative on Health, Religion, and Spirituality at Harvard

3.1 Courses

Two courses and one residency training program are offered at the Harvard School of Public Health and Harvard Medical School as part of the Initiative's educational aims. Beginning in 2015, Dr. VanderWeele has taught a winter session course on "Religion and Public Health" offered at the School of Public Health every second year. The course provides an overview of the current state of research on the relationship between religion and health. Content includes empirical studies showing religious participation has protective associations with all-cause mortality, depression, suicide, cancer survival, and other health outcomes. The course covers research that has been done in this area, discusses some of the measurement and methodological challenges faced by this research, and explores future research directions in religion and health as well as questions of relevance to public health. Specific topics include religious participation and longevity, religion and mental health, religious communities and public health partnerships, and religion and spirituality in end of life care. Attention is given throughout to questions of measurement, study design, and methodology, and the challenges in conducting rigorous research in this area. A fuller description of the content of the course on Religion and Public Health has recently been published in the *American Journal of Public Health* (VanderWeele and Koenig 2017).

Drs. Peteet and D'Ambra have offered for a number of years a course on "Spirituality and Healing in Medicine." In 2015, Rev. Gloria White-Hammond, MD, from Harvard Divinity School, became a co-director of the course with Drs. Peteet and D'Ambra. The course is actively attended by students not just from the Medical School, but also the School of Public Health and the Divinity School. The course provides students with a framework for understanding the spiritual dimension of issues they will confront in the practice of medicine. These include patients' struggles with questions of faith, spiritual approaches to problems such as life threatening illness or addiction, and the personal commitments that underline professionalism. Faculty offer a model for approaching these issues, lead discussions using clinical examples, and facilitate opportunities for extra- classroom experiences, such as working with hospital chaplains or with spiritual or faith-based programs of healing. Invited presentations from chaplains, clergy and physicians explore the implications for medicine of various religious and secular traditions, and issues surrounding the role of the clinician in responding to spiritual needs.

Dr. Peteet also offers a residency training program on Spirituality, Religion, and Psychiatry. The program aims to help residents better understand the role that spirituality and religion play in their patients' lives, and their own role in dealing with religious and spiritual aspects of the problems that bring them to treatment. Sessions include spirituality from a scientific perspective, the formation and implications of

the individual's representation of God, and a framework for approaching spirituality in practice, as well as case studies and class discussion.

Various other courses at the Harvard Divinity School and School of Arts and Sciences related to religion and health are also described on the Initiative's website.

3.2   Research

The Initiative's research on the role of religion and spirituality in end-of-life care and on religion and population health has continued to expand.

Dr. VanderWeele, working with School of Public Health post-doctoral fellow Dr. Shanshan Li, published a number of studies in 2016 on religious service attendance and various health outcomes using data from the Nurses' Health Study (Li et al. 2016a, b; VanderWeele et al. 2016a). The papers constituted an advance over prior literature in having repeated measurements of service attendance and health over time, having a very large sample size, the capacity to control for numerous potential confounding variables, and the use of contemporary causal modeling. Repeated measures designs are important to help rule out the possibility of reverse causation – that the associations between religious participation and health might arise only because it is only those who are healthy who are able to attend religious services. The results indicated that frequent religious service attendance was associated with an approximately 30% reduction in all cause-mortality during follow-up (Li et al. 2016a), a five-fold reduction in the likelihood of suicide (VanderWeele et al. 2016a), and a 30% reduction in the incidence of depression (Li et al. 2016b). Other research on religion and population health has included similar longitudinal analyses on mortality with the Black Women's Health Study suggesting that it is principally service attendance rather than religious or spiritual identity, or religious coping, or private practices which are most strongly associated with lower mortality (VanderWeele et al. 2016b). Further papers have included a tutorial on addressing methodological challenges such as reverse causation and feedback in religion and health research (VanderWeele et al. 2017) and a review of the state of the evidence of research on religion and population health (VanderWeele 2017). The issue of causal inference has been a difficult one in research on religion, spirituality and health, and public health can contribute considerably in this regard (see also chapter on "Weighing the Evidence: What is Revealed by 100+ Meta-Analyses and Systematic Reviews of Religion/Spirituality and Health?," this volume). Issues of methodology and causality formed an important part of the course on religion and public health described above. It is hoped that the material in this course, along with the research taking place, the student and post-doctoral involvement in the research, and tutorials on issues of causality in religion and health research (VanderWeele et al. 2017) will help train and prepare the next generation of researchers in this area for more methodologically rigorous research.

The research on the role of religion and spirituality in end-of-life care has also continued to substantially develop. Further analyses of the Religion and Spirituality in Cancer Care survey indicated that the most common forms of spiritual care were affirming beliefs, spiritual history taking, and referral to a chaplaincy but that in end-of-life settings, even these occurred only for one-in-ten to one-in-five patients (Epstein-Peterson et al. 2015). Further analyses indicated that for physicians, but not nurses, personal spirituality and intrinsic religiosity were related to whether physicians perceived themselves as having a role in providing spiritual care (Rodin et al. 2015). To better understand the role of religious communities in providing end of life care, Dr. Michael Balboni conducted a nationally representative survey of clergy views and experiences in end-of-life care settings. The data was being analyzed at the time of the writing of this chapter. Students from both the School of Public Health and the Medical School collaborated in this research, further strengthening ties between the two schools and research training opportunities. Two major book projects on religion and spirituality in the culture of medicine are also underway, to be published with Oxford University Press. One book edited by Drs. Peteet and Balboni (2017) examines the broad relevance of religion and spirituality for understanding the culture of medicine from assistance at birth, to mental health treatment, to care at the end of life, to issues of public health. A second book by Drs. Michael and Tracy Balboni (Balboni and Balboni 2018) examines why spiritual care is infrequently provided by medical professionals for patients near death, and suggests what needs to change to make spiritual care more frequent, especially in end-of-life care. A major grant from the Templeton Foundation described below also provided funding for the development and pilot testing of a spiritual care training intervention for health care providers.

The Initiative's research activities expanded considerably further with a grant award in 2016 from the Templeton Foundation of approximately $2 million to support the Initiative's activities under the project title of "Advancing Health, Religion, and Spirituality Research from Public Health to the End of Life." The grant provided research funding for Drs. Michael and Tracy Balboni and Dr. Shields at Harvard Medical School and Drs. VanderWeele and Chavarro at the School of Public Health to carry out new research projects. The grant also provided funding for student and post-doctoral research support and research opportunities, and for some student fellowships for students who wanted to carry out dissertation research on religion, spirituality and health. The grant also provided funding for seminars, and conferences on religion and health to expand outreach of these issues to both students and faculty. Small seed grants for faculty in the Divinity School and the School of Arts and Sciences were also to be made available. The grant was revised twice for the Templeton Foundation and, due to budgetary cuts, the extent of the program research, training, and outreach activities was somewhat smaller than initially conceived. Nonetheless the grant constituted an important step forward in the initiative's work, both in promoting the research but also for student involvement in research, conferences, and seminars and for further supporting courses.

Another critical expansion of the research on religion and health at Harvard was an award of two grants from the Templeton Foundation to Dr. Alexandra Shields to include, within existing cohort studies, a supplement with various questions on religion and spirituality. Such longitudinal cohort studies collect data repeatedly over time, often on a large sample of participants, and collect extensive data on demographic, social, medical, and psychological variables. Dr. Shield's project will assess the available religion and spirituality survey items in the existing cohorts and also supplement some of these cohorts with an additional questionnaire. The research will aim to identify which of the many religion and spirituality questions are most important for health research. The incorporation of assessments of religion and spirituality into these cohorts will provide valuable future resources for religion and health research, which existing and future students and post-doctoral fellows will be able to make use of in their research.

3.3 Seminars, Conferences, Symposia

The Initiative hosted in 2015 the 4th Annual Conference on Medicine and Religion in Cambridge, MA. The conference attracted over 300 attendees – the most since its inception – from around the United States, and included more than 100 medical and graduate students. The Conference is a collaborative effort among several similar programs at institutions such as the University of Chicago, Duke University, and Yale University. This is the only conference currently in the United States that provides a platform for ongoing research and scholarship at the intersection of religion, spirituality and health, and it has become an important forum for the field, including the training of the next generation of researchers. The Initiative at Harvard provides regular input and helps shape the Conference content as Dr. Michael Balboni serves as co-director, along with Dr. Farr Curlin at Duke University, of the annual conference. Other Initiative faculty have been plenary and panel speakers each year including Drs. Tracy Balboni, Peteet, Enzinger, and VanderWeele.

The grant from the Templeton Foundation provided funding for a new seminar series to continue and combine the prior seminars series on religion, spirituality and health that had previously taken place at the School of Public Health and the Medical School. The series was to be launched by a Symposium that took place at the Harvard Medical School and Harvard School of Public Health on December 2nd, 2016. The Symposium would highlight the Initiative's research and also include a panel of invited external speakers that had helped shape research and education on religion and health nationally. External speakers included Harold Koenig (Duke University), Kenneth Pargament (Bowling Green State University), Daniel Sulmasy (University of Chicago), and Christina Puchalski (George Washington University).

3.4   Fundraising Efforts

Sustained availability of student opportunities for learning about religion, spirituality and health and for research on religion and health will be most feasible if the work can be supported by stable funding sources. Several sources of funding have been pursued. Prior fundraising efforts for the Initiative had resulted in three modest gifts from private donors to support the Initiative's activities. In 2015, Howard Koh, former United States Assistant Secretary for Health for the U.S. Department of Health and Human Services, who had returned to the faculty of the School of Public Health, expressed interest in the Initiative. Dr. Koh joined the Initiative's executive steering committee and aided Drs. Balboni and VanderWeele in the program development. Dr. Koh provided also an introduction to the head of the Development Office at the School of Public Health, Michael Voligny, who himself expressed interest in the Initiative. Efforts began to find potential donors and an endowment for the Initiative's activities.

4   Future Goals of the Initiative on Health, Religion, and Spirituality at Harvard

The research and educational activities described above are all intended to help attain the long-term aims of Initiative, which are principally as follows:

1. To pursue rigorous research on health, religion, and spirituality, so as to inform medical decision-making, patient care, clergy involvement, and public health practice.
2. To provide educational, training, and mentoring opportunities for those interested in research, patient care, or public health practice related to religion, spirituality, and health.
3. To create an institutional home at Harvard University for scholars, students, health providers, and clergy interested in the interface of religion and health.
4. To normalize religion and health research within medicine and public health and to encourage and promote the rigorous study of religion within the academy more broadly.

While progress has been made on each of these goals, much work remains to be done. Development and testing of effective spiritual care training interventions for health care providers still needs to take place. Development and testing of effective training interventions for clergy in end of life settings likewise is still needed. The place of religion, spirituality, and health in the medical and school of public health curricula, while not absent, remains marginal, with only a small proportion of students exposed to these ideas. While the Initiative has brought many faculty together from Harvard's School of Public Health, Medical School, and affiliated hospitals, further work is needed to integrate with ongoing research and teaching carried out

by faculty at the Divinity School, the School of Arts and Sciences and elsewhere at Harvard. Research on religion, spirituality and health remains relatively marginal within academic medical and public health communities; further efforts are needed to normalize this work in research and teaching. The Initiative seeks an endowment to permanently secure a series of lectures, seminars, courses, training programs, and conferences on religion and health at Harvard University; to promote and provide funding for research on religion and health for many faculty throughout the university; to draw substantial attention to this important area of research and work; and to help normalize religion and health research, and teaching, at the Harvard Medical School and School of Public Health and, because of the prominence of these institutions, exert such influence throughout the medical and public health community nationally and world-wide.

Important initial steps have been made and the Initiative has come a long way in the building of its teaching and research programs and in bringing together faculty throughout the University. We hope that the years ahead will see further progress towards these important goals.

References

Balboni, M. J., & Balboni, T. A. (2018). *Hostility to hospitality: Patients' spiritual needs and clinician socialization wtihin medicine*. New York: Oxford University Press.

Balboni, T. A., Paulk, M. E., Balboni, M. J., Phelps, A. C., Loggers, E. T., Wright, A. A., Block, S. D., Lewis, E. F., Peteet, J. R., & Prigerson, H. G. (2010). Provision of spiritual care to patients with advanced cancer: Associations with medical care and quality of life near death. *Journal of Clinical Oncology, 28*(3), 445–452. https://doi.org/10.1200/jco.2009.24.8005.

Balboni, T. A., Balboni, M. J., Phelps, A. C., Wright, A. A., Peteet, J. R., Block, S. D., Lathan, C., VanderWeele, T. J., & Prigerson, H. G. (2011a). Support of cancer patient spiritual needs and associations with medical care costs at the end of life. *Cancer, 117*(23), 5383–5391. https://doi.org/10.1002/cncr.26221.

Balboni, M. J., Babar, A., Dillinger, J., Phelps, A. C., George, E., Block, S. D., Kachnic, L., Hunt, J., Peteet, J., Prigerson, H. G., VanderWeele, T. J., & Balboni, T. A. (2011b). "It depends": Viewpoints of patients, physicians and nurses on patient-practitioner prayer in the setting of advanced cancer. *Journal of Pain and Symptom Management, 41*(5), 836–847. https://doi.org/10.1016/j.jpainsymman.2010.07.008.

Balboni, M. J., Sullivan, A., Amobi, A., Phelps, A. C., Gorman, D., Zollfrank, A., Peteet, J. R., Prigerson, H. G., VanderWeele, T. J., & Balboni, T. A. (2013a). Why is spiritual care infrequent at the end of life? Spiritual care perceptions among patients, nurses, and physicians and the role of training. *Journal of Clinical Oncology, 30*(4), 2538–2544. https://doi.org/10.1200/jco.2012.44.6443.

Balboni, T. A., Balboni, M. J., Enzinger, A. C., Gallivan, K., Paulk, M. E., Wright, A., Steinhauser, K., VanderWeele, T. J., & Prigerson, H. G. (2013b). Provision of spiritual support to advanced cancer patients by religious communities and associations with medical care at the end of life. *JAMA Internal Medicine, 73*(12), 1109–1117. https://doi.org/10.1001/jamainternmed.2013.903.

Balboni, M. J., Sullivan, A., Enzinger, A. C., Epstein-Petersen, Z., Tseng, Y., Mitchell, C., Niska, B. A., Zollfrank, A., VanderWeele, T. J., & Balboni, T. (2014). Nurse and physician barriers to spiritual care provision at the end of life. *Journal of Pain and Symptom Management, 48*(3), 400–410. https://doi.org/10.1016/j.jpainsymman.2013.09.020.

Epstein-Peterson, Z. D., Sullivan, A. J., Enzinger, A. C., Trevino, K. M., Zollfrank, A. A., Balboni, M. J., VanderWeele, T. J., & Balboni, T. A. (2015). Examining forms of spiritual care provided in the advanced cancer setting. *American Journal of Hospice & Palliative Medicine, 32*(7), 750–757. https://doi.org/10.1177/1049909114540318.

Li, S., Okereke, O. I., Chang, S.-C., Kawachi, I., & VanderWeele, T. J. (2016a). Religious service attendance and lower depression among women – A prospective cohort study. *Annals of Behavioral Medicine, 50*(6), 876–884. https://doi.org/10.1007/s12160-016-9813-9.

Li, S., Stamfer, M., Williams, D. R., & VanderWeele, T. J. (2016b). Association between religious service attendance and mortality among women. *JAMA Internal Medicine, 176*(6), 777–785. https://doi.org/10.1001/jamainternmed.2016.1615.

Peteet, J. R., & Balboni, M. J. (Eds.). (2017). *Spirituality and religion within the culture of medicine: From evidence to practice*. New York: Oxford University Press.

Phelps, A. C., Maciejewski, P. K., Nilsson, M., Balboni, T. A., Wright, A. A., Paulk, M. E., Trice, E., Schrag, D., Peteet, J. R., Block, S. D., & Prigerson, H. G. (2009). Religious coping and use of intensive life-prolonging care near death in patients with advanced cancer. *JAMA*, *301*(11), 1140–1147. https://doi.org/10.1001/jama.2009.341.

Phelps, A. C., Lauderdale, K. E., Alcorn, S., Dillinger, J., Balboni, M. T., Van Wert, M., VanderWeele, T. J., & Balboni, T. A. (2012). Addressing spirituality within the care of patients at the end of life: Perspectives of advanced cancer patients, oncologists, and oncology nurses. *Journal of Clinical Oncology, 30*(20), 2538–2544. https://doi.org/10.1200/jco.2011.40.3766.

Rodin, D., Balboni, M., Mitchell, C., Smith, P. T., VanderWeele, T. J., & Balboni, T. A. (2015). Whose role? Oncology practitioners' perceptions of their role in providing spiritual care to advanced cancer patients. *Supportive Care in Cancer, 23*(9), 2543–2550. 10.1007.

Vallurupalli, M., Lauderdale, K., Balboni, M. J., Prigerson, H. G., Phelps, A. C., VanderWeele, T. J., & Balboni, T. A. (2012). The role of spirituality and religious coping in the quality of life of patients receiving palliative radiation therapy. *Journal of Supportive Oncology, 10*(2), 81–87. https://doi.org/10.1016/j.suponc.2011.09.003.

VanderWeele, T. J. (2017). Religion and health: A synthesis. In J. R. Peteet & M. J. Balboni (Eds.), *Spirituality and religion within the culture of medicine: From evidence to practice*. New York: Oxford University Press.

VanderWeele, T. J., & Koenig, H. G. (2017). A course on religion and public health at Harvard. *American Journal of Public Health, 107*(1), 47–49. https://doi.org/10.2105/AJPH.2016.303501.

VanderWeele, T. J., Jackson, J. W., & Li, S. (2016a). Causal inference and time-varying exposures: A case study of religion and mental health. *Social Psychiatry and Psychiatric Epidemiology, 51*(11), 1457–1466. https://doi.org/10.1007/s00127-016-1281-9.

VanderWeele, T. J., Li, S., Tsai, A., & Kawachi, I. (2016b). Association between religious service attendance and lower suicide rates among US women. *JAMA Psychiatry, 73*(8), 845–851. https://doi.org/10.1001/jamapsychiatry.2016.1243.

VanderWeele, T. J., Yu, J., Cozier, Y. C., Wise, L., Argentieri, M. A., Rosenberg, L., Palmer, J. R., & Shields, A. E. (2017). Religious service attendance, prayer, religious coping, and religious-spiritual identity as predictors of all-cause mortality in the Black Women's Health Study. *American Journal of Epidemiology, 185*(7), 515–522. https://doi.org/10.1093/aje/kww179.

Winkelman, W. D., Lauderdale, K., Balboni, M. J., Phelps, A. C., Block, S. D., VanderWeele, T. J., & Balboni, T. A. (2011). The relationship of spiritual concerns to the quality of life of advanced cancer patients. *Journal of Palliative Medicine, 14*(9), 1022–1028. https://doi.org/10.1089/jpm.2010.0536.

An Evidence-Based Course at U.C. Berkeley on Religious and Spiritual Factors in Public Health

Doug Oman

Abstract This chapter describes a compact (9 week, 18 hour) evidence-based course on religious/spiritual (R/S) factors and public health that has been offered with success for nearly a decade at the University of California, Berkeley, School of Public Health. We describe a logical sequence of topics and readings that convey the public health importance and key ideas of the R/S-health field, while maintaining respectful stance toward diverse student beliefs. Weekly readings initially focus on (1) conceptual introductions; (2) examples of empirical health research on religious involvement; and (3) examples of empirical health research on spiritual practices. Attention then turns to (4) mechanisms underlying R/S-health effects, (5) weighing the evidence through meta-analyses, systematic reviews, and in other ways, (6) clinical applications, (7) public health applications, and finally (8) worldviews and science/religion dialogue. Pedagogy, assignments, grading, and student reactions are discussed, along with the role that similar courses might play in school-level strategies for teaching about religious/spiritual factors and public health.

Keywords Public health · Spirituality · Religion · Evidence-based · Education · Training · Pedagogy · Practice · Religious diversity · Worldview

The School of Public Health at the University of California, Berkeley, was established in 1943 as the first US school of public health (SPH) west of the Mississippi River. It has long been one of the leaders in the study of psychosocial factors in public health. Through a training grant in behavioral factors – lasting 30 years, it was the longest-running training grant ever funded by the National Institutes of Health – Berkeley's Professor Leonard Syme mentored many national and international leaders in psychosocial and behavioral factors, including Michael Marmot, Lisa Berkman, George Kaplan, Nancy Kreiger, and many others.

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Dr. Syme had conducted studies on religion and health as early as the 1950s (Syme 1959), and had guided the present author in his postdoctoral studies of religious/spiritual factors. However, to the best of our knowledge, the first course on R/S factors at Berkeley's SPH was offered by the present author in 1999. A few years later, at the invitation of a SPH curriculum committee, the course was redesigned to emphasize compactness, and now lasts about one-half semester. Taught every spring since 2009, "Public Health and Spirituality" (PH281), introduces students to religion/spirituality (R/S) and health issues from a public health point of view. The course gains consistently high ratings from students. Students in the class each year have included both undergraduate and graduate public health majors, and often a few interested students from other departments.

This chapter briefly describes the course, including its main themes, underlying conceptual sequencing, pedagogy, and modes of assessment and grading. We regard the compactness of the course as a strength that makes it more widely usable and adaptable elsewhere. We hope that readers who are public health professionals – either faculty, prospective faculty, or teachers in other ways – may find this account useful if they are interested in developing similar courses. Additional supporting materials for the course are available elsewhere (see Box 1).

> **Box 1: Supplemental Resources on U.C. Berkeley's Public Health and Spirituality (PH281)**
>
> Supplemental resources on PH281 can be obtainable as described in Chapter "Introduction: What Should Public Health Students Be Taught About Religion and Spirituality?", this volume, Box 1:
>
> - A syllabus for PH281
> - A flyer for PH281
> - Animated PPT slides of the Quiz (see Table 2)

In what follows, we describe the overall structure of the course, followed by a description of key issues related to each main topic. We then describe general pedagogical considerations, and offer overall discussion.

1 Course History and Structure

Since its inception as a stand-alone elective seminar in 2009, Public Health and Spirituality (PH281) has drawn a median of 14 students per year, out of Berkeley's enrollment of approximately 500 on-campus School of Public Health graduate students and 400 undergraduate public health majors. Because public health graduate students are typically very busy and must complete a large number of required courses, the PH281 course was designed compactly to maximize learning while minimizing student burden. From its inception, PH281 has involved a single weekly

meeting of 2 hours offered in the spring semester, meeting for the first 9 weeks of Berkeley's 14-week semester.

The main course goal is that students will understand evidence about aspects of spirituality and religion *viewed as relevant to the student*. Other goals include that students will gain knowledge of proposed explanations for R/S-health relations, ethical constraints, skills for collaboration between public health and faith communities, and the breadth of scientific and public interest in R/S-health relations. Student goals for enrolling, as expressed in a brief writing assignment, usually show considerable overlap with formalized course goals.

The first meeting, discussed below, is used to orient students to the class structure as well as the topic. Thereafter, students are assigned weekly readings that correspond to each of the eight weekly topics, as summarized in Table 1. Readings are primarily journal articles and book chapters. After the initial introduction (Week 1), the course focus gradually develops from readings of sample empirical studies (Weeks 2 and 3), through overviews and interpretations of the evidence (Weeks 4 and 5), to implications for practice (Weeks 6 and 7), and finally to potential implications for personal beliefs and worldviews (Week 8). This sequence reflects the instructor's prioritization of empirical evidence as a primary rationale for devoting professional attention to R/S factors. As will be seen, the course structure also allows time to address additional theoretical, philosophical, and ethical considerations, including desires by many students to discuss or share implications for their own career paths or personal spiritual seeking. To help convey a sense of how all these topics and elements fit together and unfold, the next section highlights some key themes and readings on a week-by-week basis.

2   Weekly Readings and Main Ideas

As noted earlier, the sequence of weekly topics in Table 1 is aimed to familiarize students with the evidence base of the field. At the first week's introductory meeting, the instructor emphasizes the size of the evidence base (3000+ studies), the fact that many public health and other faculty are unacquainted with this evidence base,

Table 1   Weekly topics of nine-week public health and spirituality

Week	Topic of assigned readings (discussed the *following* week)
1	Introduction: overview; key evidence; differences between spirituality and religion.
2	Evidence for religion-health relationships: Sample studies
3	Evidence for spiritual practice-health relationships: Sample studies
4	Possible explanations: Confounders and causal pathways
5	Weighing the evidence
6	Ethical constraints and intervention
7	Public health applications and collaboration
8	Worldview issues

Table 2 Sample questions and answers from "What Health Factor?" quiz

Question	Answer[a]
►What health-related variable has been linked (n > 20,000) to life-expectancy gaps of 7 years in the US adult population and up to 14 years in African-Americans?	Attending religious services (more than weekly versus never)[a]
►And what health factor remained nearly as strongly related to mortality (RH = 1.50) as was heavy smoking (RH = 1.63) … after both were adjusted for other well-established risk factors (demographics, SES, health status, health behaviors, social ties)?	Attending religious services (more than weekly versus never)[a]
►In what dimension of life, related to health, do 47% of US college students feel it is "essential" or "very important" to find "opportunities to grow" and 82% of US adults "feel a need to grow"?	Spiritual growth
►Health implications were the topic of a special section/issue on what factor in [*a list of journals that covers a slide*]?[b]	Religion, or religion/ spirituality
►What health factor, once condemned as reflecting a "universal obsessional neurosis," is now the focus of a 2-volume *Handbook* by the American Psychological Association?	Religiousness/spirituality
►The NIH has co-sponsored a book of measures of what factor for use in health research?	Religiousness/spirituality

[a]The first two answers are based on Hummer et al. (1999), with other answer sources available in supplemental materials (see Box 1)
[b]Journal special sections or issues focused on R/S-health relations include those appearing in *Annals of Behavioral Medicine* (2002), *Journal of Behavioral Medicine* (2007, 2011), *Health Education and Behavior* (1998), *American Psychologist* (2003), and more than 30 others

and that this course provides an unusual opportunity to learn about this evidence base. To drive this point home, the instructor presents a brief (5 min) power-point "quiz," entitled "What Health Factor?" Sample questions and answers are shown in Table 2. Students in Week 1 are also presented with a heuristic model of plausible mediating pathways through which R/S factors could causally influence mental and physical health outcomes. The model emphasizes potential mediation by health behaviors, social connections and support, and mental health and coping strategies (see "Model of Individual Health Effects: Supporting Evidence," this volume). It is also pointed out that this model, consistent with the R/S-health literature in general, is non-reductionistic, and potentially acceptable to both scientists and to R/S believers.

