Does Religion Help with Nature Exposure? Faith as a Moderator During Summer Camp

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Dedication

"*And it is He who spread the Earth and made in it firm mountains and rivers, and of all fruits, He has made in it two kinds; He makes the night cover the day; most surely there are signs in this for a people who reflect*." [Holy Qur'an, 13:3]

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Abstract

Background: The positive youth development (PYD) movement utilizes a strengths-based approach in which specific conditions can be facilitated to promote social, emotional, cognitive, behavioral, and moral/spiritual growth that contributes to further successful lifelong development amongst adolescents (Park & Peterson, 2006). A prominent PYD model proposed by Lerner and colleagues (2005) is the Five Cs model of youth development – Competence, Confidence, Connection, Character, and Caring. According to this model targeting the 5 Cs promotes increases in development assets (DA) resulting in enhanced subjective well-being (SWB) and eudemonic well-being (EWB) as well as reduced mental health symptomology (Vitterso, 2016; Gillham et al., 2011). This suggests a dynamic and reciprocal link between DA, SWB/EWB, and mental health-promoting behaviors, which has been noted for camp experiences (Garst et al., 2016). In summer camps, PYD may be enhanced by outdoor experiences and exposure to nature, both of which are linked with cognitive, behavioral, and spiritual changes including recovery from fatigue, facilitating social cohesion, opportunities for physical activity, stress reduction, improved cognition, lower risk of depression/anxiety and enhanced spiritual experiences (Clearly et al., 2017; Chang et al., 2020). Such findings suggest that individuals may derive greater well-being from experiences in nature due to mechanisms associated with spiritual fulfillment (Trigwell et al., 2014). Daily R/S experiences are strong predictors of both life satisfaction, positive affect, and meaning in life or EWB (Yoon et al., 2014). **Purpose**: This may indicate that a plausible mechanism of action by which youth may differentially benefit from camp experiences is through heightened religiosity or spirituality (R/S) including greater religious attendance

or self-reported religiosity which may lead to greater prosocial outcomes including character development. However, research on the moderating effect of R/S on outdoor adventure experiences for high school aged youth is limited. **Methods**: The current study was conducted on approximately 120 students who underwent a 2-week camping expedition with The Woods Project (TWP), most of whom were moderately religious (68.9%). R/S measured as a trait variable based on extrinsic and intrinsic religiosity were used as moderators to account for changes in pre- to post-trip outcome variables. **Results**: significant pre to post changes on 11 of the 12 outcome variables were found signifying that most students benefited from TWP. Regression analysis with age, ethnicity, and gender as covariates and extrinsic/intrinsic religiosity (separated) found mostly non-significant findings, such that religious/spiritual students did not differ significantly on the amount of change in outcome variables. Findings include one significant trend toward less growth and three non-significant trends toward greater growth associated with R/S. Importantly, the observed effects all moderators assessed, including R/S and race/ethnicity, were small and the study was underpowered to find small effects. **Conclusion**: Taken together, the study found minimal moderation of the robust pre-to post-changes observed. Further research on moderators of PYD program outcomes will need very large sample sizes to have sufficient power. Also, future studies should look at complex interactions around acculturation, identity formation, operationalization of religiosity/spirituality, and the role of secular and religious camping expeditions on positive youth development.

Keywords: religiosity, spirituality, nature exposure, summer camps, faith

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Chapter I

Introduction

Positive Youth Development (PYD)

The promotion of Positive Youth Development (PYD) is an integral facet of many programs which seek to enhance the development of children and adolescents. Supporting key developmental assets and skills required to thrive, along with environmental supports to facilitate those acquisitions, is well established in the research literature (Deane and Harre, 2013; Syvertsen et al., 2021, Ciocanel et al., 2017). The targeting of PYD assets to promote adolescent health have been found to be effective in both high-income and low-income countries with most programs including at least 2 of the 4 PYD domains; assets, agency, contribution and enabling environment (Catalano et al., 2019). Although the targeted outcomes for PYD programs may vary, depending on the specific focus of the program itself, the promotion of developmental assets and well-being amongst adolescents is consistently tied with better life satisfaction, positive social skills, better emotional regulation and physical health (Gentzler et al., 2021).

An important contributor to PYD is religion and spirituality (Benson & Roehlkepartain, 2008). Religion/spirituality (R/S) account for a substantial percentage of well-being cross-culturally (Sarriera et al., 2014; Joshanloo, 2011). Adolescents who are higher in R/S tend to have higher academic achievement, better prosocial behaviors, lower delinquency and higher well-being, particularly amongst Hispanic and African-American youth (Bowers et al. 2020). R/S is also linked with reduction of risky behaviors such as early sexual experiences, alcohol/drug usage and violence amongst adolescents, along with enhanced environmental supports including better parental support, increased

school bonding and adolescents who are religiously committed being 3x more likely to participate in community service (King & Furrow, 2008, Hardy et al., 2019). These considerations are particularly salient for students of color and minority populations who self-report higher trends of R/S (Mattis et al., 2016; Salas-Wright et al., 2012).