Assigned Week 1 readings aim to provide further orientation to basic concepts. Students begin by reading Miller and Thoresen's (2003) article in the *American Psychologist*, a readable historical and conceptual introduction to the R/S-health field. It introduces a special section containing systematic review papers commissioned by the National Institutes of Health, Office of Behavioral and Social Sciences Research. Students next read a chapter by Pargament et al. (2001) that provides a cross-cultural and in-depth introduction to the concept of religious coping. Instructor commentary emphasizes that religious coping helps explain some of the specific *added value* provided by R/S factors, above and beyond what is generally available through secular practices – as Pargament et al. say, "measures of religious coping

have been found to predict adjustment to life crises beyond the effects of traditional secular coping measures" (p. 260). Two additional Week 1 readings set the stage for later weeks: A sample empirical report by Oman and Reed (1998) helps students prepare for reading a wealth of empirical studies in the following weeks, and a reading from Watts and Dutton (2006) introduces students to the concept of R/S-science dialogue as a multi-faith endeavor.

2.1   Example Studies (Weeks 2–3)

Weeks 2 and 3 emphasize reading individual empirical studies as examples – first about religion (Week 2), then about spirituality (Week 3). Week 2 begins with an influential study by Hummer et al. (1999), used to delve in further depth into the important and influential literature on religion and longevity. Next, a unique longitudinal study by Strawbridge et al. (2001) focuses on the predictiveness of religious attendance over 29 years for improving poor health behaviors and maintaining good health behaviors. Consistent with the population focus of public health, we also read a study that measures religion at the level of a geographical unit (e.g., neighborhood – see "Social and Community-Level Factors in Health Effects from Religion/Spirituality," this volume). Finally, students are assigned a clinically-situated study. This collection of readings allows us to introduce many recurring themes, such as the recognition that not all R/S-health associations are positive, and that religion-health associations may be different – and are often larger – among healthy rather than clinical populations.

Week 3 focuses on evidence regarding spiritual practices and health. Separate weeks for religion and spirituality help ensure that all students, including those identifying as "spiritual but not religious," will encounter material that resonates with the forms of religion/spirituality that most engage them.[1] We begin by reading a chapter by Thoresen et al. (2005) that introduces several useful concepts, functioning as a bridge between religion and spirituality. These authors examine four practices that are often deemed spiritual: (i) attendance at religious services, (ii) prayer, (iii) meditation, and (iv) forgiveness. Since attendance at religious services is also a religious practice, this illustrates the overlap between religion and spirituality. Conversely, since meditation and forgiveness are emphasized in many religious traditions but can also be practiced for secular reasons, these practices illustrate the challenges and ambiguities posed by alternate definitional approaches.

Additional Week 3 readings present thought-provoking evidence that spiritually oriented meditation may be more beneficial than purely secular meditation (Wachholtz and Pargament 2008), and a study documenting the effects of meditation in college students (Oman et al. 2008). Students are also introduced to studies

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[1] Spirituality was not included as a separate weekly topic in the very earliest offering of the course, because much of the strongest evidence pertains to religion rather than spirituality. It was later included following student feedback.

of the practice of frequent mantram or holy name repetition throughout the day (Bormann and Oman 2007), a practice known and used in many traditions, East and West (Oman and Driskill 2003). In contrast to forms of sitting meditation that require substantial dedicated time, frequent mantram repetition is done throughout the day, enhancing its usability among poorer and disadvantaged populations that are a frequent concern of public health. Finally, consistent with the ongoing emphasis on diversity, we read an analysis by Oman (2010) of observable similarities of the elements contained in meditative/contemplative practice systems across diverse religious and spiritual traditions.

2.2   Overviews of Evidence (Weeks 4–5)

Weeks 4 and 5 emphasize the forest rather than individual trees, helping students clarify mediating pathways and assess the overall weight of the evidence. Possible mechanisms were first introduced in Week 1 and have been addressed briefly in many empirical studies in previous weeks, but they become a central focus in Week 4. We begin with a reading by Oman and Thoresen (2007) that reiterates and elaborates the causal framework for R/S-health effects that was introduced in the first week. Additional readings include studies or reviews of evidence for psychological pathways such as self-control and for physiological pathways such as telomerase and blood pressure. Offering a non-western emphasis, a chapter by Trinitapoli and Weinreb (2012) presents evidence from Africa for psychosocial mediators such as congregational culture and behavioral self-regulation.

Week 5 emphasizes scholarship that weighs the evidence and describes emergent patterns, relying largely on meta-analyses and systematic reviews. We therefore assign students to read abstracts and/or key results in reviews or meta-analyses focused on a variety of topics that include R/S relations with morbidity and mortality; how R/S coping methods are related to stress; and various other topics that include R/S and nutritional status, spiritually infused counseling interventions, R/S relations to psychopathology, and how spirituality relates to recovery from cardiac surgery. Attempts to weigh the evidence for a causal relation of R/S with health are constrained by the fact that one cannot ethically engage in the randomized allocation of study subjects to different religions. Students therefore also read Levin's (1994) application to religion-health questions of Hill's famous nine guidelines on causality. They also consider whether religion/spirituality may be a "fundamental cause" of health/disease, one that will over time "maintain an association with disease even when intervening mechanisms change" (Link and Phelan 1995, pp. 80, 81) (for more on these issues see chapter on "Weighing the Evidence: What is Revealed by 100+ Meta-Analyses and Systematic Reviews of Religion/Spirituality and Health?," this volume).

2.3   Implications for Practice (Weeks 6–7)

The next two weeks emphasize implications for clinical practice and intervention by individual practitioners (Week 6), followed by group-level implications and interventions (Week 7). Week 6 begins with Koenig's (2000) one-page *JAMA* overview of the clinical relevance of R/S to individual physicians, followed by a lengthier discussion of R/S-related ethical issues in clinical practice (Post et al. 2000). A third reading describes a randomized trial of a 5–7 min protocol for addressing R/S in oncology care (Kristeller et al. 2005), and a fourth examines suggested R/S competencies for psychologists (Vieten et al. 2013). One additional reading has been an empirical report of benefits to an aboriginal population from including aboriginal healing elders and aboriginal spirituality in treatments for domestic violence (Puchala et al. 2010).

Weel 7 emphasizes *public health applications*, especially population-focused education and interventions. Students read an article by Campbell et al. (2007) from the *Annual Review of Public Health* that introduces a variety of useful concepts. One is the distinction between "faith-based," "faith-placed," and "collaborative" intervention strategies (p. 217). A second useful concept is a graded typology of involvement by the church, ranging from Level I (only "a venue to recruit") to Level IV ("spiritual program elements integrating messages and scriptures linking religion and health," p. 217). Third is distinguishing two facets of cultural sensitivity, surface structure ("matching intervention materials and messages to observable social and behavioral characteristics") and deep structure ("understanding how members of the target population perceive the cause, course, and treatment of illnesses [and] determinants of specific health behaviors," p. 218). Additional readings include hands-on discussions and examples of religion-cognizant cultural tailoring by Tuggle (2000).

2.4   Implications for Worldview (Week 8)

Week 1 through Week 7 readings strongly emphasize an evidence-based, scientific approach. Only in the Week 8 readings, discussed at the ninth and final meeting, do the assigned readings engage systematically with "worldview" questions that have typically been lurking on the margins. Considering such questions can assist future clinicians, educators, organizers, and researchers in thinking through their own worldviews, as well as how they will interact with patients, clients, and community partners who express R/S views (see also Zinnbauer and Pargament 2000). These Week 8 readings are mostly shorter and less technical than previous weeks' readings, although slightly more numerous. For class discussion they are clustered into five sequentially discussed *themes*, briefly described in Box 2.

Box 2: Themes of "worldview" readings (assigned Week 8)
- Theme 1 elaborates on the concept of science/religion dialogue with Barbour's (2000, p. 6) fourfold typology of science/religion interaction: (a) conflict, (b) independence, (c) dialogue, and (d) integration.
- Theme 2 shifts to explore the question, "How are science and religion alike?" by sampling two quite differently-styled readings, from the inventor of the maser, Nobel laureate Charles Townes (1966), and from New Age philosopher Ken Wilber (2006).
- Theme 3 circles back to addresses potential causal pathways outside of mainstream science, such as have been explored in studies of intercessory prayer (Benson et al. 2006), which have yielded overall null results according meta-analyses (see chapter entitled "Model of Individual Health Effects: Supporting Evidence," this volume). Assigned readings point to the diversity of theological interpretations, revealing that null findings were predicted by some religious people on religious grounds (Myers 1997).
- Theme 4 examines some additional issues related to science/religion dialogue, such as the capacities of scientists to separate their research from their R/S worldviews (Shapiro 1994).
- Theme 5 considers relations of R/S to social justice and politics, with readings that consider the empowering and disempowering features of different types of religious culture for pro-public health political action (Wood 1994), and media biases in covering views of R/S communities (Media Matters for America 2007).

Theme 1 is foundational. It re-introduces the concept of science/religion dialogue, first mentioned in Week 1, now probing it in more depth. The main Theme 1 reading presents Barbour's (2000, p. 6) influential fourfold typology of "basic types" of interaction between science and religion: (a) conflict, (b) independence, (c) dialogue, and (d) integration. Historical examples of each type of interaction are said to be present "in each of the centuries since the rise of modern science and in each of the sciences" (p. 5).

The majority of the remaining themes explore various aspects of science/religion dialogue. For example, more than one-half century after its initial publication, most students continue to appreciate U.C. Berkeley Nobel laureate Charles Towns' (1966) reflections on the similarities between science and religion.

Each theme is assigned in conjunction with multiple questions for discussion, intended to help students work out the relation between science and religion as cultural forces in their own personal and professional lives. Example questions include "Would it be a good thing if Townes' vision is true? Why or why not?" (Theme 2), "Have you personally witnessed congregational political efforts that corroborate the

author's theories? Or that contradict them?" (Theme 5), and "Could better understanding of R/S-science common ground produce any negative effects globally?" (Theme 1).

3 Assignments, Grading, and Pedagogy

The previous section presented a logical sequence of ideas and readings for introducing a public health professional or student to the R/S-health field from an interdisciplinary, public health point of view. Students might be guided to assimilate such material in several ways. At Berkeley, we have used a seminar format, based on the recognition that although they usually need elective credit, most students enroll in the PH281 course out of interest in the topic and/or perceptions of its importance. Accordingly, from Week 2 through Week 9, class meetings have been used for discussion rather than lectures, with assignments designed to support ongoing student intellectual and conversational engagement. In particular, for every set of weekly readings, each student is assigned to write a "reaction paper" (1–2 pages, double-spaced) that is handed in at the beginning of class. Reaction papers must *not* summarize material in the readings, a restriction ensuring that papers will indeed be reactions. Students hand in their reaction papers at the beginning of class, but the process of drafting the papers generates student reflections and opinions that they are primed to share in discussions.

To further break the ice and broaden participation, students also sign up to present 1–2 min "memory joggers" to introduce each reading when it is discussed in class. Each meeting from Week 2 onward also begins with an opportunity for "open forum," in which students or the instructor may share events or reflections from the past week, such as alerting the class to current events or media coverage; one example was a 2009 open forum alert to a *Time Magazine* cover story on science and religion. The open forum also provides an opportunity for the instructor to pass around copies of unassigned but relevant key texts, such as Smith's (1991) everfresh *The World's Religions*, Koenig et al.'s (2012) *Handbook of Religion and Health*, and Tuggle's (2000) APHA-published hands-on guide to collaboration.

At the final meeting, students receive a written take-home final project packet, due 2 weeks later. In the Berkeley PH281 course, students may choose to do either a multiple-choice test, or a 2–5 page final essay. Consistent with our view of students as primarily self-motivated, Berkeley's grading weights are designed to prod students to stay current with class assignments, while ensuring that adequate effort minimizes risks of failure.[2]

Two significant choices facing the instructor concern norms of respect and self-disclosure to be followed in classroom discussions. "Speaking respectfully of everyone present," even when disagreeing, is listed as a fundamental ground rule in

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[2] The total grade breakdown is approximately 60% reaction papers, 20% class participation (including attendance), 15% final project, and 5% other (e.g., statement of goals).

the syllabus and explained at the first meeting. In addition, students are encouraged to stay within their "comfort zone" with regard to self-disclosure of their personal spiritual beliefs and religious affiliations or lack thereof. Self-disclosure per se is neither endorsed nor discouraged. Over the term, majorities of students do tend to share their affiliations, but this occurs at a pace and in a context of their own choosing. Such personal information often emerges naturally in the course of conversation, such as when we are discussing readings relevant to particular traditions – for example, the introductory reading by Pargament et al. (2001) – and a student with insider cultural experience of that tradition steps forward to aid our collective understanding.

In this manner – as an outgrowth of open-minded intellectual engagement – our classroom diversity quite literally becomes an asset. And at Berkeley, religious diversity can be considerable: Enrolled students have self-disclosed upbringings that include Roman Catholicism, Mainline Protestantism, Evangelical Protestantinsm, Judaism, Islam, Hinduism, Buddhism – including both immigrant traditions and recent conversions, Jainism, Zoroastrianism, and non-belief. Available classroom diversity also assists in testing – and in our experience largely verifying – that the core components of the scientific model for R/S-health causative relations, with components such as social connections and religious coping, are plausibly applicable to all major R/S traditions. Also, perhaps in part because the course's scientific framework directs attention to such commonalities, we have often experienced a tipping point, about one-quarter to one-half of the way through the class's nine weekly meetings, when the majority of students bond with each other as friends, despite, or possibly in part because of, their diverse backgrounds and current affiliations.

4 Student Reactions

Since its inception in 2009, the PH281 course has received high ratings, with all yearly ratings but one averaging 6 or higher on a 1–7 scale. Student comments indicate that major course goals have been achieved. For example, in 2014, anonymous comments by students included that the course "provided a clear scientific framework for exploring the topic of R/S and public health. It was practical, as well, by providing case studies for R/S interventions to support health"; "was an opportunity to think outside the box of conventional PH practice and think about the human condition on a more fundamental level"; was "very useful to not only my public health education but also to my general knowledge for life. As a clinician, this knowledge about religious/spiritual methods of coping with stress and illness will help me understand my patients better and be able to ask the appropriate questions and make referrals to seek help"; and "gave R-S a population focus without diminishing the personal value of R-S to the individual."

5   Discussion

This chapter has sketched a sequence of topics and the core of a set of readings that we believe can helpfully guide public health professionals and students to recognize the public-health importance and many key ideas of the R/S-health field, which has now generated more than 3000 empirical studies and 30+ meta-analyses. We have also described how this set of topics was translated into a consistently successful for-credit elective seminar at the U.C. Berkeley School of Public Health. Features of this course include an abbreviated 9-week schedule, weekly meetings structured around discussions that are primed by reaction-paper assignments, and final project alternatives that facilitate consolidation of ideas and enable deeper engagement.

The success of this course shows the viability, even at an introductory level, of addressing religion/spirituality using the scientific and evidence-based approaches that are emphasized nationwide in public health. Using an evidence-based approach helps convey the powerful case for public health relevance while helpfully contextualizing the ethical, theoretical, and philosophical considerations that also merit attention. We believe that the nucleus of this course design, and perhaps some details of its implementation, could be beneficially adapted for use at many schools and colleges of public health nationwide, augmenting the pedagogical options described elsewhere in this volume.

A few limitations of the current course design should also be mentioned. First, many topics of interest have been omitted or addressed only briefly due to the course's compactness. Much greater coverage could potentially be given to topics such as R/S-health relations in minority traditions and populations (e.g., Judaism, Islam, Hinduism, indigenous religions), as well as to R/S-health relations within various other sociocultural minorities (e.g., sexual orientation minorities) or age groups (e.g., children). Depending on instructor or student interest, more coverage might also be given to some issues, such as the effects of meditation/contemplative prayer, methodological issues such as measurement, and the viability of conceptualizing certain forms of unbelief as a form of religious belief. These directions for possible expansion underscore the value of the present compact design as a flexible and expandable starting point.

Ultimately, we believe that stand-alone elective courses on religious/spiritual factors must be complemented by incorporating the R/S-health topic in an integrated and proportional manner across the public health curriculum. For example, a dedicated session may be appropriate in some courses (e.g., social epidemiology), combined with briefer mentions in other courses (see chapter "Introduction: What Should Public Health Students Be Taught About Religion and Spirituality?" this volume).

There are many reasons why religion and spirituality should be more fully addressed in public health, including an enormous and expanding research base supported by dozens of meta-analyses, frequent and arguably causal associations with physical and mental health, and ongoing importance in global culture. We hope

that this chapter has persuaded the reader of one additional reason: It is indeed possible and feasible to offer a compact, flexible, evidence-based, and culturally sensitive introductory course on the topic of religion, spirituality, and public health.

References

Barbour, I. G. (2000). *When science meets religion*. San Francisco: HarperSanFrancisco.

Benson, H., Dusek, J. A., Sherwood, J. B., Lam, P., Bethea, C. F., Carpenter, W., et al. (2006). Study of the Therapeutic Effects of Intercessory Prayer (STEP) in cardiac bypass patients: A multicenter randomized trial of uncertainty and certainty of receiving intercessory prayer. *American Heart Journal, 151*(4), 934–942. https://doi.org/10.1016/j.ahj.2005.05.028.

Bormann, J. E., & Oman, D. (2007). Mantram or holy name repetition: Health benefits from a portable spiritual practice. In T. G. Plante & C. E. Thoresen (Eds.), *Spirit, science and health: How the spiritual mind fuels physical wellness* (pp. 94–112). Westport: Praeger.

Campbell, M. K., Hudson, M. A., Resnicow, K., Blakeney, N., Paxton, A., & Baskin, M. (2007). Church-based health promotion interventions: Evidence and lessons learned. *Annual Review of Public Health, 28*, 213–234. https://doi.org/10.1146/annurev.publhealth.28.021406.144016.

Hummer, R. A., Rogers, R. G., Nam, C. B., & Ellison, C. G. (1999). Religious involvement and U.S. adult mortality. *Demography, 36*(2), 273–285. https://doi.org/10.2307/2648114.

Koenig, H. G. (2000). Religion, spirituality, and medicine: Application to clinical practice. *Journal of the American Medical Association, 284*(13), 1708. https://doi.org/10.1001/jama.284.13.1708-JMS1004-5-1.

Koenig, H. G., King, D. E., & Carson, V. B. (2012). *Handbook of religion and health* (2nd ed.). Oxford/New York: Oxford University Press.

Kristeller, J. L., Rhodes, M., Cripe, L. D., & Sheets, V. (2005). Oncologist Assisted Spiritual Intervention Study (OASIS): Patient acceptability and initial evidence of effects. *International Journal of Psychiatry in Medicine, 35*(4), 329–347. https://doi.org/10.2190/8AE4-F01C-60M0-85C8.

Levin, J. S. (1994). Religion and health: Is there an association, is it valid, and is it causal? *Social Science and Medicine, 38*(11), 1475–1482. https://doi.org/10.1016/0277-9536(94)90109-0.

Link, B. G., & Phelan, J. (1995). Social conditions as fundamental causes of disease. *Journal of Health and Social Behavior, 35*(Supp.), Supp. 80–94. https://doi.org/10.1177/0022146510383498

Media Matters for America. (2007). *Left behind: The skewed representation of religion in major news media*. http://mediamatters.org/reports/leftbehind/. Accessed 10 Jan 2011.

Miller, W. R., & Thoresen, C. E. (2003). Spirituality, religion, and health: An emerging research field. *American Psychologist, 58*(1), 24–35. https://doi.org/10.1037/0003-066X.58.1.24.

Myers, D. G. (1997). *Why people of faith can predict null effects in the Harvard prayer experiment [notarized and signed letter]*. http://www.davidmyers.org/davidmyers/assets/prayer-letter.pdf. Accessed 3 Mar 2014.

Oman, D. (2010). Similarity in diversity? Four shared functions of integrative contemplative practice systems. In T. G. Plante (Ed.), *Contemplative practices in action: Spirituality, meditation, and health* (pp. 7–16). Santa Barbara: Praeger.

Oman, D., & Driskill, J. D. (2003). Holy name repetition as a spiritual exercise and therapeutic technique. *Journal of Psychology and Christianity, 22*(1), 5–19.

Oman, D., & Reed, D. (1998). Religion and mortality among the community-dwelling elderly. *American Journal of Public Health, 88*(10), 1469–1475. https://doi.org/10.2105/AJPH.88.10.1469.

Oman, D., & Thoresen, C. E. (2007). Does religion cause health? In A. Eisen & G. Laderman (Eds.), *Science, religion, and society: An encyclopedia of history, culture, and controversy* (Vol. 2, pp. 685–695). Armonk: ME Sharpe.

Oman, D., Shapiro, S. L., Thoresen, C. E., Plante, T. G., & Flinders, T. (2008). Meditation lowers stress and supports forgiveness among college students: A randomized controlled trial. *Journal of American College Health, 56*(5), 569–578. https://doi.org/10.3200/JACH.56.5.569-578.

Pargament, K. I., Poloma, M. M., & Tarakeshwar, N. (2001). Methods of coping from the religions of the world: The bar mitzvah, karma, and spiritual healing. In C. R. Snyder (Ed.), *Coping with stress: Effective people and processes* (pp. 259–284). New York: Oxford University Press.

Post, S. G., Puchalski, C. M., & Larson, D. B. (2000). Physicians and patient spirituality: Professional boundaries, competency, and ethics. *Annals of Internal Medicine, 132*(7), 578–583. https://doi.org/10.7326/0003-4819-132-7-200,004,040-00010.

Puchala, C., Paul, S., Kennedy, C., & Mehl-Madrona, L. (2010). Using traditional spirituality to reduce domestic violence within aboriginal communities. *Journal of Alternative and Complementary Medicine, 16*(1), 89–96. https://doi.org/10.1089/acm.2009.0213.

Shapiro, D. H. (1994). Examining the content and context of meditation; a challenge for psychology in the areas of stress management, psychotherapy, and religion/values. *Journal of Humanistic Psychology, 34*(4), 101–135. https://doi.org/10.1177/00221678940344008.

Smith, H. (1991). *The world's religions: Our great wisdom traditions*. San Francisco: Harper San Francisco.

Strawbridge, W. J., Shema, S. J., Cohen, R. D., & Kaplan, G. A. (2001). Religious attendance increases survival by improving and maintaining good health practices, mental health, and stable marriages. *Annals of Behavioral Medicine, 23*(1), 68–74. https://doi.org/10.1207/S15324796ABM2301_10.

Syme, S. L. (1959). Religion, emotional stress, and serum cholesterol concentration: A statement in support of one aspect of the Washington Sanitarium Research Proposal. *(unpublished)*.

Thoresen, C. E., Oman, D., & Harris, A. H. S. (2005). The effects of religious practices: A focus on health. In W. R. Miller & H. D. Delaney (Eds.), *Judeo-Christian perspectives on psychology: Human nature, motivation, and change* (pp. 205–226). Washington, DC: American Psychological Association. https://doi.org/10.1037/10859-011.

Townes, C. H. (1966). The convergence of science and religion. *Think, 32*(2), 2–7.

Trinitapoli, J. A., & Weinreb, A. (2012). *Religion and AIDS in Africa*. Oxford/New York: Oxford University Press.

Tuggle, M. B. (2000). *It is well with my soul: Churches and institutions collaborating for public health*. Washington, DC: American Public Health Association.

Vieten, C., Scammell, S., Pilato, R., Ammondson, I., Pargament, K. I., & Lukoff, D. (2013). Spiritual and religious competencies for psychologists. *Psychology of Religion and Spirituality, 5*(3), 129–144. https://doi.org/10.1037/a0032699.

Wachholtz, A. B., & Pargament, K. I. (2008). Migraines and meditation: Does spirituality matter? *Journal of Behavioral Medicine, 31*(4), 351–366. https://doi.org/10.1007/s10865-008-9159-2.

Watts, F. N., & Dutton, K. (2006). *Why the science and religion dialogue matters: Voices from the International Society for Science and Religion*. Philadelphia: Templeton Foundation Press.

Wilber, K. (2006). Foreword. In J. Shear (Ed.), *The experience of meditation: Experts introduce the major traditions* (pp. ix–xii). St. Paul: Paragon House.

Wood, R. L. (1994). Faith in action: Religious resources for political success in three congregations. *Sociology of Religion, 55*(4), 397–417. https://doi.org/10.2307/3711979.

Zinnbauer, B. J., & Pargament, K. I. (2000). Working with the sacred: Four approaches to religious and spiritual issues in counseling. *Journal of Counseling & Development, 78*(2), 162–171. https://doi.org/10.1002/j.1556-6676.2000.tb02574.x.

The Boston University Experience: Religion, Ethics, and Public Health

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Abstract This chapter describes Boston University School of Public Health's (BUSPH) experience integrating the intersection of religion and public health through a course entitled *Religion, Ethics, and Public Health*. The efforts described here have spanned over four decades beginning with faculty experiences in the 1970s that inspired the first iteration of the course in the 1980s and early 1990s, and the re-introduction of the course in 2013, following an extended hiatus. We begin by describing the community around BUSPH and the circumstances that inspired the initiation of the course. Next, we discuss iterations of the course through the 1980s and early 2000s. We then describe the course as it stands today, providing an in-depth description of course objectives, week-by-week themes, case study examples, midterm and final assignments, an outline of our key conceptual framework, and various methods of course evaluation. In closing, we discuss the challenges and facilitators we've faced along the way as well as lessons learned, which we hope will benefit other schools of public health that wish to introduce similar courses.

Keywords Religion · Ethics · Public health · Boston · Bioethics · Human rights

1 Boston University School of Public Health Setting

Boston University School of Public Health (BUSPH) was founded in 1976 as a program offering night classes for Boston-area students working on the frontlines of public health efforts in the city. Over time, BUSPH has grown into a nationally ranked school of public health with over 150 full-time faculty and 1000 students,

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while maintaining its emphasis on practice-based curriculum and a deep commitment to real-world practice (Rubin 2016). The BUSPH campus sits in the heart of Boston's South End neighborhood alongside Boston Medical Center (BMC). The Boston University public health and medical communities have historically served the city's vulnerable populations, including refugees, the homeless, and people struggling with substance use. Today, BMC is the largest "safety net" hospital and busiest trauma and emergency center in New England, with 59% of patients from underserved populations, and 31% whose primary language is not English (Boston Medical Center 2016).

This chapter details the creation of a public health course entitled *Religion, Ethics, and Public Health*, inspired by faculty experiences in the 1970s, deployed in its first iteration in the 1980s, and, after an extended hiatus, re-introduced in 2013. The course is a 4-credit elective course open to all graduate students across Boston University, but specifically marketed to medical, public health, and theology students. The course meets 2.5 h weekly for 15 weeks. Course activities include guest speakers, weekly case studies and other course readings, class discussion, and lectures. Assessments include weekly reflections, a key informant interview project, and a final paper and presentation. This chapter describes the early history of the course, including the process for approval, the revival of the course in 2013, a thorough description of the course itself, various methods for evaluation, and barriers and facilitators to creating a course like this, given our experience.

2 Brief History of the Course: 1970–2010

In the early 1970s, a young college student named Michael Grodin volunteered in the hospital's emergency department, witnessing firsthand the impacts of social determinants on health. In the midst of the singular chaos of a busy trauma center, he recognized that a purely allopathic approach to healthcare was not enough to address the multi-faceted needs of patients and families. He also noted the breadth of patients' religious and spiritual backgrounds, developing a curiosity for the way these beliefs shaped their health and wellbeing.

In 1979, after completing medical school and residency, Grodin returned to BMC as an attending physician and director of pediatric emergency medicine. He began rounding with hospital chaplains to learn about their approach to patient care and, in doing so, deepened his understanding of the link between health, spiritual wellbeing, and human rights. Many of his cases highlighted the complex interaction of these domains. For example, one child came into the emergency room for an upper respiratory infection and during examination, the medical team found burns due to coin rubbing, a traditional Asian practice where the skin is rubbed with a coin to alleviate illness (Yeatman and Van Dang 1980). For Grodin, the case presented a quandary. The child was not being admitted for burns, and the parents truly believed that this practice would help heal their child. Was it the medical team's responsibility

to intervene? Was this a case of child abuse? What was the role of Western medicine in light of these older, traditional healing practices? What were the child's rights in this case? What were the parent's rights? Other cases, especially those dealing with pediatric death, forced Grodin and the chaplains to face difficult questions from families like why God allows a child to suffer and die. Experiences like these encouraged Grodin to deepen his study of religion, ethics, and public health, eventually leading him to join the BUSPH faculty and become the hospital's medical ethicist.

During the 1980s, Grodin developed a wide span of relationships with other university faculty interested in religion and health, including a Jesuit priest and BUSPH faculty member, Daniel Merrigan; a Methodist minister, Laurel Barton; and a Jewish Rabbi, Herbert Tobin. The friendship circle looked like a metaphor for a standard bar joke: What happens when a priest, a rabbi, a minister, and an ethicist walk into a room? But instead of a punch line, these relationships led to the development of a new course titled *Religion, Medicine, and Public Health Policy*. Housed in BUSPH's Department of Social and Behavioral Sciences, the course was first offered in the fall of 1988 to public health, medical, and theology students. In a 1990 paper describing the course, the faculty wrote:

> Despite educational innovations, surprisingly little attention has been paid to the interrelationship of religion and moral theology with medical and health care practice. This pedagogical separation of medicine from spirituality is all the more interesting in view of the extensive history of medical care delivery by and within religious organizations…Religion has played and continues to play a role in the lives of patients and practitioners. Where there has been increasing discussion about the proper role and limits of religious traditions within medicine and public health, there is no question that practitioners will need to be educated about religious traditions and their impact on the health care delivery system. (Grodin et al. 1990)

The course had four primary objectives: (1) broaden understanding of religious values and beliefs in personal and cultural contexts; (2) promote recognition of the role that religion and moral traditions play in shaping personal attitudes, values, and behaviors; (3) identify the perspectives that different religious traditions bring to patient care, disease prevention, health promotion and public health policy formation; and (4) derive principles from health and religious perspectives, which contribute to greater humanization of the health care systems and public health policy. While the BUSPH curriculum committee was initially apprehensive about the course, positive student course evaluation and consistent enrollment allowed the course to run successfully for several years.

In the early 1990s, BUSPH entered an aggressive period of growth and several course faculty received promotions within the university, severely limiting their available time to run the course. Eventually, the course stalled. During this period, Grodin deepened his interest in bioethics and human rights, working with bioethicists like George Annas to publish three textbooks and establish a health law, bioethics, and human rights department (HLBHR) at BUSPH. While teaching in the new department, Grodin recognized four lenses used to instruct students on ethical domains relating to public health: health law, bioethics, and human rights – each codified in the name of the department – and also religion. The first three were

taught effectively but the latter, religion, was missing entirely. As the department grew, he recognized the newfound possibility of housing his old course in the department and set out to re-boot the curriculum.

3 Gaining Course Approval: 2010–2013

Efforts to re-vamp the course began in 2010. Due to its nearly 20-year hiatus, the original course had lost its BUSPH curriculum approval. The school was also under different leadership, and Grodin had to again make clear to skeptics the distinction between teaching religion and teaching *about* religion. In the midst of the HIV/AIDS pandemic, public health practitioners had witnessed many poor, highly public examples of religious communities naming, shaming, and blaming people living with HIV/AIDS and were much less aware of the positive engagement of religious actors in the HIV/AIDS response. Other topics like needle exchange programs, substance abuse treatment, sexual health, and family planning also highlighted tensions between public health and religious communities. Thus, a strong case had to be made to school leadership for why and how religious literacy would enable better community engagement and help to prepare a better public health practitioner.

On the other hand, unlike the first time the course was offered, there was now more literature, entire journals, and conferences devoted to the intersection of religion and health. The medical community had begun to acknowledge that religion was an important piece of patient experience, and chaplains were gaining ground in being viewed as an important part of patient care. Grodin and colleagues asked: If medicine is moving in this direction, why not public health? In the end, the course gained approval by emphasizing the way it would develop effective public health practitioners with greater religious literacy, cultural humility, and capacity to serve diverse communities.

4 Course Revival: 2013

In the Spring of 2013, the course was offered again as a 4-credit course, this time entitled *Religion, Ethics, and Public Health*. Grodin worked extensively with two research assistants, Miriam Segura-Harrison, MD, CLC and McKenna Longacre, MD to inventory the growing body of literature and organize it into themes that would be meaningful for public health students. This time, the course would be built around case studies, as there was still no suitable textbook devoted to the subject matter.

The course was marketed to public health students as well as students across the broader Boston University campus, including medical students and theology students. At the time, the course was listed as a public health elective available to all six BUSPH concentrations.

5   Course Description

Religion, Ethics, and Public Health introduces students to the interface of religion and public health by discussing health-related aspects of a variety of Western and Eastern religious traditions, health controversies that exist within those traditions, and methods that can be used to reconcile public health needs with religious traditions. Students are challenged to harmonize public health priorities with cultural beliefs in a way that best serves the community, by critically examining a variety of case studies. The culminating goal of the course is for each student to develop a nuanced conceptual framework that will enable them to approach some of the most controversial issues relevant to the intersection of religion and public health. Working toward this framework includes discussing policies and strategies to gain consensus and build compromise.

The course has four learning objectives: (1) Explore different texts, doctrines, attitudes, values and behaviors from the major Eastern and Western religious traditions; (2) Describe the role of religious institutions in framing ethical debates, with implications on both policy making and practice, while exploring the relationship between morality and decision-making in public health policy; (3) Analyze specific critical debates at the interface between religion and public health policy, while comparing and contrasting religious, ethical, legal and human rights approaches to health problems; and (4) Demonstrate the ability to address public health topics with appropriate religious literacy by developing a conceptual framework from which to approach religious issues that arise in the context of public health.

The course consists of three major assignments: weekly reflection papers, where students synthesize the weekly readings and apply their knowledge to their argument; a final paper, where students come up with a topic, research it, and propose a solution or compromise on the problem using a conceptual framework (See Box 1);

Box 1: Sample Titles from Final Papers

Unsafe Burial Practices in the Time of Ebola

Religious Exemption Clauses for Mandatory Vaccinations

The Journey to Motherhood: Assisted Reproduction and Surrogacy within Islam

Views on Abortion Throughout Black Church Communities in the US

Islamic Resilience in Bosnian Refugees in the US

Catholic Liberation Theology and the Allocation of Scarce Resources

Reframing HIV/AIDS in Islamic Communities: Responding to a Silent Epidemic

Chaplaincy at Boston Medical Center: A Case for More Staffing, Funding, and Support

Conflict between Christian Science healers and the Biomedical World

Hospital Nutrition Services for Patients with Religiously-Based Food Requirements

Table 1 Weekly topics and reflection questions

Introduction to religion in public health	
Week 1	How are religion, medicine, and public health policy connected? Should they be connected? Why is it important for public health professionals to understand religious contextualization?
Part I: Religious traditions and public health policy	
Week 2	What are the major aspects of the western religious traditions that influence public health policy?
Week 3	What are the major aspects of the eastern religious traditions that influence public health policy?
Part II: How current health policy interacts with religious traditions	
Week 4	Public health policy: How are religious communities affected by it? How do they have an impact on it?
Week 5	What is the relationship between spiritual healing, religiosity and public health?
Week 6	Are the civic concepts of free exercise and religious exemption at odds with public health?
Week 7	What is the conflict between the right to health and the right to worship? How can public health policy best serve the individual?
Part III: Religion and public health in controversy, case studies	
Week 8	Does/should religion influence the allocation of scarce resources (rationing)?
Week 9	What role does religion play in public health policies pertaining to reproduction, contraception, sexuality, and HIV?
Week 10	How does religion affect women's right to health with respect to abortion, contraception, female genital mutilation, self-determination and social equality?
Week 11	How has religious philosophy and practice influenced genetic research and testing?
Week 12	How do religious philosophies and practices apply to end of life decisions?
Part IV: Creating a framework for addressing religion in public health	
Week 13	What are appropriate roles for religion in public health?
Week 14 & 15	Oral presentations

and a "practicum," a key informant interview with someone who works at the intersection of public health/healthcare and religion on a regular basis.

The course meets once weekly for two and a half hours. The format consists of handing in and discussing the weekly reflection, a brief overview of the readings, in-depth lecture on the week's topic, and extensive discussion of the topic for the remainder of the class. The course outline is organized around for main parts (See Table 1).

The first day of the course starts with a values clarification exercise (Barnes 2003, see Box 2), where students examine their own values going into the course and can compare their answers after taking the assessment again at the end of the course. Part I explores six main Eastern and Western religious traditions including, Judaism, Christianity, Islam, Hinduism, Buddhism, and Taoism. These brief introductions serve as a way to assure the class has the same basic knowledge of these religions. Students also read from the Park Ridge series (Park Ridge Center 1996), which provides a brief overview of how religions approach various health topics,

> **Box 2: Values Clarification Exercise (Barnes 2003) (Reprint Permission Obtained)**
> 1. What are the stories involving religion in your family of origin/group(s)?
> 2. Is there a dominant religious/spiritual tradition in your family background?
> 3. What are the ranges in adherence to that tradition?
> 4. What other traditions were (are) present in your surrounding community?
> 5. How did or does your religious/spiritual formation influence your understanding of health, disease, illness, death, dying, abortion, sexual orientation, gender, reproduction, pain, suffering, and the meaning of life?

such as birth control and end of life care. The Park Ridge text is not exhaustive, and students are encouraged to critique its content, particularly if they feel it misrepresents their own religious background.

Part II applies the overview of world religions and religious approaches to select health issues. For example, students learn how religion and health can work together in a synergistic way, such as the role of Black Churches in community health outreach programs. Students also learn how work between public health practitioners and religious communities can encounter obstacles, such as interpretations of mental illness. Students are then asked to explore how religion and spirituality are correlated with improved health outcomes, reading various publications from authors like Dr. Harold Koenig. Part II ends with a two-session exploration of the discourse around religion and government in the United States, including (1) the tensions between freedom *of* religion and freedom *from* religion (the free exercise clause and the establishment clause in the US Constitution) and (2) the right to health and the right to worship. Cases in these sessions include: the care of children whose parents are Christian Science followers, refusal of blood transfusions by Jehovah's Witnesses, the use of peyote in the Native American community, mandatory employee drug testing, and physician assisted suicide.

Part III explores case studies of religion and public health in controversy, which stimulates an application of student knowledge. The first class of Part III examines allocation of scarce resources on a micro (organ transplant) and macro level (the Affordable Care Act) and the way religious voices weigh in on each issue. The second class examines well-recognized controversial case studies between religion and public health, such as contraception, abortion, HIV/AIDS prevention and treatment, and intravenous drug use. The session introduces a human rights framework, asking whether or what type of relationship exists between religion and human rights (relativism vs. universalism). The third class carries on these themes with case studies on abortion, female genital cutting, and the relationship between self-determination and social equality. The fourth class uses forward-looking case studies featuring assisted reproductive technologies and genetics to help the class hypothesize how debates between religion, public health, and human rights will continue into the future.

Part IV enables students to synthesize their learning and apply a conceptual framework that can be used in their future work when and if they encounter the intersection, tensions, and opportunities between religion and public health in practice. The framework has six elements: (1) understanding the nature, scope, and context of the problem; (2) identifying available options and alternatives; (3) recognizing religious constructs that may enhance or impede understanding; (4) acknowledging the source of authority and autonomy by asking: who should make the decision in the case? The individual, the public health practitioner, the sacred text, the court, the faith community, etc.; (5) asking how the decision could be made, engaging the various stakeholders; and (6) after implementing the decision, re-evaluating the impact, with the understanding that resolutions to conflicting viewpoints are imperative and iterative.

Students test the framework with challenging case studies on assisted death, euthanasia, suicide, and foregoing life-sustaining treatment like artificial hydration and nutrition. In a two-part discussion, students begin to use the framework to approach these issues while considering various religious approaches to the topics. These religious approaches include the difference between extraordinary and ordinary care, "the double effect" from Catholicism (e.g., performing an action which is not morally wrong but may have an unintended negative effect, for which the person is not held morally culpable, such as removing a cancerous uterus, which may result in the woman become sterile), and the Jewish conception of brain death (e.g., some Jewish followers believe that scriptures do not address brain death, and therefore, death can only be determined by cardio-respiratory criteria). Other theoretical considerations are taken into account, such as the role of religion in self-determination at the end of life, the "slippery slope" of medical interventions (e.g., morphine and assisted suicide), and what it means to die a good death from a religious and rights-based approach. The last class of Part IV sums up the entire course by asking how public health practitioners should approach religion and religious actors in order to best serve communities and whether religion has too great or too small an influence on current health policy. The final three classes allow time for student presentations of their final paper topic.

Guest lecturers play a pivotal role in the course, giving students exposure to real-life examples of the class topic and how relationships between religious groups and public health practitioners play out in practice. Lecturers have included faculty who have conducted community-based participatory research in the area of faith-based health interventions; scholars from the school of theology to better explain the nuances of certain religious approaches to health, particularly Islam; chaplains from hospitals with both scarce and abundant resources; scholars in the area of Catholic healthcare ethics, and many others.

Real-life application of the course themes is furthered by the student "practicum" assignment, which comprises one in-depth key informant interview with someone working at the intersection of public health and religion. Here, students seek out a person whose work aligns with their own interests and in addition to the interview, are encouraged to observe the person's work if possible. Some students use their practicum experience as the basis for their final paper, while others take the opportunity to explore different types of interactions between public health and religion.

6 Course Evaluation

The course has undergone three forms of evaluation since 2013. The first is the standard BUSPH course evaluation, in which the course repeatedly earned high marks from students in all areas of the survey. The second evaluation compared students' responses to the values clarification exercise from the beginning of the semester and the end of the semester. This evaluation did not show significant changes over the time period, likely because students who chose to take the course came in with existing positive beliefs about the topic, both personally and as part of their career preparation.

The third evaluation was conducted over a 3-year period, designed by Grodin and teaching assistant Christina Gebel as part of course quality improvement. This survey was administered at the end of the course and asked open-ended questions with five intended goals: (1) Assess change in religious literacy among students; (2) Explore student growth in analytical and conceptual skills as well as ability to apply content to real-world examples; (3) Assess students' readiness to address issues at the intersection of religion, ethics, and health; (4) Explore student reflections on how the content of the course might affect their future practice of public health; and (5) Explore students' perceptions of the course and perceived value in this learning as part of their public health education. Qualitative data were analyzed from 3 years of responses.

The findings concluded that students felt better prepared to act in four areas: (1) Patient Care: Interacting with patients who had religious needs and preferences, understanding a patient's religiously-informed decision making, and widening their definition of health as one to include spiritual wellness; (2) Community Relations: Creating effective faith-based partnerships, engaging in dialogue about issues concerning religion and health, increasing cultural humility by understanding a community's religious identity, all of which related to working both in the US and globally; (3) Policy Creation and Intervention Strategies: Including religion as a social determinant of health, recognizing an individual's value of religion when forming policies and designing and implementing interventions; and (4) Career Readiness: Increasing a student's knowledge and skills as well as asking them to be personally transformed by challenging their own beliefs and assumptions. For a more in-depth look at evaluation findings, please read "The Addition of a Religion, Ethics, and Public Health Course: Student Learning Experiences and Implications for Future Work in Public Health" (Gebel et al. 2017).

7 Challenges and Facilitators

Despite outstanding reviews in school evaluations, the revised course has faced a number of challenges. In its Spring 2013 inauguration, the course was popular with 17 students enrolled. In years 2014–2016, enrollment dropped to an average of 7–8

students, which allowed the benefit of seminar-style lectures and rich discussion but raised questions about the sustainability of the course, particularly among high-level administration. While the reasons for enrollment decline are not entirely clear, a variety of factors contribute as barriers. Facilitators have emerged, as well.

7.1 Time Constraints Facing the Targeted Student Audience

Despite interest from medical students, demanding coursework and rotation schedules meant that medical students did not have time to enroll in a 4-credit elective course. While some theology students participated in 2013, cross enrollment waned in subsequent semesters as courses with similar topics were initiated in other BU schools. Public health students also struggled to fit a 4-credit course into their semesters, as many chose to double-concentrate, leaving little time to take electives.

7.2 Misunderstanding of the Course Content

From its beginning, the course has faced varying levels of suspicion and, at times, has been misunderstood altogether. The largest hurdle to overcome was clarifying that the course taught *about* religion, but did not espouse theological positions or attempt to elevate one religion over another. Some administrators expressed concern that the course would pass into the realm of theology, raising the risk of religious indoctrination or proselytization. These misunderstandings may have come, in part, from historic tensions between public health and religious actors and institutions around certain issues like HIV/AIDS and family planning. The overemphasis of differences between groups underscores the need for a course that openly examines controversial and difficult issues between groups.

7.3 Navigating Evolving Curriculum Design and Students' Desires for Learning and Skills

The longevity of the course has been challenged by changes to degree requirements. Recently, BUSPH has undergone a shift in curriculum from six concentrations in public health to a Common Core curriculum with various certificates in knowledge and skills areas. This shift was largely in response to students' desire to have more flexibility in their learning and more skills-based learning. While the current administration is supportive of religion as a relevant topic for public health practitioners (Galea 2016), there remains a delicate balance between deciding what material all

students should be exposed to (Common Core) and content that is better suited for certificate programs. If not incorporated into Common Core requirements, then this course and others like it will need to align with certificate programs to ensure longevity and inclusion. While the future of that alignment is yet to be determined, we are encouraged by commitment of a small group of faculty and alumni as well as the support of upper administration to discuss the intersection of religion and health in various school forums, including as an element of diversity discussions, seminars, and op-eds or viewpoints in school publications.

7.4 Speaking to a Vocational Sense of Purpose in Public Health

Many students come into public health approaching the career as a sort of vocation (i.e., calling), rooted in deeply held beliefs about justice, equity, and some variation of a right to health. These beliefs are often grounded in ethics, human rights, or religious beliefs, which the course engages at a variety of levels. This course provided a forum for some students to share openly about the religious influences that contributed to their work in public health, as well as analyze the way that other religions have similar motivations towards service and charitable works. For students who were non-religious, the course enabled them to hear the accounts of their peers' engagement with religion, and perhaps recognize the interface between religion and public health in a new dimension.

8 Lessons Learned

In addition to lessons gleaned from the various barriers and facilitators above, there are three overarching lessons. Lesson one: Identify course champions. For decades, Grodin, students, and other BUSPH faculty have worked tirelessly to change the discourse around public health and religion from a conversation of suspicion and tension to one of recognition, productive dialogue, and integration. It is paramount to identify at least one faculty member and a small group of committed students to become champions of the course in order to work with upper-level administration for course approval and advertise course availability when it is approved.

Lesson two: Clearly frame the need for a course on religion and health in a school of public health. Two arguments are particularly useful. First, public health serves populations, and in the United States today, roughly 84% of people identify as religious (Pew Research Center 2015). Second, religion influences many of the social determinants of health including what people eat, where they live, their family size, where and how children are educated, among others. Given religion's influence and its scope, developing basic religious literacy aligns with our commitment

to population health. Lesson three: Emphasize the mission for schools of public health to prepare effective public health practitioners to serve diverse populations in the US and abroad. While public health readily recognizes racial and ethnic diversity, religious diversity is often overlooked or addressed with unproductive generalizations. As the US population becomes more diverse, including an influx of immigrant and refugee populations, and many public health students work abroad, this element of diversity must be addressed as part of inclusive learning.

9   Conclusion

At a time of growing religious extremism around the globe, it is important to expose public health students to a course which carefully considers how religious identity impacts population health and individual health behaviors, and to do so within the context of an open learning environment where students can wrestle together with the questions this intersection poses. Only then can we fulfill our role as educators of the next generation of public health practitioners striving to serve the world's diverse communities.

References

America's Changing Religious Landscape. (2015). *Pew Research Center: Religion and public life*. http://www.pewforum.org/2015/05/12/americas-changing-religious-landscape/. Accessed 28 Aug 2016.

Barnes, L. (2003). *Values clarification exercise. Developed for course: The cultural formation of the clinician: Implications for practice*. Boston: Boston University School of Medicine and Graduate Medical Sciences.

Boston Medical Center. (2016). *About BMC*. http://www.bmc.org/about.htm. Accessed 16 Aug 2016.

Galea, S. (2016). *On religion and public health*. Boston University School of Public Health Dean's Note. http://www.bu.edu/sph/2016/07/24/on-religion-and-public-health/. Accessed 29 Aug 2016.

Gebel, C., Longacre, M., Oman, D., Segura-Harrison, M., Grodin, M. A. (2017). *The addition of a religion, ethics, and public health course: Student learning experiences and implications for future work in public health* (Unpublished manuscript).

Grodin, M. A., Merrigan, D. M., Burton, L. A., & Tobin, H. C. (1990). Religion, medicine, and public health policy: Explorations in teaching. *Journal of Health Care Chaplaincy, 3*(1), 73–80. https://doi.org/10.1300/J080v03n01_08.

Religious Traditions and Health Care Decisions. (1996). *The Park Ridge Center*. Cambridge, MA: Religious Traditions and Health Care Decisions.

Rubin, R. (2016). Profile: Boston University School of Public Health at 40. *The Lancet, 387*(10017), 422. https://doi.org/10.1016/S0140-6736(16)00214-2.

Yeatman, G. W., & Van Dang, V. (1980). Cạo Gío (Coin Rubbing): Vietnamese attitudes toward health care. *JAMA., 244*(28), 2748–2749. https://doi.org/10.1001/jama.1980.03310240040021.

Faith Matters: "HBHE 710: Religion, Spirituality and Health" at the University of Michigan

Linda M. Chatters

Abstract This essay is an overview of the author's experiences in developing and teaching a course on religion, spirituality (R/S) and health in the Department of Health Behavior and Health Education (HBHE) in the University of Michigan, School of Public Health. The first section describes her professional background in relation to this content area, including a discussion of her research on R/S, as well as her personal experiences with diverse forms of religion and spirituality. This is followed by a description of the development of content for the course, perspectives presented and content boundaries, learning goals and student competencies, and how these elements were aligned with course assignments. The next section reflects on classroom climate, establishing multicultural ground rules, and student reception and experiences with course material and assignments. Finally, the essay ends with comments on student reception and experiences and the author's reflections on areas for revision and improvement in delivering a course on religion, spirituality and health to MPH level students.

Keywords Social determinant · Cultural competence · Cultural humility · MPH competencies · Learning objectives · African Americans · Public health competencies

1 Professional and Personal Background

I have a longstanding professional interest in religion and spirituality (R/S) with a focus on the African American population and patterns of religious involvement and spirituality (Chatters 2000). African Americans are distinctive with respect to R/S and, as compared to the general U.S. population, demonstrate comparatively high

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levels of involvement, use of R/S-based coping strategies, and unique denominational profiles (Taylor et al. 2004). A strong historical tradition links African American religious communities with civic and community development initiatives, educational activities, political mobilization, health promotion and social welfare efforts, and civil rights and social justice movements. African American religious institutions have both historic and contemporary roles in providing important material, psychological and emotional resources that support the physical and social well-being of black communities, families and individuals (Lincoln and Mamiya 1990; Taylor et al. 2004).

My research interests include examining various dimensions of R/S (i.e., organizational, non-organizational, subjective), their social and demographic correlates (e.g., age, gender, region) and pathways and mechanisms for R/S effects among African American and Black Caribbean populations. This work is based on theoretical and conceptual frameworks outlining pathways and mechanisms linking R/S and social and health outcomes, including social networks, social support, and stress and coping models (Fetzer Institute/NIA 2003). A focus on ethnic differences (i.e., African American, Black Caribbean) within the Black population, as well as within-group differences (i.e., demographic, psychosocial) in these respective groups, reveals potentially unique R/S dimensions and relationships with physical and mental health outcomes of interest. The National Survey of Black Americans (NSBA) and the National Survey of American Life (NSAL), collected by the Program for Research on Black Americans at the Institute for Social Research, University of Michigan are the primary data sources for this work that examines: (1) basic profiles of religious involvement (Brown et al. 2013, 2015; Taylor and Chatters 2011; Taylor et al. 2014), (2) religious based social support networks or church-based support (Nguyen et al. 2013; Taylor et al. 2011b, 2013), (3) religious correlates of mental disorders and suicidality (Chatters et al. 2011a, b; Himle et al. 2011, 2012; Taylor et al. 2011a, 2012), and (4) use of clergy for personal problems (Chatters et al. 2011a, b; Woodward et al. 2015).

My personal background in regards to R/S is eclectic and formative of my work exploring the connections between R/S and health. Although my parents were unchurched, I attended religious services with several friends in my neighborhood and was exposed to several Christian traditions and forms of religious instruction including Roman Catholicism, Presbyterianism, and Evangelical/Holiness. As an adult I did not formally participate in a religious tradition, but continued a personal R/S practice and interest in a range of R/S topics (i.e., historical and contemporary African American religious institutions) and religious and spiritual traditions (e.g., Buddhism, Hinduism and Islam).

2   Student Audience and Broader Social Context

In developing the R/S and health course, I considered both the student audience, as well as R/S related events within the broader social context. The aim was to facilitate students' connections with the course content so that they could appreciate both

their own R/S experiences, as well as those of clients and communities they would work with as public health practitioners. Course content focused on the scientific and professional practice literatures on R/S and health, as well as information from standard media outlets on current R/S issues. Course process required that participants engage in critical analysis of course materials and continual reflection on their own R/S background and understanding, thereby giving students the opportunity to "foreground" personal R/S perspectives and traditions (e.g., Christian) that may be unacknowledged and "taken for granted." Students' reflections on how R/S has shaped their overall life experiences, their implicit ideas about how R/S functions, as well as their beliefs about its relation to mental and physical health, yielded several benefits.

Despite a general social reticence in discussing R/S issues, these concerns are of interest to MPH students. As an age group of emerging and young adults (i.e., 22–30 years), students are encountering R/S issues with respect to their own personal identities, particularly those who have experienced personal health challenges and/or who face life transitions (e.g., partnered/married, planning to marry and/or have a family). The exploration of personal backgrounds and perspectives on R/S helped to establish class norms that encouraged respectful and honest conversations in a supportive environment. Student discussions of real life examples of connections between R/S and health: (1) illustrated the different ways that R/S functions as a determinant of health, (2) demonstrated the diversity of R/S traditions and practice and counteracted group stereotyping, (3) highlighted how other social statuses (e.g., race, ethnicity, gender, socioeconomic position) intersect with R/S identities, and (4) provided information about R/S and social stratification (i.e., social status differences between majority/privileged vs. minority/marginalized R/S traditions).

The course was taught between January and April of 2014, when R/S issues were frequently in the news (e.g., First Amendment and religious freedom initiatives and conscientious objection on religious grounds). Of particular relevance for professional ethical standards for public health, were the U.S. Supreme Court deliberations regarding Affordable Care Act provisions (Burwell v. Hobby Lobby) and national conversations about refusal of services to Lesbian, Gay, Bisexual and Transgender (LGBT) individuals on religious grounds. The increasing prominence of anti-Muslim discrimination in the U.S. and other global events imparted a sense of relevancy that emphasized the personal, social and political connections between R/S and public health.

3   Teaching Approaches

Guided by the saying, "*How* you teach is *what* you teach," specific teaching strategies focused on both *content* (what is taught) and *process* (how content is delivered). The overarching strategy was to 'flip the classroom' (Chronicle of Higher Education 2014) by foregrounding students' personal experiences in relating to the content area, facilitating active learning in acquiring and incorporating new knowledge, and encouraging students' reflections on what course information meant

personally and for their roles as public health professionals (including conflicts between personal and professional perspectives). By way of modeling this process, I discussed my own R/S background and interests and the challenges I encountered in reconciling my position as a social scientist and public health professional with R/S traditions and practices within diverse faith communities. As a class, we engaged in this reflective and discussion process for each assignment and content area covered.

Anticipating that the topic might draw students from diverse R/S backgrounds and specific personal interests in the subject matter, it was important that students explicitly foreground their own R/S backgrounds, experiences and knowledge. At the same time, it was imperative to avoid situations in which students, particularly those who identified with minority R/S traditions in the U.S., felt compelled to explain or 'educate' others about their R/S background. Several strategies were used to address these issues. First, we established clear norms about conversations and dialogue on these issues (see Multicultural Ground Rules https://igr.umich.edu/) that fostered honest and respectful discussion and inquiry. I purposely spoke of my own experiences and discomfort when, as an African American graduate student, I had been asked (as the 'Authority') to educate other classmates and respond to questions and stereotypes about my racial group. This discussion provided the opportunity to: (1) talk about classroom climate and respectful dialogue, (2) acknowledge tendencies to generalize and stereotype social groups and (3) explore and actively utilize the concepts of *within-group* diversity and intersectionality of social identities as a means to counteract stereotyping. Second, course readings and activities focusing on sociological and behavioral science theories of R/S, helped to establish a common ground for underscoring the fundamental similarities in the functions and roles of R/S across diverse traditions.

Third, each participant was required to analyze their own R/S background in regards to: (1) their personal history and perspectives on R/S (including families of origin), (2) how theoretical, empirical and practice literatures in public health corresponds to their personal knowledge of R/S traditions and practices, (3) how public health ethical frameworks, professional standards, and practice models align with diverse R/S traditions and practice, and (4) the ways that R/S constituted a social determinant of health status, health behaviors and health behavior change. In addition to theoretical and empirical literature on R/S, seminar readings included surveys and polls from the Gallup Organization (www.gallup.com) and the PEW Research Center (www.pewresearch.org) focusing on R/S within the U.S. population (Pew Research Center 2008). These resources provided information about R/S profiles for specific demographic groups (e.g., age, gender, race, ethnicity), trends in R/S involvement over time (growth and decline in R/S groups), and R/S and health and social issues (abortion, gun control, vaccinations). These approaches had the dual effect of 'decentering' any particular R/S tradition (i.e., Christian traditions in the U.S. context) and positioning R/S and health as appropriate subjects of academic inquiry.

Setting the Stage: Content I began the seminar by introducing several general principles that would guide our efforts. With respect to content, the seminar focused on

examining the theoretical and empirical literature on R/S and health. Due to the fact that the vast majority of empirical studies focus on non-Hispanic White, Christians in the U.S., information on R/S and health within diverse religious, racial and ethnic minority groups is scarce (for exceptions see Abu-Raiya et al. 2011; Ali and Milstein 2012; Hodgeet al. 2009; Krause and Bastida 2011; Abu-Raiya and Pargament 2010; Tarakeshwar et al. 2003). In discussing purported R/S effects on health, we focused on biological, psychosocial and behavioral pathways and mechanisms and explored theoretical frameworks and research evidence on explanatory pathways and mechanisms for both positive (e.g., health promotive) and negative (e.g., stigma) health outcomes. Although R/S traditions, belief and practice encompass other possible pathways and mechanisms that are not currently amenable to scientific verification, I acknowledged that these were beyond my areas of expertise and the scope of the seminar (see also chapter "Model of Individual Health Effects from Religion/Spirituality: Supporting Evidence," this volume). Finally, the seminar would specifically examine R/S content in relation to theoretical and conceptual frameworks (e.g., social support, self-efficacy) from the health behavior literature, as well as discuss R/S in relation to MPH Professional Competencies.

Setting the Stage: Process Identifying learning goals and expectations for the learning environment and discussing behavioral norms were important first steps in establishing group process. At the beginning of the seminar, each student discussed with me their personal and professional learning goals. In order to make the course materials and assignments more transparent, I used a process of 'deconstructing the syllabus' and assignments to identify the rationale for specific readings and seminar content, written assignments, and the use of grading rubrics for assignments. As a group, we discussed the seminar as an opportunity to participate in a co-learning environment where all members possess relevant knowledge and perspectives as both learners and teachers. We recognized that some content might be novel and unfamiliar to us, and other content, while familiar, could be considered from different theoretical, research, or practice perspectives. When learning new information from others, seminar participants were encouraged to engage in active listening and model honest and respectful inquiry. In sharing information, participants were asked to monitor their own personal boundaries about what they felt comfortable sharing in the group and requests for confidentiality were to be honored by seminar participants.

Background materials came from several sources including the University of Michigan's Statement of Civility and the SPH Civility Code (2016), resources from the Center for Research on Learning and Teaching (CRLT- http://www.crlt.umich.edu/) on handling controversial topics in the classroom and the *Multicultural Ground Rules* document from The Program on Intergroup Relations (2016). The statement on Multicultural Ground Rules was particularly helpful in acknowledging our personal responsibility for critically questioning our "received knowledge" (from family, community and society) about R/S in terms of specific groups, practices and beliefs and in furthering our own learning on these issues. Finally, readings on Cultural Humility (Tervalon and Murray-Garcia 1998; M. Tervalon www.

melanietervalon.com) were discussed as a direct challenge to 'cultural competency' frameworks. Cultural humility emphasizes ongoing and dynamic cultural change and the importance of practitioners' acknowledgement of their own and clients' identities and positionality in terms of membership in various social status groups (e.g., gender, age, socioeconomic position). Cultural humility's approach of ongoing critical reflection is a corrective to 'essentialist' perspectives that stereotype practices and beliefs of R/S traditions and addresses important issues in professional education and practice, client and community trust and engagement, and social justice.

4   Seminar Structure and Requirements

HBHE710: Religion, Spirituality and Health was taught as a small seminar in the winter term of 2014. Course readings included behavioral, psychosocial and sociological theories and frameworks of religion-health relationships, research studies examining R/S and attitudinal, behavioral, physical and mental health and psychological well-being outcomes, and R/S and health research in specific populations and religious groups. Additional course content focused on perspectives from religious surveys of the general U.S. population, with attention to groups that are religious (e.g., Muslims, Hindus) and/or racial/ethnic minorities (e.g., Hispanics, Asian Americans, and American Indians).

Courses in the Department of Health Behavior and Health Education (HBHE) are required to address specific content requirements in identifying student learning objectives, relevant MPH competencies for health educators and professional ethics and social justice issues in public health practice. For example, one student learning objective was: *Provide participants with a theoretical and practical understanding of the definition and measurement of religion and spirituality (R/S) and their connections to and roles in health status, health outcomes and health-related behaviors.* An identified MPH Competency was: *Describe some of the challenges of using social and behavioral theories and models to inform programs involving multiple levels of change such as individual, family, community, and faith-based settings.* An identified professional ethics and social justice consideration was: *Explain how professional practices relate to equity and accountability among religiously and spiritually diverse individuals and community settings and faith-based settings.*

Seminar assignments mirrored content from the learning objectives, MPH competencies, and professional ethics and social justice. *Assignment 1: Religion and Spirituality History* was a structured, self-assessment of R/S influences, beliefs and practices designed to enhance students' knowledge concerning religion and spirituality within their multigenerational family system. Directed questions identified facts and patterns related to spirituality and religiosity in the students' background, while discussion and analysis was informed by the readings on R/S dimensions and social patterning (e.g., education, income, race/ethnicity). *Assignment 2: Religion and Spirituality Autobiography and Professional Roles* extended the self-assessment

of R/S in examining MPH professional roles and competencies. Students used a set of directed questions to explore their own religious/spiritual background and its relation to their professional roles and activities as a health educator. This discussion included identifying areas of alignment and conflict and strategies for resolving apparent conflicts. *Assignment 3: Religion/Spirituality and Health Profile* was an integrative profile of R/S factors that are significant for understanding a specific health condition or issue within a defined population and was designed to provide targeted information with a short analytic summary. Health Profiles provided information about the broader context for the selected health problem/issue (e.g., epidemiological, psychosocial, and social systems), discussed R/S factors and/or traditions relevant to the health issue or problem, and proposed recommendations for public health research and practice and implications for professional ethics and social justice (e.g., R/S-related attitudes, beliefs and practices regarding genetic testing among Seventh Day Adventists). *Assignment 4: Seminar Leader and Discussant.* Each student prepared a written critique and led a discussion of 1 week of assigned readings. Seminar leaders: (1) developed discussion questions to promote evaluation, comprehension and/or application of information, (2) identified, and integrated key themes, frameworks or concepts in the readings, and (3) discussed how the topic area(s) and readings related to two MPH Competencies and their application to diverse population groups, practice settings, and/or health concerns or issues.

Seminar Activities In addition to course assignments, students were asked to respond to in-class discussion starters or complete short ungraded "homework" assignments designed to foster group interaction and extend thinking about R/S in relation to various topics. We would periodically use discussion starters such as short video clips on R/S news items (e.g., National Public Radio, The New York Times). Public Broadcasting System's (PBS) Religion and Ethics Newsweekly http://www.pbs.org/show/religion-and-ethics-newsweekly/ was a consistent source of thoughtful coverage of religion's role in and the ethical questions related to national and global issues. Several guest speakers presented their work involving R/S and health. Dr. Gary Harper PhD, MPH a faculty member in HBHE related his experiences working with patients and families in hospital settings around psychological assessments and counseling for illness and life-limiting conditions and the psychological harms of religiously-based 'reparative or conversion therapy' for sexual orientation and gender identity. Reverend Jamie Hawley, a Pastor in the Spiritual Care Department at the University of Michigan Health System, spoke about the impact of illness on the family system and religious coping efforts of patients and families. Dr. Aisha Langford PhD, MPH discussed her experiences with faith-placed intervention projects (e.g., health promotion and cancer screening, organ donor registry and enrollment in clinical trials, men's health promotion) in African American churches. Dr. Elizabeth Robinson, PhD, MPH, MSW led a brief in-class session on mindfulness meditation and presented her research on the role of meditation and spirituality in depression and recovery from substance abuse and dependence.

5   Student Reception and Experiences

My comments are a distillation of reflections from student assignments, participating in seminar discussions, and analysis of course evaluation information. The twelve students enrolled in the seminar represented diverse perspectives and R/S backgrounds. Two students identified as Muslim, three students identified as Hindu, 1 student identified as Catholic. Additionally, two students indicated they were not currently active in the Christian tradition in which they were raised; two students indicated having a spiritual identity and orientation as opposed to a religious identity; one indicated a specific interest in spirituality, Buddhism, and Eastern religions. In addition, three students (Muslim, Hindu and Catholic) shared their personal perspectives about the seminar in an article, "Faith Matters" (Stainton 2014a, b) in the Fall issue of UM-SPH *Findings Magazine*.

Students' comments about how R/S influenced their personal and professional lives demonstrated a moral imperative to care for others and a strong commitment to issues of social justice, especially for those who were from minority and marginalized R/S traditions. Equally strong, was awareness that R/S traditions and practices often actively stigmatize specific behaviors and social groups (see also chapter "Social Identity and Discrimination in Religious/Spiritual Influences on Health," this volume). Several students who were specifically interested in faith-based health programming in their own religious communities noted that R/S teachings and practices were often barriers to recognizing health risks and initiating these conversations (i.e., a belief that our community doesn't have these problems).

On a personal level, student responses demonstrated a high level of self-awareness regarding their own positionality with respect to R/S issues. Students who were members of a Christian religious tradition gained insight into their privileged status as a member of an R/S majority in the U.S. Students who identified with a minority R/S tradition articulated their experiences as members of a marginalized group. Students often described R/S in relation to complementary themes involving family, community, and health. For example, students who were children of immigrants (second generation immigrants) reflected on the interrelationships among R/S traditions and practices, the process of immigration, family intergenerational relationships (i.e., parent-child), gender roles (e.g., husband and wife), and attitudes and beliefs about health and help-seeking.

Student themes noted that religious institutions and leaders occupy central and pivotal positions in community life, were major sources of social capital, and possessed substantial authority and legitimacy. Students provided numerous examples of their insights and learning experiences in connecting R/S with a range of health beliefs, practices and outcomes. Student reflections also acknowledged the complexities of R/S and health associations recognizing that they are embedded within overlapping social contexts that are influenced by a variety of factors such as ethnicity, culture, race, gender, socioeconomic position, immigration, and community characteristics.

6   Lessons Learned

In reflecting on the seminar, there is clear evidence that students acquired critical perspectives in terms of content and in how to evaluate evidence regarding R/S effects on health. Course evaluation data, however, indicated that students felt that the seminar was less successful in preparing them to engage in direct practice with individuals, families, faith organizations and broader communities around R/S issues. As students who are being trained as practitioners in a professional discipline, there is a natural tendency and desire to know 'what to do' in different circumstances. Much of the literature related to multicultural training (e.g., race/ethnicity, immigration, religion) adopts a cultural competence perspective with its attendant assumptions of a finite body of information that practitioners can learn that will make them 'competent' (i.e., experts) to practice with diverse groups. Critiques of the cultural competency perspective note that this leads to highly prescriptive approaches in regards to various groups, with little attention to issues of within group diversity, the broader social context, and the dynamics of individual, community and social change (Fisher-Borne et al. 2015). Students' perceptions were accurate in that they didn't learn content that prepared to know 'what to do' in specific circumstances—and that was intentional. However, they did learn that R/S content is important for understanding client behaviors, attitudes and beliefs, as well as how and in what specific ways (e.g., social support resources, coping behaviors, positive beliefs) R/S is important and consequential for the health of clients, families and communities.

There are several modifications I will institute the next time the seminar is offered. I would prepare more thoroughly in handling sensitive content and discussions and include a class session on dialogue that would be facilitated by the Intergroup Relations Program. Participants in the seminar were always very respectful of one another and communicated and asked questions in an honest and responsive manner. However, because students may not have been as well-prepared to engage in dialogue, there may have been self-censoring that likely limited active communication. Although current news stories provided numerous opportunities to discuss R/S in relation to health issues, several events were disconcerting and their immediacy meant that we had little chance to constructively process them. Not wanting to lose these teaching opportunities, more focused time should be devoted to responding thoughtfully to events 'in the moment'. Preparation of this sort is an ongoing process that requires high levels of openness and flexibility responding to events that occur and have their effects across multiple contexts—within the profession of public health, on campus, within the broader community, the U.S., and globally. The Center for Research on Learning and Teaching (www.crlt.umich.edu) provides a number of services to faculty including classroom observations and course consultations. I would request a CRLT course review and consultation in going forward with any new preparation.

Finally, students who are members of R/S traditions that are a minority in the U.S. are exposed to stressors on and off campus and require additional support. The tragic killing of 3 Muslim students at University of North Carolina Chapel Hill on February 10, 2015 is a stark reminder of the real physical risks faced by members of minority religious groups. Recent national debates on Islam and proposed restrictions on Muslim immigrants fuel hostilities and antagonisms that add to a climate of emotional and physical vulnerability. While often unnoticed, unacknowledged or discounted by other students, faculty and campus administration (Chronicle of Higher Education 2015, 2016), ongoing reports of microaggressions, verbal insults and Islamophobia experienced by Muslim students have significant and lasting psychological and physical impacts (Samari 2016). The effort and thought required to bring these and other relevant events into the classroom are considerable and not without risks. Such an approach is needed, however, to prepare students to understand the connections between R/S and health and to fulfill the mission of public health for engaged research, informed practice, and social justice.

References

Abu-Raiya, H., & Pargament, K. I. (2010). Religious integrated psychotherapy with Muslim clients: From research to practice. *Professional Psychology: Research and Practice, 41*(2), 181–188. https://doi.org/10.1037/a0017988.

Abu-Raiya, H., Pargament, K. I., & Mahoney, A. (2011). Examining coping methods with stressful interpersonal events experienced by Muslims living the U.S. following the 9/11 attacks. *Psychology of Religion and Spirituality, 3*(1), 1–14. https://doi.org/10.1037/a0020034.

Ali, O. M., & Milstein, G. (2012). Mental illness recognition and referral practices among Imams in the United States. *Journal of Muslim Mental Health, 6*(2), 3–13. https://doi.org/10.3998/jmmh.10381607.0006.202.

Brown, R. K., Taylor, R. J., & Chatters, L. M. (2013). Religious non-involvement among African Americans, black Caribbeans and non-Hispanicb whites: Findings from the National Survey of American Life. *Review of Religious Research, 55*(3), 435–457. https://doi.org/10.1007/s13644-013-0111-8.

Brown, R. K., Taylor, R. J., & Chatters, L. M. (2015). Race/ethnic and social-demographic correlates of religious non-involvement in America: Findings from three national surveys. *Journal of Black Studies, 46*(4), 335–362. https://doi.org/10.1177/0021934715573168.

Chatters, L. M. (2000). Religion and health: Public health research and practice. *Annual Review of Public Health, 21*, 335–367. https://doi.org/10.1146/annurev.publhealth.21.1.335.

Chatters, L. M., Mattis, J. S., Taylor, R. J., Woodward, A. T., Neighbors, H. W., & Grayman, N. (2011a). Use of ministers for a serious personal problem among African Americans. *American Journal of Orthopsychiatry, 81*(1), 118–127. https://doi.org/10.1111/j.1939-0025.2010.01079.x.

Chatters, L. M., Taylor, R. J., Lincoln, K. D., Nguyen, A., & Joe, S. (2011b). Church-based social support and suicidality among African Americans and black Caribbeans. *Archives of Suicide Research, 15*(4), 337–353. https://doi.org/10.1080/13811118.2011.615703. PMID: 22023642.

Chronicle of Higher Education. (2014). A guide to the flipped classroom. Retrieved on September 13, 2016 from: www.chronicle.com/article/A-Guide-to-the-Flipped/151039

Chronicle of Higher Education. (2015, December 4). San Bernardino shootings underscore culture of fear for Muslim students. Retrieved on September 6, 2016 from: www.chronicle.com/article/San-Bernardino-Shootings/234489

Chronicle of Higher Education. (2016, December 13). Here's a rundown of the latest campus-climate incidents since Trump's election. Retrieved on December 23, 2016 from: http://www.chronicle.com/blogs/ticker/heres-a-rundown-of-the-latest-campus-climate-incidents-since-trumps-election/115553

Fetzer Institute, National Institute on Aging Working Group. (2003). *Multidimensional measurement of religiousness, spirituality for use in health research*. Kalamazoo, MI: Fetzer Institute.

Fisher-Borne, M., Cain, J. M., & Martin, S. M. (2015). From mastery to accountability: Cultural humility as an alternative to cultural competence. *Social Work Education, 34*(2), 165–181. https://doi.org/10.1080/02615479.2014.977244.

Himle, J. A., Chatters, L. M., Taylor, R. J., & Nguyen, A. (2011). The relationship between obsessive-compulsive disorder and religious faith: Clinical characteristics and implications for treatment. *Psychology of Religion and Spirituality, 3*, 241–258. https://doi.org/10.1037/a0023478.

Himle, J. A., Taylor, R. J., & Chatters, L. M. (2012). Religious involvement and obsessive compulsive disorder among African Americans and black Caribbeans. *Journal of Anxiety Disorders, 26*(4), 502–510. https://doi.org/10.1016/j.janxdis.2012.02.003. PMID: 22397898.

Hodge, D., et al. (2009). Moving from colonization toward balance and harmony: A native American perspective on wellness. *Social Work, 54*(3), 212–219. https://doi.org/10.1093/sw/54.3.211.

Krause, N., & Bastida, E. (2011). Social relationships in the church during late life: Assessing differences between African Americans, whites, and Mexican Americans. *Review of Religious Research, 53*(1), 41–63. https://doi.org/10.1007/s13644-011-0008-3.

Lincoln, C. E., & Mamiya, L. H. (1990). *The black church in the African American experience*. Durham: Duke University Press.

Nguyen, A., Taylor, R. J., Chatters, L. M., Ahuvia, A., Izberk-Bilgin, E., & Lee, F. (2013). Mosque-based emotional support among young Muslims. *Review of Religious Research, 55*(4), 535–555. https://doi.org/10.1007/s13644-013-0119-0.

Pew Research Center. (2008). Chapter 1: The religious composition of the United States (p. 10–21) and Chapter 3: Religious affiliation and demographic groups in *U.S. Religious Landscape Survey* (pp. 36–71). Washington, DC: Pew Forum on Religion & Public Life. www.pewforum.org

Program on Intergroup Relations. (2016). *Multicultural ground rules*. https://igr.umich.edu/. Accessed 25 October 2016.

Samari, G. (2016). Islamophobia and public health in the United States. *American Journal of Public Health, 106*(11), 1920–1925. https://doi.org/10.2105/AJPH.2016.303374.

Stainton, L. (2014a). Cultural humility: A 24/7 process. *Findings Magazine* (fall). School of public health, University of Michigan. https://sph.umich.edu/findings/fall2014/world/humility.html. Accessed 6 Sept 2015.

Stainton, L. (2014b). Faith matters. *Findings Magazine* (fall). School of public health, University of Michigan. https://sph.umich.edu/findings/fall2014/world/faith.html. Accessed 6 Sept 2016.

Tarakeshwar, N., Pargament, K. I., & Mahoney, A. (2003). Initial development of a measure of religious coping among Hindus. *Journal of Community Psychology, 31*(6), 607–628. https://doi.org/10.1002/jcop.10071.

Taylor, R. J., & Chatters, L. M. (2011). Religious media use among African Americans, black Caribbeans and non-Hispanic whites: Findings from the National Survey of American Life. *Journal of African American Studies, 15*, 433–454. https://doi.org/10.1007/s12111-010-9144-z.

Taylor, R. J., Chatters, L. M., & Levin, J. (2004). *Religion in the lives of African Americans: Social, psychological and health perspectives*. Thousand Oaks, CA: Sage.

Taylor, R. J., Chatters, L. M., & Joe, S. (2011). Religious involvement and suicidal behavior among African Americans and black Caribbeans. *Journal of Nervous and Mental Disease, 199*(7), 478–486. https://doi.org/10.1097/NMD.0b013e31822142c7. PMCID: PMC3128792.

Taylor, R. J., Woodward, A. T., Chatters, L. M., Mattis, J. S., & Jackson, J. S. (2011b). Seeking help from clergy among black Caribbeans in the United States. *Race and Social Problems, 3*(4), 241–251. https://doi.org/10.1007/s12552-011-9056-0.

Taylor, R. J., Chatters, L. M., & Abelson, J. M. (2012). Religious involvement and DSM IV 12 month and lifetime major depressive disorder among African Americans. *Journal of Nervous and Mental Disease, 200*(10), 856–862. https://doi.org/10.1097/NMD.0b013e31826b6d65. 22986280 PMCID: PMC3464345 NIHMS:403459.

Taylor, R. J., Chatters, L. M., Woodward, A. T., & Brown, E. (2013). Racial and ethnic differences in extended family, friendship, fictive kin and congregational informal support networks. *Family Relations, 62*(4), 609–624. https://doi.org/10.1111/fare.12030.

Taylor, R. J., Chatters, L. M., & Brown, R. K. (2014). African American religious participation. *Review of Religious Research, 56*(4), 513–538. https://doi.org/10.1007/s13644-013-0144-z. NIHMSID #591379.

Tervalon, M., & Murray-Garcia, J. (1998). Cultural humility versus cultural competence: A critical distinction in defining physician training outcomes in multicultural education. *Journal of Health Care for the Poor and Underserved, 9*(2), 117–125.

University of Michigan Statement of Civility and the SPH Civility Code. (2016). Retrieved on October 25, 2016 from: https://sph.umich.edu/omniupdate/civility/index.html

Woodward, A. T., Chatters, L. M., Taylor, H. O., & Taylor, R. J. (2015). Professional service use for a serious personal problem comparing older African Americans, black Caribbeans, and non-Hispanic whites using the National Survey of American Life. *Journal of Aging and Health, 27*(5), 755–774. https://doi.org/10.1177/0898264314559894.

Incorporating Religion and Spirituality into Teaching and Practice: The Drexel School of Public Health Experience

Rabbi Nancy E. Epstein

Abstract Since 2006, the Dornsife School has offered doctoral-level and masters-level students a graduate seminar entitled "Faith, Religion, Spirituality and Health." Framed as a social justice approach to the health of communities, the 10-week course focuses on the psychosocial, epidemiological, environmental, program and policy dimensions of religion, spirituality, and community health. The seminar emphasizes strong student engagement and includes reflective arts, weekly synthesis and reflection papers, active class discussions, visits with guest experts, short research projects, a case-study approach, and a 7-week community-based practicum. On the public health practice level, the school has sponsored trainings with faith communities and religious leaders as well as public health and medical professionals. The author incudes some aspects of R/S in all her courses and has additionally contributed to collaborations with citywide agencies and local multi-faith programs that address trauma, religious competency and diversity, health promotion, and behavioral health.

Keywords Graduate seminar · Faith · Religion · Spirituality · Community health · Reflective arts · Public health practice

1 Introduction

Drexel University and its Dornsife School of Public Health are located in Philadelphia, Pennsylvania, the poorest large city in the United States and one of the most religiously diverse. Informally known as the City of Brotherly Love and Sisterly Affection, it has a centuries-old history of welcoming religious plurality.

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The 20-year old school has deep roots in community-based practice. It has embraced within its strategic plan commitments to social justice, human rights, urban health and eliminating health inequalities through teaching, research, translation of knowledge into practice, and building and maintaining sustainable and equitable community partnerships.

Within this context, it has been the present author's privilege to teach, and continually refine over 10 years, a graduate seminar on faith, religion, spirituality and health as well as guide the school's incorporation of religion and spirituality into its community-based public health practice. This has included a large-scale training for almost 200 clergy and congregational lay leaders about trauma, a smaller-scale training for about 50 health professionals about how to work competently with people who adhere to diverse religious traditions, such as Islam and Santeria, with which they were not very familiar, and numerous related projects with the Interfaith Center of Greater Philadelphia and the Philadelphia Department of Behavioral Health and Intellectual disAbilities Services.

This chapter summarizes the school's teaching and practice around religion and spirituality and goes into great detail about its graduate seminar, focusing on the pedagogical underpinnings, the course description, objectives, and activities. The chapter also provides brief descriptions of practice-based and training activities Dornsife has undertaken with faith communities, religious leaders, and community health professionals.

2 Setting the Context

The Dornsife School of Public Health embraces the WHO definition of health as encompassing physical, mental, and social wellbeing. Ana Diez Roux, M.D., Ph.D., the school's dean and an epidemiology researcher renowned for her work about the impact of neighborhoods on health, has emphasized that:

> "… the health issues faced by city residents have expanded beyond the traditional urban health concerns linked to infectious diseases and toxic environmental exposures to also encompass chronic diseases linked to poor diets, sedentary life styles, and obesity, as well as physical and mental health issues linked to violence, poverty, and unemployment. In addition, because city residents are often very diverse in race/ethnicity and socioeconomic circumstances, cities typically have large inequalities in health across social groups that are often manifested spatially as pronounced differences in health across neighborhoods." (Diez Roux 2015)

Through this comprehensive urban health lens, the school has demonstrated a continuing interest and respect for the importance of religion and spiritual wellbeing to the health of residents, neighborhoods and the city, as a whole.

Philadelphia's religious diversity has been best described by Ram Cnaan and colleagues in their landmark book, The Other Philadelphia: How Local Congregations Support Quality of Life in Urban America. In it, they reported detailed results from the first-ever census of congregations in a large American city and documented the

Box 1: Philadelphia Congregations and Public Health
In their surveys and extensive interviews with religious leaders representing 1392 houses of worship, Cnaan et al. found that 80% of Philadelphia's residents were connected with a place of worship (average size 322 members) and that more than 40% lived within a mile of the congregation. Their interviews, in particular, provided a dramatic picture of the role that religious communities play in providing an extensive safety net of formal and informal care to people who are challenged or unable to meet their basic needs. According to their study, more than 70% of congregations reported being located in neighborhood areas that faced a high number of public health problems and poor social determinants of health, specifically citing substance abuse and drug trafficking, poverty, crime, illiteracy, quality of public education, teen pregnancy, HIV/AIDS, family violence, lack of affordable housing and homelessness. Additionally, 16.8% of congregations reported that 20% or more of their members were unemployed (Cnaan et al. 2006).

presence of over 2000 congregations representing 181 different religious traditions and denominations (Cnaan et al. 2006). As indicated in Box 1, the census revealed that more than 80% of Philadelphia residents were connected with a place of worship, often within a mile of their homes. More than 70% of the 1293 religious leaders they interviewed reported that their congregations were located in neighborhoods with high rates of public health problems and unemployment.

These facts have provided the context for me, in my role as Associate Professor, to include readings about religious health assets, social and spiritual capital and building community partnerships with faith-based communities and religious leaders into all the community health courses that I teach and to encourage other faculty to do the same.

3   A Compelling Realization

In 2000, I moved to Philadelphia to enter seminary at the Reconstructionist Rabbinical College and also joined the school of public health faculty. After 20 years in public health practice, I was excited to teach and looked forward to sharing with students and faculty colleagues what had drawn me, as a longtime devoted public health professional, to seminary. I had repeatedly witnessed the enduring strength and resilience of people and of communities and come to understand how intimately this was tied to the power of their relationships, including their relationships with God, Spirit or that which was unnamed yet numinous. My observations corresponded closely with the scientific evidence that is so clearly laid out in Part I of this book about the impacts of religion and spirituality on health.

This understanding did not come simply. It came as the result of working in diverse roles in many different settings to promote health at the individual-level, the community-level and the societal-level. After I completed an MPH in 1980, I was first a grassroots community organizer working with farmers, followed by roles as a hospital-based community health educator, a state legislative committee director, a state and then national agency program director, a lobbyist, a consultant to foundations and non-profit organizations, a chaplain, and a rabbi working with synagogues and their leaders across North America. These roles spanned U.S. geography ranging from the North Carolina to Texas to Washington, D.C. and finally to Philadelphia.

In each position, I discovered anew how important religious and spiritual experiences were to the people with whom I worked and to the people that were served through the public health programs I managed. People were eager to talk about their relationships, particularly their spiritual and religious experiences, in hallways, standing in parking lots, and over meals. But in professional contexts, these same people were noticeably reluctant. I wondered whether it was due, perhaps, to the entrenched separation of church and state in our country (despite the U.S. being considered the most religious country in the world), or the more private, intimate nature of spirituality and religious practices, or the greater professional comfort that public health professionals feel in talking about health outcomes that they are sure can be measured. It seemed that many, perhaps most, of my public health colleagues in all these various settings did not know about what was emerging as an enormous body of now more than 3000 research studies demonstrating religion's and spirituality's relevance to health. I wondered "If they did know, would they embrace or more affirmatively acknowledge the importance of spirituality and religion to individual health, community health and societal wellbeing?"

In my work as a public health academic and as a rabbi, I have dedicated myself to bridging this gap. I am committed to integrating religion and spirituality into our understanding of health and wellbeing in public health. I have also come to believe that as public health professionals, we do a disservice to individuals, groups, communities and larger society when we intentionally or unintentionally leave religion and spiritualty factors out of our discussions, our classrooms, our research, and our practice.

While many believed that I was changing careers when I entered rabbinical school, I saw my role as a rabbi clearly as an extension, or perhaps better yet as an expansion, of the public health work I was already doing. I saw my roles as rabbi, teacher and public health practitioner all dedicated to *shalom,* peace and complete wellbeing, and to the essential importance of hope, love, trust, respect and dignity to our lives and to making the world a better, more peaceful and healthier place.

My work on faith, religion, spirituality and health at Drexel's Dornsife School of Public Health over these last 17 years integrates nearly four decades of public health practice with work as a rabbi and as an academic. I am privileged to share the broad landscape of knowledge, experiences and skills that I have gained through these many endeavors with my students, faculty colleagues, staff and community partners. It is my hope that readers who wish to pursue similar endeavors may find something useful in what I will share in the following pages.

4   The Graduate Seminar on Faith, Religion, Spirituality and Health

Drexel's graduate seminar on faith, religion, spirituality, and health is aligned with the school's mission and framed as a social justice approach to the health of communities. It is designed to convey to students the potential benefits and contributions of religion and spirituality to community health. While the course has evolved in the 11 years since I first launched it in 2006, it has remained rigorously grounded in critical thinking and self-reflection. Students read extensively and interact with course materials that focus on the psychosocial, epidemiological, environmental, and program and policy dimensions of faith, religion, and spirituality as these relate to community health. The seminar structure emphasizes active student engagement and includes reflective arts, weekly papers, class discussions, visits with guest experts, short research projects, a case study approach, and a community-based practicum that includes weekly journaling.

Those who are considering teaching a public health course on religion, spirituality and health may find it helpful to learn about key events in the course's evolution. I offered the course for the first time as an experiment to gage initial student interest in the topic. It was listed as an independent study in the Department of Community Health and Prevention and met for 4 day-long sessions during the summer. Five doctoral students registered. The course received excellent reviews from all the students, who expressed their optimism that the course had strengthened their capacities to work successfully with faith communities and bring their visions for community health and prevention into reality.

Following the excellent doctoral student evaluations, the independent study was restructured as a regular three-hour weekly seminar, subsequently approved by the university and opened to all Drexel doctoral and masters-level students. (see Box 2;

Box 2: PBHL 823: Faith, Religion, Spirituality and Health – Course Description

"Faith, Religion, Spirituality and Health is a doctoral-level seminar focused on an examination of research literature and practice-based models that demonstrate the relationships of faith, religion, and spirituality to public/community health, with an emphasis on the United States. This course is designed to cultivate each student's critical thinking and promote understanding of key concepts, theories and practice through extensive reading and discussion, as well as presentations and conversations with guest experts, case studies and a seven-week practical, community-based experience. Students will gain a strong conceptual understanding of the field and explore models for successful congregational health promotion programs and building working partnerships between the public health system and faith-based organizations. Masters-level students are welcome in the seminar with the professor's prior approval."

It is worth noting that Drexel University is on the quarter system rather than semesters. All courses are 10 weeks in length.) To date, the course has been offered five times. The most recent (2016) syllabus best illustrates the comprehensive nature of the course, and its multi-disciplinary foci on demographics, research and empirical evidence, community engagement, faith-based programming, and policy advocacy.

In order to accomplish the course's comprehensive, applied and empirical approach, the syllabus outlines the following course objectives. Students will:

1. Understand the religious demographic landscape of the U.S.A. and of Philadelphia
2. Examine and understand the roles of faith, religion, and spirituality and how these relate to community and public health
3. Understand the perceived effects of religion on physical and mental health
4. Be familiar with the growing body of empirical evidence and fields of research (including the epidemiology of religion) focused on religion, spirituality and their impacts on health
5. Understand the important roles of clergy, religious health assets, social networks and spiritual capital in promoting community health and building partnerships
6. Understand the roles that faith-based organizations, faith-based coalitions and religious leaders play in health promotion programs, community outreach, health policy and advocacy
7. Recognize the historically important role that black churches have played in community-based health promotion efforts
8. Experience, through a hands-on community-based practicum, the role of a local, urban, mission-driven faith-based organization in providing comprehensive services and supports to people who are homeless

The course is structured as a co-learning community that requires the active participation of each class member (see Box 3 for course format). I ground my teaching pedagogy in Rabbi Abraham Joshua Heschel's assertion that each teacher is a "living text" for his/her students and that my life "speaks volumes" about what I teach. My pedagogy is also grounded in the recognition that every member of the class is a "living text", a treasure trove of knowledge, skills, experiences and curiosities that can be of value to others. Together we explore, together we learn, together we discover, and together we make sense of the changing world around us. It is in that light that we frame our understandings and commitments as public health professionals.

Box 3: PBHL 823: Faith, Religion, Spirituality and Health – Course Format

"The course is run as a co-learning community-facilitated experience guided by the professor in a seminar style emphasizing small group learning, reflection and inquiry-driven methods, in-depth reading and discussion, engagement with guest experts, and practical community-based experience. The syllabus serves as the co-learning contract, which is actualized by each student contributing actively." (from course syllabus)

The following section describes key activities that take place during the ten-week course. Additional course materials are also available from the author (see Box 4).

Box 4: Available Course Materials

These resources related to the graduate seminar on faith, religion, spirituality and health are available from the author, or at a curriculum archive as described in chapter "Introduction: What Should Public Health Students Be Taught About Religion and Spirituality?", this volume, Box 1:

- Syllabus (2016)
- Synthesis and reflection paper guidelines
- Guidelines for the practicum experience and for journal reflections
- Examples of poems, prose, songs and quotes used for reflective contemplative arts

(contact information: Nee22@drexel.edu)

4.1   Initiating a Weekly Core Activity Cycle

As outlined above, this seminar requires strong, continuously active student engagement with the course readings and with each other, both in and outside of the classroom. Students generally read between six and ten articles each week, totaling about one hundred pages, that have been identified from a wide breadth of literature about faith, religion, spirituality and public/community health. Sometimes the assigned materials include videos. During the first class, students receive guidelines for writing weekly 750-word synthesis and reflection papers, which form the core activity cycle of the course. They are assigned partners with whom they will engage in weekly on-line dialogue about the papers. The objectives for the weekly papers are outlined in Box 5.

Box 5: Objectives of Weekly Synthesis and Reflection Papers

- To demonstrate the student's mastery of the content of ALL of the week's assigned readings
- To engage in on-line discussion with one or more partners
- To practice skills of critical thinking, analysis, synthesis and reflection
- To practice writing in a succinct manner
- To formulate thoughtful questions that have the potential to stimulate meaningful discussion about the content of the week's reading with partners
- To integrate the student's own relevant professional and personal experiences and/or current events into the paper and into their on-line conversation with partners

In the weekly paper, each student identifies and synthesizes the key themes from that week's assigned readings and videos and reflects on those through the lens of current events and/or his/her own personal or professional experiences. Papers are posted in the on-line discussion board along with two thoughtful questions for their partner(s). Each student responds weekly to his/her partner's questions.

As one would expect, the assigned weekly readings constitute the focus for each class session, which is amplified by a guest speaker or a videotaped lecture. Class guests have included national experts, such as Jeff Levin, Doug Oman, Gary Gunderson and Teresa Cutts, Mimi Kiser, and Ronald David, who have joined the class by skype or conference call. Videotaped lectures available on-line have included talks by notable researchers, including Ellen Idler, Diana Eck and Laurie Zoloth, and faith-based community activists, including Ernesto Cortes and Rev. William Barber. Additional class guests have included local religious and community leaders as well as municipal, federal and non-profit agency staff conducting citywide and regional multi-faith public health and mental health initiatives.

4.2   Exploring Two Unfamiliar Religious Traditions: Short Research Papers

Two short research projects focus on explorations of religious traditions unfamiliar to the student, who does research and writes a short paper about each. In the first paper, the student explores the changing demographics of a selected religious tradition in the United States other than his/her own and examines its core tenets related to health and wellbeing. For the second paper, students explore a different unfamiliar religious tradition, and examine its tenets, creed and practices related to compassion and social justice. Each paper is posted in the course on-line discussion board and also presented in class. The class presentations are followed by group discussion about similarities and differences across the religious traditions students selected. Examples of religious traditions that students selected in the 2016 class were Islam, Sikhism, Rastafarianism, Greek Orthodoxy and Seventh Day Adventism.

4.3   Integrating Practical Community-Based Experience and Journaling

As a longtime community-based health educator, my teaching focuses on practical applications of concepts, ideas and evidence-based research. Thus, each year this course includes a community-based component. Most recently (2016), this took the form of a community-based practicum, which is explained in more detail below. In a prior year, the class undertook a project jointly with the Interfaith Center of Greater Philadelphia to better understand and catalogue faith and health

partnerships in the city. Students talked with local agencies and health care institutions to learn about existing partnerships with faith-based communities and religious leaders while the Interfaith Center did a survey of its member religious denominations to learn about their partnerships with health and human service agencies. A general database was developed.

The community-based practicum in 2016 required students to volunteer at least 2 h per week for 7 weeks in the "radical hospitality" program of Broad Street Ministry, a large, local faith-based organization that provides comprehensive services to more than 1000 people who identify as homeless. Broad Street Ministry fulfills a strong public health mission in the city and defines itself as a "broad-minded, faith-based community that fosters creativity, nurtures artistic expression, extends inclusive hospitality and works for a more just world through civic engagement." (www.broadstreetministry.org) With many volunteer opportunities at varied hours of the day and differing days of the week, students selected time slots that worked with their busy schedules. They fulfilled roles such as serving meals and tea, hosting people who were homeless, helping with art projects, sorting and delivering mail, and distributing personal care supplies.

In addition to their volunteer service at Broad Street Ministry, students were required to write a weekly journal entry, share their entries aloud each week in class, and collectively discuss their experiences. I facilitated these conversations with an emphasis on the resonance and synergies among their experiences. This on-site field experience, followed by each student's journaling, reading aloud and classroom conversations yielded learning, insights and experiences that were rich in inspiration, knowledge, empathy, challenge, surprise and compassion.

4.4   Integrating Reflective Arts

Students engage weekly in reflective writing in response to a selected poem, prose, quote or song that captures one or more themes from that week's assigned reading and videos. A goal of this classroom practice has been to integrate what is personally meaningful at the individual level with what matters at the public/community level. Students are asked to reflect on what inspired, challenged, or surprised them and write freely for 5 min. After they finish writing, they share their reflections with a partner. This is followed by a short full-class discussion.

I am a fan of poetry, recognizing how deeply it can capture our human experience and the yearnings and aspirations of the human spirit. In 2011, I attended the annual conference of the Association for Contemplative Mind in Higher Education and learned how widely poetry and reflective writing were being used by faculty in colleges and universities across the country. I found their experiences inspiring and began to integrate these into own my courses. A list of quotes, prose and music used is available to those interested in this approach (see Box 4).

4.5   Incorporating a Case-Study Approach

In 2016, I developed a case study to further apply students' readings to real-life scenarios. The case was based on a challenging demographic and political scenario in which the students were asked to play the role of a health educator for a local health department and develop successful strategies for building partnerships with local clergy and lay leaders and planning congregation-based health programs as a means of addressing health disparities and chronic disease risk factors. I expect to expand this case-study approach in future offerings of this course.

4.6   Assigning a Research Paper

Over the years, I have also required students to write an in-depth 20–25 page research paper, but I no longer include this. Sharing here a description of how I framed this assignment as well as my rationale for not continuing it may be useful to the reader who has an interest in developing a course on religion, spirituality and public health. The goal of the paper was for the student to engage in a high-quality analysis of a topic in which they were interested that fell under the purview of faith, religion, spirituality, and public health. Students scheduled individual consultation meetings with me during the first 2 weeks of class to explore potential research paper topics, then settled on one topic and launched an in-depth literature search. Each student wrote a three-page well-formulated literature search summary, proposed an outline for their final paper, and provided weekly check-ins during the class sessions in which they shared any challenges and compelling questions they were encountering and received feedback from me and from fellow classmates. During the last class session, each student presented the highlights of their research, received final feedback, and then submitted their final paper during the final exam period.

At the time this was done (2011 and 2012), the earlier-mentioned weekly on-line synthesis and reflection papers were simply e mailed reflections of only 250 words and did not require a synthesis of the week's readings. As the course evolved, those weekly writings became more formalized, 750-word papers that formed the core weekly activity cycle of the course and were considerably more time-consuming. Given the limitations of class time (3 h per week for 10 weeks) and the need to balance the course workload, I chose to emphasize the weekly papers and student's on-line discussion board engagement with their partners, rather than continue with in-depth research papers.

5   Perceived Benefits and Challenges of the School's Graduate Seminar

Students at both the masters-level and the doctoral-level have overwhelmingly reported experiencing great value from participating in the graduate seminar and related school practice-based training projects. Their course evaluations have indicated significant gains in knowledge about the impact and importance of religion and spirituality to community health, confidence in their skill development for planning community health promotion programs with religious leaders and faith communities, and enhanced critical thinking, analysis, synthesis, and writing. Students have also voiced their deep appreciation for the ongoing practice of self-reflection, the use of reflective arts, and the community-based practicum. By the end of the course, students often expressed excitement about future community health work with religious leaders and faith communities.

The chief challenge of the course has been enrollment. With a limited number of "free" elective courses, both doctoral and masters-level students frequently express great interest in the course. But, when the time comes to register, community health students, for instance, will often opt to take SASS or another quantitative class, reporting that they want to make sure they strengthen those research skills before they graduate because they believe those will help them get better jobs.

Another challenge is that the work of religion, spirituality and health is not yet well integrated into the curriculum. While many faculty colleagues affirm the importance of faith, religion, and spirituality in their personal health and wellbeing and even to their community-based public health research, they remain reluctant to embrace it professionally. As mentioned earlier, this may be connected to the centuries-old tension between science and revelation or an unfounded belief, as mentioned earlier, that this scope of practice is unscientific. Another reason may simply be one of competing demands – each faculty member has his/her own academic preferences and areas of expertise that they pursue in their teaching, research and practice commitments.

6   Incorporating Religion and Spirituality into Dornsife's Public Health Practice

While the present author's graduate seminar described in the previous sections has been the major vehicle for Drexel public health students to learn in-depth about religion, spirituality and health, this author has also had the privilege of guiding the school's incorporation of religion and spirituality into its community-based public health practice. This has been most evident in trainings offered to both the public

health work force and to clergy and congregational lay leaders that illustrate the school's mission and longstanding commitment to social justice and community health and community-based partnerships. The trainings reflect some initial integration of religion and spirituality factors into the service mission of the school as well as opportunities for student involvement. Here are several brief examples:

1. Dornsife's Center for Non-Violence and Social Justice is home to a number of renowned international experts on trauma and trauma-informed practices. Given the high rate of gun deaths in Philadelphia and the crucial role of religious and congregational lay leaders on the city's front lines in responding to violence, Dornsife faculty led a day-long training in 2011 for 174 of these leaders about how understand and respond to trauma using trauma-informed practices. The training was funded by Dornsife's Department of Community Health and Prevention, this author's home department, and provided the opportunity for several MPH students, staff and faculty to participate. To conduct outreach for the training, one MPH student mapped religious assets in neighborhoods that are home to large numbers of people experiencing health disparities and reached out directly to faith communities and religious leaders in those neighborhoods. The trauma training was cooperatively planned and co-sponsored with Zones of Peace, a program of the Interfaith Center of Greater Philadelphia and the Religious Leaders Council. It jumpstarted an effort that has been continued in the city by United Way and a new multi-faith consortium that educates religious leaders about trauma, neurobiology, self-care and how to best respond to their congregants who experience trauma or post-traumatic stress.
2. Dornsife also has a Center for Public Health Practice, which regularly offers public health courses and trainings to practicing health professionals. Through this center, Dornsife sponsored a day-long religious competency workshop in 2013 that trained health professionals about five religious traditions common in Philadelphia but not well understood. These included Islam, Santeria, Seventh-Day Adventism, Hispanic Catholicism, and Judaism. The workshop was co-sponsored by the Interfaith Center of Greater Philadelphia and won an award from the U.S. Department of Health and Human Services Health Services and Resources Administration (HRSA) as a model outreach and training program.
3. Another project conducted in collaboration with the Interfaith Center of Greater Philadelphia provided the community-based masters project (masters thesis equivalent) for one of our MD/MPH students whose work focused on developing and evaluating a five-part interfaith education and training program designed as a strategy for fighting religious discrimination and promoting overall individual and community health and wellbeing.

4. Working closely with the commissioner and staff at the Philadelphia Department of Behavioral Health and Intellectual Disability Services (DBHIDS), Dornsife has begun to develop agency internships and practica for public health students focused on faith, spirituality, religion and behavioral health. DBHIDS takes a public health approach to behavioral health. The department's Faith and Spiritual Affairs Unit informs and educates faith and spiritual communities about behavioral health services and resources, with an emphasis on reducing stigma, while also educating behavioral health professionals about the importance of integrating faith and spirituality into treatment. The department's practice guidelines specifically emphasize that faith and religion should not be left "at the door" but in fact, should be welcomed into the therapy environment and into recovery settings.

7   Summary and Conclusion

The Dornsife School of Public Health at Drexel University has included a focus on faith, religion, spirituality, and health, most specifically in a doctoral seminar dedicated to this topic that has been offered for 11 years and also includes a community-based practicum. In addition through its public health practice, the school has trained clergy and congregational lay leaders about trauma, trained health professionals about lesser known but common religious traditions, and is working with the city's behavioral health department to develop internships and practica for students that integrate religion, spirituality and behavioral health. Dornsife's mission is committed to a definition of health that encompasses physical, mental, and social well-being and not merely the absence of disease, and has acknowledged the importance and welcomed the incorporation of religion and spirituality into its teaching and public health practice.

References

Broad Street Ministry at www.broadstreetministry.org
Cnaan, R., Boddie, S., et al. (2006). *The other Philadelphia: How local congregations support quality of life in urban America*. Philadelphia: University of Pennsylvania Press.
Diez Roux, A. (2015). *The Drexel University health collaborative: Data and research for action* (an unpublished, internal working paper).

Online Teaching of Public Health and Spirituality at University of Illinois: Chaplains for the Twenty-First Century

Kathryn Lyndes, Wendy Cadge, and George Fitchett

Abstract Our online course, *Religion, Spirituality and Health: A Critical Examination*, was developed as part of a project which is supporting chaplain-research fellows to get an MPH or MS degree. The course, which was taught for the first time in 2016, is offered in the Division of Epidemiology and Biostatistics at the University of Illinois at Chicago School of Public Health. Because the chaplain research fellows lived in cities around the United States, the course was taught using a teleconferencing format. The course had four broad aims: (1) to identify key findings and debates in the growing literature about religion and health, (2) to analyze the strengths and weaknesses of studies of religion, spirituality and health, (3) to explore the findings on religious diversity, and (4) to apply the studies to the research efforts and clinical work of chaplains and public health workers. Our students were MPH students from around the country, so an online format – that included weekly synchronous meetings and periodic asynchronous discussion boards – was key to the success of meeting these goals. Our preliminary evaluation of the course is that the online format, mixed synchronous asynchronous learning methods, and syllabus were effective ways of teaching content that bridges public health, religion, and spirituality.

Keywords Religion · Spirituality · Health · MPH · Public health · Healthcare · Health practitioners · Social determinants · Coping-illness · Chaplain · Spiritual care

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1   Overview

The role of religion in public health efforts and interventions has historically been an understudied area. Ellen Idler (2014) makes a compelling case that religion is an important social determinant of health, yet it is only recently that many public health schools have considered adding topics related to religion to their curriculum. Additionally, as degree options grow, we recognized that public health educators are increasingly working not just with public health practitioners in training but also with students preparing for careers in allied health professions such as medicine, nursing, social work, and chaplaincy. Healthcare chaplains, as frontline clinical providers, tend to be aware of how religion and spirituality are a part of their daily work with individuals, families, and staff. Other healthcare workers are catching on to the significance these factors have in their patients' healthcare experiences. Increasing numbers of medical schools, for instance, are teaching a course in religion and spirituality (Rasinski et al. 2011; Koenig et al. 2010; Puchalski et al. 2014).

With these shifts in mind, we offered an online option with a twist, a course on religion and health through a public health school open to students who attended this school and to a set of chaplains pursuing MPH and MS degrees in public health schools around the country. Our broad aim was to build informed healthcare practices of public health practitioners through two strategies. The first strategy was to offer a broad introduction to the literature on religion and health. The second strategy was to help students understand – and critically evaluate - the evidence about the role of religion and spirituality as determinants of health and as ways of coping with illness. This is one of the only public health courses designed specifically for chaplains in MPH programs.

We also saw broader public health implications of considering the significance of religion and spirituality and felt it important to be thoughtful about what it means to expand a traditional public health approach to incorporate these topics. Clinicians are in unique positions to be ambassadors to other healthcare providers and administrators. As such they can share their knowledge of religion and health and potentially shape practices – and institutional cultures – based on research findings. While we could have designed this course in ways that would help students use religion solely as a tool for improving patient health outcomes, we preferred to design this course for practitioners to think more broadly about their individual practices within organizational and institutional contexts, in other words, how to improve the healthcare system from the ground up. To that end, we chose to focus the course materials on individual levels of religion and health as well as on the healthcare and faith-based systems in which healthcare is provided.

The remainder of this chapter describes the context of this course and pedagogical strategies in the syllabus and the experience of teaching the class itself. We also reflect on the lessons learned from teaching this course for the first time that might be informative to people who are developing related courses in other schools of public health.

2   Brief Background

This course is one part of a broader grant project that focuses on transforming the field of chaplaincy. *Transforming Chaplaincy* (TC; www.transformchaplaincy.org) grew out of the recognition that healthcare chaplains have embraced the importance of evidence-based practice but need the training to realize it. TC aims to better equip healthcare chaplains to use research to guide, evaluate, and advocate for the daily spiritual care they provide patients, family members and colleagues.

TC was funded by grants from the John Templeton Foundation with support from major professional chaplaincy and pastoral education organizations. The project has a three-part training plan from 2015 to 2019. The first training opportunity includes development grants to support the incorporation of sustainable research literacy curriculum in 70 chaplaincy training programs across the country. The second is a free online continuing education course to members of the major professional chaplaincy organizations as a way to build evidence-based chaplaincy care. The third is research fellowships, which pay for 16 board-certified chaplains to complete a two-year, research-focused Master of Science or Master of Public Health degree in epidemiology, biostatistics or public health at an accredited school of public health around the country. The course we describe in this chapter, *Religion, Spirituality and Health: A Critical Examination,* is in support of this third initiative and was taught in the fall of 2016 through the University of Illinois School of Public Health (UIC SPH).

This course was formally taught by George Fitchett with the contributions of Wendy Cadge and Kathryn Lyndes. It was aimed at the first cohort of eight board certified Chaplain Research Fellows who are earning MPH and MS degrees around the country. The class was also made available to UIC SPH students through the school's course catalogue.

As far as we know this is the first time UIC SPH offered a course – online or face-to-face – focused on literature about religion and health. Nor had anyone at UIC SPH ever geared a class to a particular professional group such as chaplains as we proposed. We are also not aware of this happening at other institutions at the national level either, although there are an increasing number of joint public health and theology programs being offered at universities. In fact, at the time we developed our TC proposal in 2015, we were aware of only two institutions that offered dual degree options in MPH and MDiv or Master of Theological Studies (Emory University's Rollins School of Public Health in collaboration with Candler School of Theology; and Yale School of Public Health working with Yale Divinity School).

3   Pedagogical Objectives

We designed the course with our primary target audience in mind, the 8 chaplain research fellows. We thought that in order to build a strong cohort of fellows, they needed to become familiar with the large literature in religion, spirituality and

health. This knowledge could provide the foundation for their master's level thesis projects and – ultimately – for careers in chaplaincy research. To that end, they shaped the goals of the course. However, we believe the content of the course also serves other MPH students who wish to become familiar with research regarding religion as a determinant of health.

These objectives were based in part on the research in the areas of spirituality, religion and health, which has grown exponentially in recent years (Oman 2013; Koenig et al. 2001; Koenig et al. 2012; Pargament 2013). Documenting this history was an important component of this course in the development of our course objectives; in order for the students to be contributors to research in the areas of religion, spirituality and health, they needed to be knowledgeable about the existing literature.

We had four broad goals in mind when we designed the syllabus:

- Distinguish segments in the large literature about religion and health and identify the questions researchers ask in these segments and the key findings and debates in these fields.
- Describe and analyze how religion, spirituality and health have been measured in many of these studies and what the strengths and weaknesses are of different approaches to conceptualization and measurement
- Analyze how religious diversity is addressed in many of these studies including how the findings about religion and health vary by religion, including for those with no religious backgrounds.
- Think practically about how the studies discussed through this course can inform the research work of clinicians including healthcare chaplains and public health practitioners.

In order to meet these objectives, we required weekly readings, discussion questions, article assessments, and active participation in class discussions. We also invited a number of speakers to join the class to illuminate the role religion and spirituality played in their research and work.

4 Course Experience

In addition to our first cohort of eight fellows, we were pleased that three UIC SPH medical students enrolled in the course. Two of these students dropped out for scheduling reasons and asked to enroll in the course when it is offered again in 2017. We also had three informal auditors take part in the course: a chaplain educator and two chaplains engaged in half-time research and half-time direct clinical involvement.

Because the fellows and auditors were situated around the country, the course needed to employ distance learning. We chose a dialogical model in which we met three hours per week via teleconferencing (including a video connection) with room for ongoing dialogue via an online discussion forum.

Religion, Spirituality and Health brought together research and thinking in epidemiology, psychology of religion, sociology, chaplaincy studies and other fields to address four central themes and to demonstrate how religion, spirituality and health are multi-dimensional, complex phenomena. The first theme addressed by the course asked what the empirical evidence suggests about the relationship between religion and health at the individual level, and what mechanisms - social integration, behaviors, social regulation, psychological and emotional processes, etc. – might account for that relationship. Next, we considered how people from a range of religious backgrounds draw from religious and spiritual resources when they are ill, with attention to spiritual screening, spiritual struggle and the research about religious and spiritual coping. Third, we examined how health professionals, including chaplains, influence people's experiences of illness with particular attention on health outcomes and specific populations such as pediatrics and oncology. The fourth area of exploration included the role of religion as social capital for health. (For further details on these topics, see also chapters "Model of Individual Health Effects from Religion/Spirituality: Supporting Evidence", "Social and Community-Level Factors in Health Effects from Religion/Spirituality", and "Clinical Practice, Religion, and Spirituality," this volume).

To address these themes, we asked guest speakers to join the weekly teleconference to present their work. We found this an effective teaching format for students to hear and engage first-hand accounts of the research process and conceptualization. Guest speakers were recruited from colleagues known to Cadge and Fitchett.

Each of our instructional materials and pedagogical strategies were developed in accordance with our stated course objectives. We began the course with 2 weeks of setting the frame for considering the possible intersections between religion, spirituality and health. The first week focused on broad questions, such as why ask about religion, spirituality and health? Who is asking these questions? What assumptions do they bring to their studies? Who cares about the answers and why?

Week Two centered on measurement and definitions, specifically the debates about conceptualization and measurement of religion and spirituality and the implications of causal arguments. Peter Hill was our guest speaker that week. He presented his work with Evonne Edwards on measurement in the psychology of religiousness and spirituality (Hill and Edwards 2013). Because students who go on to do research in religion, spirituality and health will be required to include a thoughtful consideration of these terms, they were required to delve deeper into this literature and to write a short paper making the case for one approach to defining religiousness and spirituality.

By week three, we were ready to address the different research themes. Each week was an opportunity to cover a new topic. Week 3, Religion and Mortality, was led by guest speaker, Ellen Idler who spoke on group- and individual-level perspectives into religion and adult mortality (2011). Other topics included religion and physical health, religion and coping with illness, screening and assessment of religious and spiritual need.

We were pleased that researchers and clinicians from a variety of fields took part in several of the classes. These include two physicians, a psychology of religion scholar, a chaplain researcher, and a health psychologist.

By the twelfth week of the term, we were ready to consider macro levels of care. We were interested in two significant organizational contexts of religion, spirituality and health. The first context was healthcare organizations and their roles in facilitating or impeding the relationship between religion, spirituality and health. The second context was faith-based heath interventions and how they function in public health.

During the last three class periods, students presented their work in an area of interest. They provided a review of the literature and, based on the strengths and challenges of the designs and outcomes, outlined next steps in research in that topic area.

Throughout the course, we incorporated ongoing dialogue outside of the regularly scheduled class period as a way to encourage greater reflection of course material and build rapport/networking among the students and instructors. We structured these discussions in two ways. First, we posted three to four questions each week to help bridge the material from week to week. For example, during week 2, we discussed the importance of measurement, and week 3 included various studies of the possible relationships between religion and mortality. One of the bridge questions was, "Doug Oman argues for pragmatism in defining concepts. Pick one article for this week and explain whether you thought the authors approached their definitions and measurements in a pragmatic way."

We also wanted to see how students were thinking about the research they were reading. So they wrote and posted three article extracts. In addition to showcasing the student's understanding of important knowledge components in the article (for example, the theoretical or conceptual framework of the research study, the research question, hypothesis, data set and collection method, study design, sample size and selection, dependent and independent variables, and so on), the article extract also provided a frame for helping the students think critically about the studies' strengths and limitations, the quality of the outcomes, and the clinical and broader public implications of the findings.

5   Lessons Learned

We will be teaching the course again in 2017 through UIC SPH for the second cohort of 8 chaplain research fellows. This gives us an opportunity to improve both the content and teaching strategies based on what we learned this year.

Based on student presentations, our evaluation is that the course structure, content, and online format worked well for this topic. We met our goals of offering a broad introduction to the literature on religion and health to students in MPH programs and to help students understand – and critically evaluate - the evidence about the role of religion and spirituality as determinants of health and as ways of coping with illness.

We evaluated the course on several criteria: (1) course content including readings, assignments, and lectures, (2) the course as a platform to craft the fellows'

MPH and MSc programs, (3) online technology including Zoom and its features and Blackboard discussion board and article extracts, and (4) recruitment strategies.

Content The first area we evaluated was the course content. For the most part, the readings, assignments and lectures were effective ways to meet our course objectives. We did wonder whether the breadth of the research was too much for a first term MPH student. However, students reported that the wide range of readings and guest speakers helped them to become familiar and comfortable with religion and health research and its application to their future work as chaplains and physicians.

The student presentations were a highlight of the course. In addition to providing strong reviews of the literature on their topic of choice – with a critical eye to future research – the students reported that the presentations were an opportunity to practice presentation and teaching skills. They requested additional leadership experiences, so next year we will have students co-lead the presentation of the weekly required readings.

This leads to a discussion of how our target audience shaped the course. Not only did the 8 TC chaplain research fellows shape the goals of the course, as mentioned above, but also they clearly shaped the direction of the weekly discussions. Because the students were primarily chaplains, discussions tended to examine chaplain goals and perspectives at the individual level. While a worthy clinical venture, our goal was to build analytical skills that also included the broader lens of the public health field.

Additionally, we recognized that the students were in their first terms in research-oriented masters' programs and understandably unfamiliar with research concepts and structure of peer-reviewed articles. We think that next year, a more intentional outline for summarizing and critiquing the weekly required readings will help students more quickly grasp the format and content of the literature in their field and begin to broaden their perspective to include levels of analysis that include organizational and communal segments of society.

Crafting the MPH Programs The second evaluation criteria, how to use the course to help the 8 fellows and the other MPH students, if interested, shape their degree programs, developed over the term. Though we recognized that the course was foundational to their work as chaplain researchers, we did not have an original strategy in the course itself to assist the fellows in crafting their theses projects. In fact, we were initially curious whether this course would be the only intentional opportunity in the fellows' programs to think strategically about religion and spirituality in relation to health. We were pleased to learn how the course provided not only an important foundation for their remaining degree program but also sparked ideas for ongoing research and led to conversations with their program directors about building on existing literature in their master's level theses projects.

Next time we teach the course, we want to incorporate a more focused plan for engaging students that involves brainstorming possible bridges between chaplaincy and public health research in small peer-led discussions, particularly since most MPH programs are only just beginning to offer classes in religion and health. We

are also considering inviting public health faculty to the course to serve as mentors and idea partners. If enough faculty become interested, this effort could serve to make the course sustainable after the completion of the Templeton grant.

Part of this strategizing involves determining the best time to offer the course. Some students suggested that this class be offered after they had completed at least one term of their MPH programs. There are pros and cons to this recommendation. On the one hand, their introductory courses in biostatistics and epidemiology would better prepare the fellows to understand and critique the literature in religion and health. On the other hand, the delay would make it difficult to help them craft a religion and health-focused master's thesis because the planning of this begins in the first term.

Online Technology   We were also interested in how the online technology advanced or hindered the goals of the course, our third evaluation criteria. We used the tele-conferencing program called Zoom for our weekly meetings. Zoom features enabled students and guests to login from their cellphones, tablets, or computers. Presenters could share PowerPoint slides, have public and private chats (instant messaging), gather in breakout rooms for small group exercises, and visually see the other members of the class. There were mixed reviews of the technology. Overall, students and guest speakers found Zoom easy to use and a practical solution for guest speakers and students from disparate geographical locations to meet. People could gather from locations convenient to them, including cafes, homes, student lounges, and empty classrooms.

We think that discussions were generally furthered by our capacity to meet and see each other on a regular basis. The weekly synchronous teleconferencing format enabled us to network and build connections despite our geographic distance from each other. Additionally, some students appreciated the flexibility that remote access afforded so that they could meet childcare and other family commitments. However, the occasional Internet connectivity problems led to sound delays or choppy audio. Also, most students accessed the course while in their homes, so we were privy to some images of our personal lives as children or pets appeared in the video feeds. Some students reported that these glimpses helped to break the ice and make for a more relaxed classroom setting, while others found them a distraction.

Related to this relaxed setting is the fact that the 8 Fellows knew each other as part of the *Transforming Chaplaincy* project; they had worked closely together at a conference that launched the fellowship program and over conference calls. While traditional programs may include cohorts of students who get to know each other throughout their program, we suspect that the Fellows' familiarity with each other and with the instructors prior to the start of their program, their situation of being the first cohort of a unique nationally competitive fellowship opportunity, and the fact that the relationships with each other and with the instructors will be ongoing after the course ended, helped the students to feel more comfortable delving quickly into the topics and discussing shared interests than is typical in a new course.

The instant messaging chat room was also met with mixed reviews. Some people found the side conversations a way to participate in a discussion without disrupting

the flow of the main conversation, especially if they are introverted. The chat room also became the place to store ideas for future consideration, and sometimes we saved the chat discussions as an archive of shared resources such as links to books or websites relevant to our work in the classroom. At the same time, some people found it difficult to track both the audio and written discussions at the same time and found the chat room distracted them from the main conversation.

The other technology we used was Blackboard. Article extracts and responses to weekly discussion questions were posted in Blackboard. This seemed another useful way to engage introverted students. All students were required to post extracts/critiques of three articles of their choosing and to respond to a discussion question any 3 weeks of their choosing. They were encouraged to reply to their peers' postings. The discussion board questions were designed to continue conversations on weekly topics and to bridge themes from week to week, but they wound up being isolated stand-alone conversations, and only a few students added their non-required input to a student's required postings. So the next time we teach this course, we want to incorporate the written postings into the weekly synchronous learning by having students present both the discussion question and article extract postings.

Recruitment The fourth criteria we evaluated was our recruitment strategy for building interest among SPH faculty and students at UIC and beyond. This first year, the course was listed in the academic catalog under Public Health Epidemiology as a special topic in epidemiology and was open to any UIC School of Public Health student interested in the intersections between religion, spirituality and health. With this minimal promotion, we were surprised and pleased that initially three UIC MPH students registered for the course. As said above, two UIC students dropped out reportedly for conflicts with other required courses and asked to enroll in the course when it is offered again in 2017.

We were interested in how the course, focused in part on chaplaincy research, would appeal to a medical student in an MPH program. She reported that she came to the class with a personal interest in religion and spirituality and that the course helped her conceptualize concrete ways to engage religion and spirituality as a healthcare provider.

As we learn more from emerging research efforts about the roles religion and spirituality play as important social determinants of health, we think public health schools will increasingly see the value of developing courses that add these important topics to their curriculum. We think this course was an informative first step to bridge public health and religion and spirituality. We recommend this course to public health educators who are interested in preparing students for careers in public health and who might work with those in allied health professions, and we look forward to the opportunity to teach the course again 2017 (see Box 1).

Box 1: Summary and Archived Materials
The authors would be pleased to share the following materials with those considering teaching public health courses on religion/spirituality and health (see also curriculum archive described in chapter "Introduction: What Should Public Health Students Be Taught About Religion and Spirituality?", this volume, Box 1):

- Syllabus with extensive reading lists
- Assignment guidelines: (1) short paper, (2) long paper, (3) article extracts, (4) presentations, (5) master list of weekly discussion questions

References

Hill, P., & Edwards, E. (2013). Measurement in the psychology of religiousness and spirituality: Existing measures and new frontiers. In K. I. Pargament, J. J. Exline, & J. Jones (Eds.), *APA handbook of psychology, religion, and spirituality (Vol. 1): Context, theory, and research* (pp. 51–77). Washington, DC: American Psychological Association. https://doi.org/10.1037/14045-003.

Idler, E. (2011). Religion and adult mortality: Group- and individual-level perspectives. In R. G. Rogers & E. M. Crimmins (Eds.), *International handbook of adult mortality* (pp. 345–378). New York: Springer.

Idler, E. (2014). Religion: The invisible social determinant. In E. Idler (Ed.), *Religion as a social determinant of public health* (pp. 1–30). New York: Oxford University Press.

Koenig, H., McCullough, M., & Larson, D. (2001). *Handbook of religion and health*. New York: Oxford University Press.

Koenig, H. G., Hooten, E. G., Lindsay-Calkins, E., & Meador, K. G. (2010). Spirituality in medical school curricula: Findings from a national survey. *International Journal of Psychiatry in Medicine, 40*(4), 391–398. https://doi.org/10.2190/PM.40.4.c.

Koenig, H., King, D., & Carson, V. B. (2012). *Handbook of religion and health* (2nd ed.). New York: Oxford University Press.

Oman, D. (2013). Defining religion and spirituality. In R. F. Paloutzian & C. L. Park (Eds.), *Handbook of the psychology of religion and spirituality* (2nd ed., pp. 23–47). New York: Guildford.

Pargament, K. I. (2013). Searching for the sacred: Toward a non-reductionistic theory of spirituality. In K. I. Pargament, J. J. Exline, & J. Jones (Eds.), *APA handbook of psychology, religion, and spirituality (Vol. 1): Context, theory, and research* (pp. 257–273). Washington, DC: American Psychological Association. https://doi.org/10.1037/14045-014.

Puchalski, C. M., Blatt, B., Kogan, M., & Butler, A. (2014). Spirituality and health: The development of a field. *Academic Medicine, 89*(1), 10–16. https://doi.org/10.1097/acm.0000000000000083.

Rasinski, K. A., Kalad, Y. G., Yoon, J. D., & Curlin, F. A. (2011). An assessment of U.S. physicians' training in religion, spirituality, and medicine. *Medical Teacher, 33*(11), 944–945. https://doi.org/10.3109/0142159X.2011.588976.

Part IV
Concluding Chapters

International and Global Perspectives on Spirituality, Religion, and Public Health

Liz Grant and Doug Oman

Abstract To date, most empirical research on religion/spirituality and health, like most other health research, has been conducted in the United States or other western countries. Earlier sections of this volume have explicated the public health relevance of religion and spirituality with a corresponding western emphasis. But religion and spirituality are very much global phenomena, and their connections to health possess global relevance. To put religion/spirituality and public health issues in global context, this chapter undertakes four tasks. First, we set out the emerging relevance of religion/spirituality to global agencies and organizations such as the World Health Organization and the United Nations. Second, we briefly note conceptual frameworks articulated earlier in this volume that possess global relevance and are corroborated by findings from outside western societies. Third, to offer a ground-level view of how R/S and public health profoundly intersect, we offer six evidence-informed anecdotes or "snapshots" of such intersections: (1) Health assets and the global relevance of salutogenic approaches; (2) Religion as both a problem and a solution with regard to female genital mutilation; (3) Religion as a doorway to understanding multiple worldviews in the Ebola epidemic; (4) The complex interplay of religion and HIV in Africa; (5) Religion as a purveyor of persuasive health information, and a valuable collaborator; (6) Religion and the global need for palliative care.

Finally, as a vivid guiding image that highlights some of the commonalities between the aspirations of many religious traditions and public health, we articulate the emerging concept of planetary health.

Keywords Religion · Spirituality · Public health · Planetary health · Global health · WHO · FGM · Ebola · HIV · Palliative care · LMIC

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The preceding chapters have reviewed empirical research on religion/spirituality (R/S) and health from the perspective of a variety of public health subfields, and examined implications for practice and education. These chapters recognize that the majority of research on R/S and health has been situated in the US, with fewer studies reflecting the rich relations between R/S and public health in the rest of the world, particularly in lower and middle income countries (LMICs).

Yet religion and spirituality have global relevance, as do the conceptual frameworks and evidence presented earlier in this volume. Public health and religious communities worldwide share similar goals and often similar capacities. Both are widely viewed as social institutions that foster the collective good; both public health and religion offer powerful tools for expanding and refining medically-based health efforts, perhaps most prominently by creating and sustaining community efforts across groups and societies.

To help put the previous sections of this volume in global context, this chapter undertakes four tasks. First, we set out the emerging relevance of religion/spirituality to global agencies and organizations such as the World Health Organization and the United Nations. Second, we briefly note conceptual frameworks articulated earlier in this volume that possess global relevance and are corroborated by findings from outside western societies. Third, to offer a ground-level view of how R/S and public health profoundly intersect, we offer six evidence-informed anecdotes or "snapshots" of such intersections in public health work. Finally, as a vivid guiding image that highlights some of the commonalities between the aspirations of many religious traditions and public health, we articulate the emerging concept of planetary health.

1 Shifting Paradigms: The Mainstreaming of Religion and Public Health Collaborations Through Partnerships with Global Health Agencies

Over the past 10 years the global public health community, and particularly the global health and development agencies, have recognized that religious actors have been important but largely invisible components within the health systems of many if not most countries, missing from all reports yet apparently delivering significant proportions of health service. This has been most pronounced in countries where the health systems are fragile and where staffing and national resource issues mean that the coverage, quality and the reach of services is limited. Reports from the World Bank Faith Based Initiative and The Lancet Faith Based Health Care series have drawn attention to the powerful and extensive reach of religious communities, especially in low and middle income countries, and in rural regions where national, governmentally sponsored healthcare systems are sparse or missing. Writing in the *Lancet* series, Tomkins and his colleagues (2015) offer an analysis of controversies

in faith and health care. They argue that if "health-care policy makers could look above their secular silos at what has been achieved by engagement with faith-inspired health-care groups… they too might be astonished at the results" (p. 1782). As described by Olivier et al. (2012), two rich data bases now incorporate more than 4000 articles about religion and development, many of them dealing with the intersection of religion and health within low and middle income country settings.

A mapping carried out by the World Health Organization (WHO) of faith inspired interventions in Sub-Saharan Africa countries highlighted numerous faith based entities delivering care. For example, in Lesotho, 5000 previously unidentified faith based groups were found to be providing home based care and supporting children and people living with AIDS (WHO 2009; ARHAP 2006). Earlier analysis of HIV-related findings in Namibia, Sierra Leone, and Uganda had showed that almost all churches in these countries had some form of HIV response (Yates 2003), though little of this information was incorporated into reported global UN HIV data reports. In many parts of the world, religious organizations may be responsible for delivering large fractions of healthcare – estimated nearly two decades ago to be between 40% and 50% in many parts of sub-Saharan Africa (Green et al. 2002).

In 2009 the United Nations Development Group set up a task force at the invitation of the United Nations Population Fund (UNFPA) to gain a greater understanding of the reach, and the strategies of faith based organizations in development activity – known as the United Nations Inter-Agency Task Force on Engaging Faith Based Organisations for Development (IATF-FBO) (Karam 2010 p.432). Task force members include an alphabet soup of major international organizations often known by their acronyms: the ILO, UNAIDS, UNAOC, U-DESA, UNESCA, UNDP, UNFPA, UN-Habitat, UNICEF, UN Women and the World Bank. The task force has recognised the diversity of religion, the opportunity for religious leaders to tackle social injustices, the need for culturally attune community based voices to speak to development issues and the importance of creating safe space to challenge exclusivity and to be inclusive. For example, the IATF-FBO in its annual reports has presented examples where the engagement of faith actors has been instrumental in changing public health outcomes, in situations where polio was endemic, interventions by faith leaders in India shifted opposition enabling India to become polio free; and globally HIV/AIDS services provided by religious agencies enabled access of ART for an estimated 8 million (Karam 2014 p.41), (UNFPA 2016).

The formation of the International Partnership on Religion and Sustainable Development (PaRD) by the German government confirmed Germany's leading role in articulating the significance of faith and development. The German Federal Ministry for Economic Cooperation and Development Report 'Religious Communities as partners for Development Cooperation', launched in 2016, speaks broadly to the way that religious communities are essential for ongoing development. But a continuing thread within these diverse approaches is that the strategic public health principles of equity, justice, health literacy, socialisaton, and knowledge exchange are advocated as principles which faith leaders and their communi-

ties can shape (BMZ 2016). This active global health advocacy movement for recognizing religious players in public health has shaped international thinking.

One benchmark of increased recognition is that in July 2015 the World Bank with the German Federal Ministry for Economic Cooperation and Development, USAID, the UK Department for International Development hosted a Faith and Development Conference at the World Bank in Washington (World Bank 2015).

This conference set a new standard for recognising the assets that religious organisations and agencies brought initially to the Millennium Development Health Goals and now to the delivery of the Sustainable Development Goals. These 17 time-bounded goals spanning to 2030 and agreed by 193 nations set out a strategy for all countries to work together "to end poverty and hunger everywhere; to combat inequalities within and among countries; to build peaceful, just and inclusive societies; to protect human rights and promote gender equality and the empowerment of women and girls; and to ensure the lasting protection of the planet and its natural resources" (UNGA 2015). The President of the Word Bank, Jim Yong Kim, acknowledged the importance of the work of religious organisations, arguing that they were frequently on the front line, frequently in areas of abject poverty, constantly protecting the vulnerable and providing for the hard to reach, quietly ensuring as best they could with resources that were often far below those of development agencies. Indeed, the new World Bank strategy of "a preferential option for the poor" has emerged from a religious source, Roman Catholic social teaching. Global health agencies determining public health approaches have noted "every religion shared this fundamental commitment to the poorest and most vulnerable and that this provided a common platform with the international development community aim to end extreme poverty. To all public health and religious leaders Kim explained, "We need prophetic voices to inspire us and evidence to lead the way" (World Bank 2015).

The shift in understanding of the role that religion and faith-inspired communities contribute to health, especially in LMICs, has been welcomed There is an increase in the presence of religious leaders within UN led consultations influencing global public health. As religious participation expands, some have pointed out a need to broaden participation. The Joint Learning Initiative on Faith and Local Communities [http://jliflc.com] argues for moving beyond over-reliance on the normative approaches presented by mainstream religious institutions that often have their headquarters based in high income countries. Participation must also encompass religious communities and spiritualties that are less representative of mainstream or world religions. Such groups adhere to beliefs that sit outside science-based worldviews, beliefs that include faith healing, juju powers, and the presence of the living dead.

Not surprisingly, in view of the newness of this new collaborative paradigm, there is a need for more empirical evidence to guide how such collaborations are conducted.

2   Conceptual Frameworks and Evidence: International Relevance?

The research reviews in Part I of this volume point out many empirical studies of R/S-health relations that have been conducted outside of the US and often in Low and Middle Income Countries or outside of western society. The extent of such evidence varies considerably between topics. Table 1 shows selected highlights of international evidence sources that are mentioned in Part I. These include widely internationally replicated evidence for favorable relations between R/S factors and less frequent smoking, less heavy consumption of alcohol, and less risky sexual behavior. Also noted is evidence showing positive relations with well-being in many populations, but more mixed relations between R/S and schizophrenia, between R/S and social factors such as income inequality and prejudice, and between R/S and various attitudes toward environmental protection.

Together, such findings support the cross-cultural relevance of the conceptual frameworks offered in this volume's Part I, in the chapter entitled "Model of Individual Health Effects from Religion/Spirituality: Supporting Evidence", which point to generally favourable health effects mediated through pathways such as health behaviors and social connections. They also appear compatible and consistent with perspectives in this volume's chapter, "Social and Community-Level Factors in Health Effects from Religion/Spirituality", which presents what it calls a "dynamic and evolving" view of religion and its relations to concerns such as social justice, a framework allowing for both favorable and unfavorable relations, depending on circumstances.

Such cross-cultural similarities do not mean that religion and spirituality operate identically in every culture, or will predict health in precisely similar ways. Dimensions of religion that are predictive and deemed important in western cultures – for example, frequency of attendance at religious worship services, consistently linked to greater longevity in predominantly Christian samples in the US – may be deemed much less important elsewhere in the world, such as in South and East Asian cultures (e.g., Krause et al. 1999). Furthermore, as discussed in this volume's chapter "Reviewing Religion/Spirituality Evidence from a Public Health Perspective: Introduction", denominational differences in health, although often observed, are liable to arise from demographic confounding, and such denominational differences have not been a focus of this volume. On some occasions, however, evidence suggests that different denominational teachings or practices may indeed exert differential causative impacts on health (see Box 1, chapter "Reviewing Religion/Spirituality Evidence from a Public Health Perspective: Introduction"). Nonetheless, a case may be made that most places where they exist, religion and spirituality perform a variety of similar functions, such as the facilitation of distinctly religious methods of coping – functions that may explain the cross-culturally similar and generally favorable patterns of R/S-health association (e.g., Pargament 1997).

Table 1 Topic and locations (selected) of international evidence cited in reviews in Part I of this book

Empirical question[a]	Locations of reviewed empirical studies[b]	Chapters[c]
R/S ↔ smoking?	Poland, Central America, Mexico, Iran, Israel, Lebanon, South Africa	Model of Individual Health Effects from Religion/ Spirituality: Supporting Evidence
R/S ↔ alcohol?	Australia, Finland, Hungary, Poland, Spain, United Kingdom, Brazil, the Caribbean, Central America, Mexico, Israel, Lebanon, Thailand, Turkey, South Africa	Model of Individual Health Effects from Religion/ Spirituality: Supporting Evidence
R/S ↔ risky sexual activity?	Australia, Slovakia, the Caribbean, Iran, Israel, Kenya, Malawi, Nigeria	Model of Individual Health Effects from Religion/ Spirituality: Supporting Evidence
R/S ↔ hypertension?	Greece, Italy, Netherlands, United Kingdom, West Indies, Egypt, Israel, Kuwait, Turkey, India, Japan, Taiwan, Thailand, South Africa	Religious/Spiritual Effects on Physical Morbidity and Mortality
R/S ↔ self-rated health?	Bosnia, Denmark, Finland, Italy, Poland, Scotland, Caribbean, Latin America, Mexico, Israel, Taiwan, 49 countries worldwide[d]	Religious/Spiritual Effects on Physical Morbidity and Mortality
R/S ↔ income inequality?	23 European countries;[d] 55 countries worldwide[d]	Social and Community-Level Factors in Health Effects from Religion/Spirituality
R/S ↔ racial prejudice?	47 European countries[d]	Social Identity and Discrimination in Religious/ Spiritual Influences on Health
R/S ↔ prejudice by religion?	44 European countries[d]	Social Identity and Discrimination in Religious/ Spiritual Influences on Health
R/S ↔ concern for environment?	22 European countries,[d] 11 Latin American countries[d]	Environmental Health Sciences, Religion, and Spirituality
R/S ↔ adult well-being?	12+ European countries[d] that range from Germany to Greece; Uruguay, Kuwait, India, Malaysia, Pakistan, 140+ countries worldwide[d]	Model of Individual Health Effects from Religion/ Spirituality: Supporting Evidence
R/S ↔ youth well-being?	Australia, Ukraine, United Kingdom, India, Thailand, Cameroon	Maternal/Child Health, Religion, and Spirituality
R/S ↔ depression?	Netherlands, Yugoslavia, Mexico, Iran, Israel, Palestine, Afghanistan, Taiwan	Mental Health, Religion, and Spirituality

(continued)

Table 1 (continued)

Empirical question[a]	Locations of reviewed empirical studies[b]	Chapters[c]
R/S ↔ anxiety?	Germany, Israel, Afghanistan, Japan, Sri Lanka	Mental Health, Religion, and Spirituality
R/S ↔ schizophrenia?	Europe, Middle East, East Asia, South Asia, South East Asia	Mental Health, Religion, and Spirituality

[a]All reviewed evidence suggests primarily favourable association between higher R/S and better health profiles, except for associations with income inequality (unfavourable, with indications that inequality causally drives R/S), and racial and religious prejudice (mixed, with spiritual dimensions favourable, "one true religion" unfavourable), and schizophrenia (near-equal balance of favourable and unfavourable)

[b]Selected locations outside of the US or Canada that are mentioned in Part I as sites of reviewed studies

[c]Name of chapter in this volume where the evidence is discussed

[d]Evidence from large cross-national studies of many countries

Much of the western R/S-health research literature conceives religious/spiritual engagement as possessing plausible or perhaps already demonstrated causative effects on health (see chapter in this volume entitled "Weighing the Evidence: What is Revealed by 100+ Meta-Analyses and Systematic"). But WHO and related international agencies have devoted little if any attention to religion's potential causative effects on health. Rather, these agencies' attention to religion has overwhelmingly emphasized religious communities as collaborative partners that can extend the reach and effectiveness of primarily modern healthcare systems and approaches. While positive relations and joint agency/community actions are welcome, the agency-versus-literature differences in focus are striking and merit questioning. Olivier (2016, p. 6) reports that "many religious institutions are displaying increased discomfort at being mapped and treated in an 'instrumental way' by the international development sector." Does the one-sided agency emphasis merely reflect urgent practical exigencies, or might it indeed reflect a tendency by international health agencies to instrumentalize religious communities while remaining oblivious to their distinctive and irreplaceable contributions to life? Would non-instrumentalized relations of mutual respect be strengthened by research that documents a unique causative added value from religion in non-western settings? Answers to these questions are ethically and practically important, but far from clear.

3   Snapshots of Religion and Public Health Interactions and Collaborations in Low and Middle Income Countries

From a global perspective, low and middle income countries – LMICs – have been largely neglected by religion/spirituality and health research to date. Western-derived R/S-health frameworks may generalize only imperfectly to LMICs. Yet a majority of the world's religiously engaged people live LMICs, where religion and culture are typically deeply intertwined. Perhaps even more than in higher-income countries, religion/spirituality in LMICs may affect all facets of health experience, ranging from health behavior to treatment and care, yet these manifold influences are largely unstudied. Therefore, to convey some of the similarities as well as the differences in the relevance of R/S-health relations in LMICs versus wealthy western countries, we now offer a series of snapshots of how religion/spirituality and public health have interacted and collaborated in LMICs. We particularly emphasize African countries, where the first author has done much public health work. For most examples, or "snapshots," we suggest important take-home messages, reflecting on relevant points of comparison elsewhere in this volume.

3.1   Snapshot 1, Health Assets: The Global Relevance of Salutogenic Approaches

As noted earlier in this volume, asset-focused and salutogenic approaches that focus on sources of health (rather than causes of illness) can be useful for conceptualizing how R/S factors may foster health (Levin 1996). For example, in the US, involvement of adolescents in religion/spirituality has been recognized and studied as salutogenic *developmental assets* (see chapter "Maternal/Child Health, Religion, and Spirituality", this volume; Fergus and Zimmerman 2005). Similarly, among adults, religious and spiritual communities and practices may foster health-supportive psychological qualities in addition to supplying social support and numerous other resources for coping with stress (see "Social and Community-Level Factors in Health Effects from Religion/Spirituality", this volume).

Public health systems in non-western societies have employed asset-focused approaches that recognize the health value of R/S factors. One leader in this work has been South Africa's James Cochrane, a founding father of the International Religious Health Assets Programme (IRHAP; originally Africa-focused with the acronym ARHAP). This collaborative was established to strengthen the evidence on the functioning of faith inspired health institutions and faith communities within their contextualized health systems in low income especially in development settings. Using a broad definition of religion which includes all faiths and cultures

through which health and healing are interpreted, IRHAP has drawn together inter-disciplinary research on the intersection between religion, public health and traditional development policies and aid packages. This work has shown the multiple initiatives and the alternative ways in which faith communities, such as church services, youth groups, home care volunteers and benefit societies have created positive networks for people experiencing health problems, as well as direct biomedical services in hospitals, health centres, outreach clinics and primary, community and home based care services (Blevins et al. 2012; Berkley Center 2016) (see also chapter on "Implications for Public Health Systems and Clinical Practitioners: Strengths of Congregations, Religious Health Assets and Leading Causes of Life", this volume).

3.2 Snapshot 2, Female Genital Mutilation: Religion as Both Problem and Solution

While there are many favorable associations between religion/spirituality and health, some R/S impacts on health are also negative. Evidence for both favorable and unfavorable associations was noted for several topics reviewed earlier in this volume, including the effects of religion/spirituality on community and environmental health factors (see, for example, chapter on "Social and Community-Level Factors in Health Effects from Religion/Spirituality", this volume).

Perhaps unsurprisingly, the potential for unfavorable health effects from R/S factors is evident across the globe, including in LMICs. In LMICs, negative effects from R/S are sometimes the result of traditional and cultural practices that have evolved in association with religion but are secondary to it, and which can be challenged and redefined through careful cultural tailoring. At other times the need is to confront vested religious interests that perpetuate discriminatory or harmful practices. In the series on Faith based Health care, Tomkins et al. (2015) describe a complex set of controversies where religious systems propagate or appear to endorse behaviors or processes that breach codes of medical ethics. One dramatic example is Female Genital Mutilation (FGM).

FGM is an enduring problem in a number of countries. Religious traditions have been associated with the continuation of FGM, which is estimated to have been carried out on 100 million girl children in Africa and the Middle East. Defined by WHO as "all procedures that involve partial or total removal of the external female genitalia or other injury to the female genital organs for non medical reasons" (WHO 2008), it can lead to difficult or impossible labour in pregnancy, resulting in maternal death. FGM is a violation of human rights, a form of torture, and therefore a major public health concern.

A systematic review by Berg and Denison (2013, p. 843) lists religion as both a "perpetuating" and a "hindering" factor for FGM, noting evidence that many people who engage in the practice erroneously believe it is a religious duty. Rather, FGM often "derives from a complex belief set, in which cultural tradition takes precedence within a frame of sexual–moral and religious reasons that are sustained through community mechanisms" (Berg and Denison 2013, p. 854). Historically, FGM was widely practiced before Islam or Christianity became dominant religious systems in Africa. Berg and Denison (2013) recommend that future approaches to eliminating FGM "should target stakeholders at the intrapersonal through to the macro levels," that "information, messages, and activities [must be] tailored to their audiences," that FGM "is not a religious obligation" and that "findings indicate advantages in establishing an alliance with religious leaders, who often function as norm authorities" (p. 852). They note that recent interventions by religious leaders provide evidence of the favorable role that religion can play as a protection against FGM.

3.3 Snapshot 3, Ebola: Religion as Doorway to Understanding Multiple Worldviews

R/S provides lenses to understand the world which may mobilize social energies in ways that either align or clash with public health understandings of health safety. When clashes occur, ways forward may only be possible when public health workers in partnership with religious leaders weigh options in light of local religious perspectives. For example, over 10,000 people died in the recent Ebola crisis in West Africa. The fragile, health systems in the affected countries collapsed as the pandemic spread. To curtail and manage the pandemic, global health agencies identified processes and procedures from standardised health crises intervention strategies. But these agencies failed initially to recognize that their "best practice" strategies were being interpreted by local communities as insensitive and needlessly fearful. In some communities the intent of the public health interventions was even interpreted as being more destructive than the virus. This was the case, for example, in Sierra Leone, where complex belief systems shaped by diverse religious institutions and the traditional secret societies of different groups of people required a different approach to care and to managing the dead.

As the crisis unfolded, there was a major disjuncture between cultural/religious traditions and public health policies. Public health policies demanded segregation, lack of touch, separation of the dying, and no immediate tangible rituals performed on the bodies of those who had died. In contrast, traditions of care required washing the dead body, preparing the dead for their journey, removing the foetus from a dead pregnant women so as not to harm the cycle of old and new, pouring out libations, and praying for the departed soul. The disjuncture went deeper than the fear of contamination and the spread of the disease. Societies described a fear of future destruc-

tion where crop cycles and harvest would fail because traditional rituals had been abandoned, and a fear that those left unprotected by such rituals would wander the earth and come back to haunt their loved ones, unable to be at peace. While traditional funeral practices had to be changed as these practices were a major source of contamination and disease spread, the processes of change needed to be different and more compassionate. A resolution, developed by a partnership of religious leaders with public health leaders in Sierra Leone, was translated into the WHO Safe and Dignified Burial Protocol (World Health Organization 2014).

3.4   Snapshot 4, Religion and HIV: A Complex Interplay

The intersection of religion and HIV provides multiple examples of positive and negative R/S-health interactions. Especially in the early years of the pandemic, misinformation, discriminations, abuse, stereotyping and judgment came from faith communities. Fear and lack of information shaped responses when the pandemic took hold in Sub-Saharan Africa. Monotheistic faiths in areas of high HIV prevalence were seen by public health professionals as a major source of negative attitudes. Traditional cultural views and beliefs about diseases that caused people to become unhealthily thin and covered in sores because they have broken sexual taboos within kinship and clan rules meant that those with HIV were often seen as cursed.

But traditional religious organizations also played very positive roles, as noted in the empirical reviews in this volume (see chapter "Infectious Diseases, Religion, and Spirituality"). Over time, enormous numbers of local congregations undertook compassionate responses. For example, one study of 42 churches in 33 rural Zimbabwean villages found that the main motives for church involvement in HIV activities were to provide comfort (47%) serve God (17%) and reduce the spread of HIV (12%). Faith responses focused on holistic care strategies to reduce the spread of HIV infection with provision of material support and money to those in need (Foster et al. 2012). More broadly, Trinitapoli and Weinreb (2012) synthesized much work on HIV and religion in Africa, concluding that a large salutary effect of religion takes place at the "mesolevel" (p. 212) of local congregations, a level often equally overlooked by individually-focused empirical research and news reports that emphasize official national-level pronouncements. Congregations can support prosocial moral motivations and represent "spaces in which social learning, cultural innovation, and cultural transmission take place" (p. 212). Evidence suggests "the magnitude of religious responses to AIDS in terms of prevention efforts and the provision of spiritual, emotional, and practical support for [people living with HIV and AIDS] is such that without this support, the toll of AIDS on communities in SSA would be infinitely worse" (p. 212).

3.5 Snapshot 5, Collaborations: Religion as Purveyor of Persuasive Health Information

Another example of the role of religious and faith leaders in shaping community health seeking behaviors is that of immunization. The review earlier in this volume reported some evidence for overall favorable relations between religious observance and higher rates of immunization, but noted that the strength and even direction of the association may potentially vary by denomination (chapter "Infectious Diseases, Religion, and Spirituality", this volume). In countries with more fragile or over-stretched health systems, collaboration with religious organizations and leaders can often be crucial to extend the reach of immunisations to those needing them most. For example in Pakistan, madrassas have become a central stakeholder in the polio eradication campaign since the Government of Pakistan emphasized vaccination as an Islamic responsibility (Ahmed et al. 2013).

Public health also has a role especially in regions where healthcare provision by formal, state or NGO/not for profit funded sources sits alongside traditional healing systems of care where herbalists, and traditional practitioners offer services. A study by Mwabu (1986) in rural Kenya identified a huge variation in patterns and places of attendance for health care. Mwabu provided evidence that patients sought health-care outside the free Government services, often in faith owned facilities, and frequently simultaneously consulted other providers, such as traditional healers. Similar findings on dual health seeking behavior are more common than previously thought, as documented in recent doctoral studies from South Africa, Uganda, and Kenya, that have explored service usage by those with terminal illness (Kimani et al. 2016; Grant et al. 2011a).

3.6 Snapshot 6, Palliative Care: Needed Globally

Palliative care was not generally viewed in the twentieth century as a matter of public health relevance. But in 2014 the World Health Assembly Resolution on Palliative Care recognised palliative care as a major public health concern for millions world-wide living with non-communicable diseases including cancers, COPD, and heart failure; and chronic infectious diseases such as MDRTB and HIV. Studies exploring examples of practice in end of life care have highlighted care delivered by religious organisations outside the national fragile health systems in many African and Asian countries. Other studies, in both high and low income countries, have highlighted the wholeness of care, recognizing the multiplicity of patient health needs that include spiritual, emotional, and social needs, as well as physical needs such as pain relief and symptom management (Edwards et al. 2010; Grant et al. 2011a).

The demand for palliative care services in Sub-Saharan Africa far exceeds current capacity. Less than 5% of those in need can actually access such care (Grant et al. 2011a, b). It is within the faith communities that palliative care services have

expanded most rapidly. Faith communities were also the first to identify that palliative care provision is not simply good practice and a human right, but that such care can function to prevent people from being pushed into cycles of poverty (Anderson and Grant 2017).

4   Planetary Health

Are religion and public health merely partners of convenience and expedience, or do they possess deeper shared goals? A deeper relation is suggested by the shared etymology of health and holy: like the words "whole" and "hale," both are derived from the same root *hal*, meaning "entire or complete" (Sevensky 1983, p. 165). The common ground and collaborative promise of religion/spirituality and public health is also evident in the emerging concept of *planetary health*. Planetary health has been articulated in the professional literatures of public health and development as "the achievement of the highest attainable standard of health, wellbeing and equity worldwide through judicious attention to the human systems – political, economic and social – that shape the future of humanity and the Earth's natural systems that define the safe environmental limits within which humanity can flourish. Put simply, planetary health is the health of the human civilisation and the states of the natural systems on which it depends" (Whitmee et al. 2015, p. 1978).

Planetary health can be viewed as a systematic articulation of a fully holistic concept of health in the context of the 2015 United Nations Sustainable Development Goals. With planetary health's concern for both humanity and the natural world, there are multiple convergences with the worldviews of many of the world's major religious traditions. As noted earlier in this volume, a strong stream of concern for the environment is embedded in every major religious tradition, although environmental attitudes vary between denominations, and environmental concern is not manifested equally in every denomination or sect (chapter "Environmental Health Sciences, Religion, and Spirituality", this volume). At least two journal special issues and a range of other publications have highlighted ecological resources and environmental attitudes in the tenets of major R/S traditions (see, for example, Francis 2015; Gottlieb 2006; Hitzhusen 2006; Tucker and Grim 2001; Vaillancourt and Cousineau 1997). Similarly, all major religions and most denominations espouse a vision of all people as worthy of our compassion and fraternal love, and belonging, at least potentially, to a universal, global human family (Kinnier et al. 2000; Peterson and Seligman 2004). To paraphrase Peterson and Seligman (2004, p. 35), ecological and global family concepts are not identical across different religious traditions, but the various conceptions display a "coherent resemblance" with one another, as well as with the concept of planetary health.

To put it another way, important metanarratives across the world's religions all speak to core concepts that are now also gaining increasing recognition in global public health, and are reflected and embedded in the concept of planetary health as the deep convergence, if not unity, between the long term welfare of all people as

well as the environment. Clearly, much human effort, and perhaps also the grace of alignment with forces more powerful than human agency, will be required before this vision can be fully realized.

5 Conclusions

This chapter, using illustrations from low income settings has aimed to show that public health, in its widest form, that of caring for the whole planet and the people within it for the present and for the future, can gain by being responsive to the contribution that religion and spirituality can make. What might be called the deep secularism of the western worldview has emerged out of a modern western dichotomous framing of the world as primarily material and physical, with religion constructed as a separate, value added entity. In the lead author's international experience, few people in low and middle income countries identify with privatized religion, treated as an "add–on" personalised construct. Across the globe, communities in multiple countries interpret their world using a framework that includes rather than excludes sacredness. Invisible and visible, tangible and intangible forces and systems work together to create well-being and facilitate health. Religions, therefore, with their culturally and traditionally grounded ideas on the value of the person in community, and on healing and healthiness as part of the sacredness of life, play an important though often un-expressed part in the health systems of many countries.

The call to engage with religious and faith agencies and to recognise the value of using a lens of spiritual and religious beliefs and systems to understand public health issues is not new. The shared trajectory of religion and public health is as old as their co-presence on the planet, although this collaborative trajectory is increasingly available in new modern forms, and is increasingly informed by empirical evidence, as displayed and documented in this chapter and throughout this volume.

References

Ahmed, Q. A., Nishtar, S., & Memish, Z. A. (2013). Poliomyelitis in Pakistan: Time for the Muslim world to step in. *The Lancet, 381*(9877), 1521–1523. https://doi.org/10.1016/S0140-6736(13)60764-3.

Anderson, R. E., & Grant, L. (2017). What is the value of palliative care provision in low-resource settings? *BMJ Global Health, 2*(1), e000139. https://doi.org/10.1136/bmjgh-2016-000139.

ARHAP. (2006). *Appreciating assets: The contribution of religion to universal access in Africa*. Report for the World Health Organization by the African Religious Health Assets Programme. Cape Town: African Religious Health Assets Program (ARHAP).

Berg, R. C., & Denison, E. (2013). A tradition in transition: Factors perpetuating and hindering the continuance of Female Genital Mutilation/Cutting (FGM/C) summarized in a systematic review. *Health Care for Women International, 34*(10), 837–859. https://doi.org/10.1080/07399332.2012.721417.

Berkley Center. (2016). *International religious health assets programme*. https://berkleycenter.georgetown.edu/organizations/international-religious-health-assets-programme. Accessed 28 Dec 2016.

Blevins, J., Thurman, S., Kiser, M., & Beres, L. (2012). Community health assets mapping: A mixed method approach in Nairobi. In J. Olivier & Q. Wodon (Eds.), *Mapping, cost, and reach to the poor of faith-inspired health care providers in Sub-Saharan Africa strengthening the evidence for faith-inspired health engagement in Africa* (Vol. 3, pp. 91–101). Washington, DC: World Bank.

BMZ. (2016). *Religious communities as partners for development cooperation*. Berlin: Federal Ministry for Economic Cooperation and Development. https://www.bmz.de/en/publications/type_of_publication/strategies/Strategiepapier363_02_2016.pdf

Edwards, A., Pang, N., Shiu, V., & Chan, C. (2010). The understanding of spirituality and the potential role of spiritual care in end-of-life and palliative care: A meta-study of qualitative research. *Palliative Medicine, 24*(8), 753–770. https://doi.org/10.1177/0269216310375860.

Fergus, S., & Zimmerman, M. A. (2005). Adolescent resilience: A framework for understanding healthy development in the face of risk. *Annual Review of Public Health, 26*, 399–419. https://doi.org/10.1146/annurev.publhealth.26.021304.144357.

Foster, G., Maphosa, T., & Kurebva, F. (2012). Faith untapped: Linking community-level and sectoral health and HIV/AIDS responses. In J. Olivier & Q. Wodon (Eds.), *The comparative nature of faith-inspired health care providers in Sub-Saharan Africa* (Vol. 2, pp. 114–121). Washington, DC: World Bank.

Francis, Pope. (2015). *Encyclical on climate change & inequality: On care for our common home*. Brooklyn: Melville House.

Gottlieb, R. S. (Ed.). (2006). *The Oxford handbook of religion and ecology*. New York: Oxford University Press.

Grant, L., Brown, J., Leng, M., Bettega, N., & Murray, S. (2011a). Palliative care making a difference in rural Uganda, Kenya and Malawi: Three rapid evaluation field studies. *BMC Palliat Care, 10*(1), 8. https://doi.org/10.1186/1472-684X-10-8.

Grant, L., Downing, J., Namukwaya, E., Leng, M., & Murray, S. A. (2011b). Palliative care in Africa since 2005: Good progress, but much further to go. *BMJ Supportive & Palliative Care, 1*(2), 118–122. https://doi.org/10.1136/bmjspcare-2011-000057.

Green, A., Shaw, J., Dimmock, F., & Conn, C. (2002). A shared mission? Changing relationships between government and church health services in Africa. *The International Journal of Health Planning and Management, 17*(4), 333–353. https://doi.org/10.1002/hpm.685.

Hitzhusen, G. E. (2006). Religion and environmental education: Building on common ground. *Canadian Journal of Environmental Education, 11*(1), 9–25.

Karam, A. (2010). The United Nations Population Fund's (UNFPA's) legacy of engaging faith-based organizations as cultural agents of change. *CrossCurrents, 60*(3), 432–450. https://doi.org/10.1111/j.1939-3881.2010.00141.x.

Karam, A. (2014). *Religion and development post-2015: Report of a consultation among donor organistions, United Nations development agencies and faith based organizations*. New York: UNFPA.

Kimani K., Namukwaya E., Grant L., et al. (2016). *What is known about heart failure in Sub-Saharan Africa: A scoping review of the English literature*. BMJ Support Palliat Care Published Online First: 12 January 2016. https://doi.org/10.1136/bmjspcare-2015-000924

Kinnier, R. T., Kernes, J. L., & Dautheribes, T. M. (2000). A short list of universal moral values. *Counseling & Values, 45*(1), 4–16. https://doi.org/10.1002/j.2161-007X.2000.tb00178.x.

Krause, N., Ingersoll-Dayton, B., Liang, J., & Sugisawa, H. (1999). Religion, social support, and health among the Japanese elderly. *Journal of Health and Social Behavior, 40*(4), 405–421. https://doi.org/10.2307/2676333.

Levin, J. S. (1996). How religion influences morbidity and health: Reflections on natural history, salutogenesis and host resistance. *Social Science and Medicine, 43*(5), 849–864. https://doi.org/10.1016/0277-9536(96)00150-5.

Mwabu, G. M. (1986). Health care decisions at the household level: Results of a rural health survey in Kenya. *Social Science and Medicine, 22*(3), 315–319. https://doi.org/10.1016/0277-9536(86)90129-2.

Olivier, J. (2016). Hoist by our own petard: Backing slowly out of religion and development advocacy. *Theological Studies, 72*(4), a3564.

Olivier, J., Leonard, G. S. D., & Schmid, B. (2012). *The cartography of HIV and AIDS, religion and theology: A partially annotated bibliography*. Pietermaritzburg: The Collaborative for HIV and AIDS, Religion and Theology.

Pargament, K. I. (1997). *The psychology of religion and coping: Theory, research, practice*. New York: Guilford.

Peterson, C., & Seligman, M. E. P. (2004). *Character strengths and virtues: A handbook and classification*. Washington, DC: American Psychological Association.

Sevensky, R. L. (1983). The religious foundations of health care: A conceptual approach. *Journal of Medical Ethics, 9*(3), 165–169.

Tomkins, A., Duff, J., Fitzgibbon, A., Karam, A., Mills, E. J., Munnings, K., et al. (2015). Controversies in faith and health care. *The Lancet, 386*(10005), 1776–1785. https://doi.org/10.1016/S0140-6736(15)60252-5.

Trinitapoli, J. A., & Weinreb, A. (2012). *Religion and AIDS in Africa*. Oxford/New York: Oxford University Press.

Tucker, M. E., & Grim, J. A. (2001). The emerging alliance of world religions and ecology. *Daedalus, 130*(4), 1–22.

UNFPA. (2016). Engaging religion and faith-based actors in 2016: Annual report of the United Nations Inter-Agency Task Force on Engaging Faith Based Actors for Sustainable Development.

UNGA. (2015). *Transforming our world: The 2030 Agenda for Sustainable Development*. https://sustainabledevelopment.un.org/post2015/transformingourworld. Accessed 28 Dec 2016.

Vaillancourt, J.-G., & Cousineau, M. (1997). Introduction [Religion and environment special issue]. *Social Compass, 44*(3), 315–320.

Whitmee, S., Haines, A., Beyrer, C., Boltz, F., Capon, A. G., de Souza Dias, B. F., et al. (2015). Safeguarding human health in the Anthropocene epoch: Report of the Rockefeller Foundation–Lancet Commission on planetary health. *The Lancet, 386*(10007), 1973–2028. https://doi.org/10.1016/S0140-6736(15)60901-1.

WHO. (2008). *Eliminating female genital mutilation: An interagency statement – OHCHR, UNAIDS, UNDP, UNECA, UNESCO, UNFPA, UNHCR, UNICEF, UNIFEM, WHO*. http://apps.who.int/iris/handle/10665/43839. Accessed 28 Dec 2016.

WHO. (2009). *Faith-based organizations play a major role in HIV/AIDS care and treatment in Sub-Saharan Africa*. http://www.who.int/mediacentre/news/notes/2007/np05/en/. Accessed 28 Dec 2016.

World Bank. (2015, July 12). *Global conference on religion and sustainable development* [press release]. http://www.worldbank.org/en/news/press-release/2015/07/12/global-conference-religion-sustainable-development. Accessed 28 Dec 2016.

World Health Organization. (2014). *Field situation: How to conduct safe and dignified burial of a patient who has died from suspected or confirmed Ebola Virus Disease*. http://www.who.int/iris/handle/10665/137379. Geneva: World Health Organization.

Yates, D. (2003). *Situational analysis of the church response to HIV/AIDS in Namibia: Final report*. Windhoek: Pan African Christian AIDS Network.

What's Next?: Public Health and Spirituality

Doug Oman

Abstract This present chapter concludes a 28 chapter volume on the relevance of religion and spirituality (R/S) to the field of public health. The volume contains 13 empirical reviews of R/S-health relations (Part I), two chapters addressing practical implications of R/S for public health (Part II), and eight chapters on how R/S factors have been incorporated into public health education and training offered at US-based schools and colleges of public health (Part III).

This concluding chapter emphasizes common purposes between public health and religion/spirituality, advocating for both the study of religious/spiritual factors in health, and for positive and respectful collaboration. Even benignly ignoring religion and spirituality, the chapter asserts, is not an acceptable option. The chapter concludes by offering examples of needed future directions that include (1) the development of more educational materials for teaching about R/S factors in schools of public health; (2) the publication of additional systematic reviews and meta-analyses of R/S-health relations, especially in subfields of public health where few such reviews are present; (3) Exploration of appropriately structured and possibly multi-level interventions that synergistically combine spiritual components with meditation and/or mindfulness practices; and (4) Further exploration and testing of the cross-cultural generalizability of major constructs and findings in Western-dominated R/S-health research.

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An "elephant in the room" was how chapter "Elephant in the Room: Why Spirituality and Religion Matter for Public Health" in this volume characterized the meaning of religion and spirituality for contemporary public health. That chapter's remarks emphasized the volume of the empirical research literature on religion/spirituality (R/S), their worldwide relevance in daily living, and their capacity to elicit and channel peoples' deeper and more powerful motivations. Why, then, have R/S factors received so little attention in public health? The 26 subsequent chapters in this volume sought to map the evidence in ways needed by public health (Part I), sketch various ways that religious and spiritual factors are deeply relevant to public health practice (Part II), and demonstrate the feasibility of addressing R/S factors in academic public health education and training (Part III).

We hope that those chapters help familiarize the reader with the "elephant" of religion/spirituality – not simply as an object of study, but also as a collaborative partner or even perhaps as a *colleague*. In particular, several chapters have emphasized the deep and longstanding interest that most religious traditions hold in health, with chapter ("International and Global Perspectives on Spirituality, Religion, and Public Health") pointing out that the very word "health" is related to the words "whole" and "holy" (Sevensky 1983, p. 165). Viewed as a colleague – a member of a team working for the public's health – the R/S elephant is a very powerful, resourceful, and well-connected colleague, able to mobilize large numbers of people and diverse sources of organizational support. But the R/S elephant also possesses a few idiosyncrasies, occasionally quite troublesome. For example, viewed as a colleague, the elephant is at best inconsistent in updating its knowledge and skills to include all of the most recent concepts and recommendations. Yet, perhaps sometimes when it is least expected, the religious/spiritual communities may step to the forefront in efforts relevant to public health (e.g., Francis 2015).

If the reader receives a single "take home message" from this volume, we hope it is that public health can no longer even benignly ignore religion and spirituality. As public health professionals, we must learn to function more consistently as informed and committed coworkers with religious communities, capable of offering respectful and constructive criticism when appropriate, but also capable of proactively giving credit where credit is due. That this represents a *shift* for public health is apparent in our survey findings (chapter "Introduction: What Should Public Health Students Be Taught About Religion and Spirituality?") and even more clearly in the paucity of current pedagogical materials. But a shift to acknowledging R/S factors is a very feasible shift. It is a needed shift, one that will arguably enhance the *resilience* of public health institutions and public health as a field. Balanced attention to R/S factors will strengthen our ability to flexibly and with integrity cooperate with a wider range of partners, and support a wider and deeper range of salutogenic health-promoting activities and processes, than otherwise would be possible.

1 Future Directions

What, then, are the necessary and important directions for future work in the field of R/S and public health? What are the field's most fundamental challenges? Such questions cannot be answered definitively by any single author or group of authors, and will benefit from ongoing engagement by public health researchers, practitioners, and educators around the world. To encourage such engagement I now offer a few suggested starting points relevant to each of these groups and to colleagues around the world.

Educational Materials First, more materials are needed for teaching about R/S and public health. We hope and believe that this volume can serve as a useful resource for improving our educational efforts, alongside the recent volume by Idler (2014). But if the vision presented in the Part III introductory chapter "Introduction: What Should Public Health Students Be Taught About Religion and Spirituality?" is correct, many additional pedagogical materials will be needed. As instructors nationwide in different public health subfields experiment with how best to address R/S factors within existing courses, many may wish to use the specific review chapters from Part I of this volume. But others may also augment this volume's reviews with richly described case examples relevant to their particular subfield, or with condensed and easily digestable summaries of what we have called the "generic model" of R/S-health effects (see chapter "Model of Individual Health Effects from Religion/Spirituality: Supporting Evidence"). Still others may want to offer their students catalogues of health-related denominational attitudes analogous to catalogues available for clinically-oriented health professions (see Box 1, chapter "Reviewing Religion/Spirituality Evidence from a Public Health Perspective: Introduction," this volume). Or to assign materials that convey a sense of how living religious/spiritual traditions may often function as rich coping resources for their adherents (e.g., Pargament et al. 2001; see chapter "Questions on Assessing the Evidence Linking Religion/Spirituality to Health," this volume). Who will lead in developing such materials?

Investigation Many additional and updated systematic reviews and meta-analyses of R/S factors and health variables will also surely be needed in the future. In conducting the Part I reviews, we identified and utilized numerous published systematic reviews. But the availability of such reviews is very uneven between chapters and between public health subfields. As shown in chapter ("Weighing the Evidence: What is Revealed by 100+ Meta-Analyses and Systematic Reviews of Religion/Spirituality and Health?," this volume, Table 1), published systematic reviews are already somewhat plentiful in subfields such as clinical practice, mental health,

health policy and management, and the generic model for individual effects. But reviews are comparatively scarce and correspondingly needed for other subfields, notably those emphasizing community-level factors, such as social factors other than crime (chapter "Social and Community-Level Factors in Health Effects from Religion/Spirituality") and environmental health sciences (chapter "Environmental Health Sciences, Religion, and Spirituality"). Recent refereed systematic reviews are also surprisingly scarce with regard to morbidity (chapter "Religious/Spiritual Effects on Physical Morbidity and Mortality").

Simple systematic reviews are useful, but meta-analyses and meta-syntheses are even more useful. How many R/S-health topics possess a research base that is newly ripe for meta-analysis? For example, do we now possess sufficient numbers and quality of empirical studies on topics such as health behaviors (chapter "Model of Individual Health Effects from Religion/Spirituality: Supporting Evidence") and hypertension (chapter "Religious/Spiritual Effects on Physical Morbidity and Mortality")? Who will step forward to undertake such meta-analyses?

Roles for Spiritual Meditation and Mindfulness As explained in chapter "Model of Individual Health Effects from Religion/Spirituality: Supporting Evidence" in the section on "Borderline Spiritual Constructs," we have not conceptualized meditation and mindfulness as inherently spiritual or religious, because they exist and are studied in *multiple forms*, ranging from the non-spiritual to the highly spiritual. But supporting and fostering meditative and mindful states of mind – often through activities undertaken as prayer – *does* appear to be a widespread function of religion/spirituality that may be universal across major religious traditions. A substantial and growing research literature suggests numerous mental and physical health benefits from such practices (see chapter "Public Health Education, Promotion, and Intervention: Relevance of Religion and Spirituality," this volume). Furthermore, people prefer different approaches to meditation, and both national surveys and within-subjects comparison research suggests that only a minority may prefer mindfulness meditation (Burke 2012; Burke et al. 2017). Programs that simultaneously support both R/S factors *and* meditation/mindfulness factors are the transcultural and historical norm, and appear especially theoretically promising for fostering health through positive synergies between R/S and meditation/mindfulness (Oman 2010; see also Oman and Bormann in press; Wachholtz and Pargament 2008). Do such theorized synergies indeed provide short or long-term health benefits? If so, are there feasible and ethical ways to integrate such synergies in public health oriented "upstream" illness-prevention programs in schools or workplaces?[1]

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[1] Oman (2016) has identified several different instructional delivery approaches to synergistically combining R/S with meditative practices while respecting recipient R/S diversity. Each approach has distinct advantages and disadvantages and strikes a different balance. For offering spiritually synergistic meditation practices in educational settings, Oman speculates that "optimally combining and balancing [their different] advantages may be impossible within a single course, and attainable only at the level of the school or college, where each model can be available to students for whom it is the best fit" (p. 375).

Cross-Cultural Generalization Last but not least, much further exploration is needed of the international and transcultural generalizability of the findings reported in the present Western-driven R/S-health literature. Which findings apply mainly to wealthier countries, or to Abrahamic traditions, and which also generalize to lower-income countries, and to Dharmic and/or aboriginal traditions? Which findings generalize to all major cultural zones? Chapter "International and Global Perspectives on Spirituality, Religion, and Public Health" (this volume), presents much evidence supporting the generalizability of some findings, such as salutary relations with health behaviors and hypertension. In what ways do religious/spiritual methods of coping function analogously across diverse cultural zones, and in what ways do they differ? Which dimensions of religion/spirituality are the strongest predictors of health outcomes in each zone? Attendance at religious services has been strongly predictive of longevity in the West, but is not regarded as important in many non-Western cultures, such as Japan and India. Does some other R/S dimension demonstrate exceptional predictiveness?

2   Conclusion

This brief closing chapter has reminded readers of the deep connections between health and spirituality. The time has passed, we argued, when even benevolent neglecting of the topic of religion and spirituality is a viable option for public health. The three main sections of this book documented the research base, practical importance, and pedagogical viability of addressing religion/spirituality, and this chapter sketched a small sampling of pedagogical, scientific, practical, and cross-cultural areas where further work is needed. But now, the next step is up to the reader. How does the intersection of religion, spirituality, and health affect your life, and how does it enter into your work? What is your next step in contributing to planetary health?

References

Burke, A. (2012). Comparing individual preferences for four meditation techniques: Zen, Vipassana (mindfulness), qigong, and mantra. *Explore: The Journal of Science and Healing, 8*(4), 237–242. https://doi.org/10.1016/j.explore.2012.04.003.

Burke, A., Lam, C. N., Stussman, B., & Yang, H. (2017). Prevalence and patterns of use of mantra, mindfulness and spiritual meditation among adults in the United States. *BMC Complementary and Alternative Medicine, 17*(1), 316. https://doi.org/10.1186/s12906-017-1827-8.

Francis, Pope (2015). *Encyclical on climate change & inequality: On care for our common home (Introduction by Naomi Oreskes)*. Brooklyn: Melville House.

Idler, E. L. (Ed.). (2014). *Religion as a social determinant of public health*. Oxford: Oxford University Press.

Oman, D. (2010). Similarity in diversity? Four shared functions of integrative contemplative practice systems. In T. G. Plante (Ed.), *Contemplative practices in action: Spirituality, meditation, and health* (pp. 7–16). Santa Barbara: Praeger.

Oman, D. (2016). International collaboration for living with the richness of spiritual diversity [letter]. *Journal of the Indian Academy of Applied Psychology, 42*(2), 373–378.

Oman, D., & Bormann, J. E. (in press). Eknath Easwaran's mantram and passage meditation as applied Indian psychology: Psycho-spiritual and health effects. *Psychological Studies*. https://doi.org/10.1007/s12646-018-0448-8.

Pargament, K. I., Poloma, M. M., & Tarakeshwar, N. (2001). Methods of coping from the religions of the world: The bar mitzvah, karma, and spiritual healing. In C. R. Snyder (Ed.), *Coping with stress: Effective people and processes* (pp. 259–284). New York: Oxford University Press.

Sevensky, R. L. (1983). The religious foundations of health care: A conceptual approach. *Journal of Medical Ethics, 9*(3), 165–169. https://doi.org/10.1136/jme.9.3.165.

Wachholtz, A. B., & Pargament, K. I. (2008). Migraines and meditation: Does spirituality matter? *Journal of Behavioral Medicine, 31*(4), 351–366. https://doi.org/10.1007/s10865-008-9159-2.

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