Summer camps provide well-established means of promoting PYD (Garst et al., 2011) especially if they have an outdoor adventure component (Deane & Harre, 2014, Gutman & Schoon, 2015). In the context of nature intervention programs such as camping experiences geared towards adolescent PYD; minority groups are found to be underrepresented by about 50% (ACA, 2017). Furthermore, a review of studies (n = 174) on the relationship between exposure to nature and mental health found that 62% of studies did not ever report race or ethnicity (Gallegos-Riofrio et al., 2022). Owing to the close connection between race/ethnicity and religion/spirituality (R/S), particularly for Black, Indigenous and People of Color (BIPOC) (Gungor et al., 2013, Nasim et al., 2011), it is important to study diverse samples and potential moderating effects of camp outcomes.

A critical variable that may help account for differences in pre-post camp changes may be R/S, which is amongst the strongest protective factors for youth (King & Furrow, 2008). Previous research has substantiated that the relationship between camping experiences and well-being is enhanced by spirituality (Trigwell et al., 2014). However, the author did not find any other empirical investigations of the potential moderating effect of R/S on summer camp outcomes. This study will replicate and extend previous investigations into the moderating effects of R/S on outcomes from a two-week-long

wilderness trip designed to promote PYD. To provide a theoretical framework for this research, we begin with a discussion of positive youth development and well-being.

PYD & Well-Being

The Positive Youth Development (PYD) model posits that protective factors in a youth's environment can further strengthen the development of a youth if strengths are aligned with familial and social resources. This ecological focus highlights the various systems which make-up the daily interactions of an adolescent's life including neighborhood, school, family and state or national level policy (Shek et al., 2019). The PYD model also includes developmental plasticity, internal development assets (competency or readiness to change) and external developmental assets such as community or peer influence (Shek et al., 2019). Pertaining to environments most conducive to youth development, PYD-based programs seek to integrate features related to positive and meaningful youth-adult relations, promotion of life-skill building activities and opportunities for youth to participate as leaders in school and community (Garst et al., 2016). Specific assets may be more salient for students of color including critical thinking, facilitating supportive relationships and spirituality (Bowers et al., 2020).

The development of specific characteristics that promote PYD may also lead to enhanced well-being (Park, 2004). Hedonic and Eudaimonic well-being often converge as simultaneous domains that lead to positive human flourishment encompassing both life satisfaction, positive affect and Eudaimonic facets such as meaning, purpose and positive social relationships (Rizvi & Pasha-Zaidi, 2021). Nevertheless, hedonic-Eudaimonic orientations are distinct constructs with unique effects on well-being.; Programs designed

to increase hedonic well-being orientations may develop activities related to pleasure, positive affect, and enjoyment. In contrast, programs designed to promote Eudaimonic well-being seek to increase the youth's sense of meaningfulness, authenticity, actualization, and becoming one's best self (Huta & Waterman, 2014), possibly at the expense of pleasure.

Amongst youth, hedonic orientations such as striving for fun and pleasure may lead to social, emotional, and academic problems as substantial research has found that poor delayed gratification has negative implications for obesity, early sexual experiences, tobacco usage, alcohol usage, drug usage, and gambling (Assarri, 2020). Contrastingly, Gentzler et al., (2021) found that adolescents with primary Eudaimonic orientations had higher life satisfaction, less depressive symptoms, higher self-regulation, and positive social engagement including higher empathy and friendship closeness in contrast to adolescents with Hedonic motives who had lower levels of life satisfaction, lower self-control, and lower empathy (only when they also had lower Eudaimonic orientations). Chan et al., (2015) assessing 584 adolescents (mean age = 17.9) across 4 years found that religiosity (identity & participation) was consistently related to greater Eudaimonic profiles due to greater sense of meaning/purpose. Thus, promoting Eudaimonic Well-Being (EWB) may be a critical consideration for improving PYD.

Religiosity and Spirituality (R/S)

Although EWB is a unique construct, it is very closely aligned with religiosity and spirituality (R/S) in youth, which is a prevalent consideration in youth around the world. For example, researchers in Sierra Leone and South Africa found that measuring Eudaimonic well-being amongst adolescent villagers necessitated accounting for

culturally salient variables such as geographical violence, safety from adult harm, resilience/problem-solving and religiosity (64% of the sample reported being Muslim, 36% reported Christian; Symonds et al., 2021). Similarly, a study of Iranian Muslim adolescents found a strong positive association between R/S and EWB (Joshanloo, 2011).

Theoretically, religiosity and spirituality are district constructs, but in practice, they seem to converge on similar outcomes. For example, a sampling fit of the Personal Well-Being Index (PWI) with a sample of 1,053 Chilean and 1,047 Brazilian adolescents found that religiosity and spirituality (as separate constructs) both contributed to PWI (Sarriera et al., 2014). Benson et al., (2012) found across 11 countries (n = 6725) that 70-90% of each populace endorsed spiritual values such as searching for a sense of sacred, desire to serve others/community, and finding meaning in life. In the U.S., the majority of adolescents self-report as being both religious and spiritual, with only a reported 10% of youth polled (n = 17,705) describing themselves as 'religiously disengaged'. Importantly these trends are much higher for BIPOC populations including Latin, African-American, Muslim & Indigenous youth (Salas-Wright et al., 2012).

The interplay between religiosity and spirituality is addressed in multiple theories of youth development. For example, according to Kohlberg's moral development theory; adolescents shift from focusing solely on their own needs as children to assessing and recognizing the needs of others and the dominant social ideals of the numerous environments they are situated in as developing adults (1984). Hence, developmental psychology has long recognized that religious/spiritual identification is an important part of adolescent development due to the transformation of the 'self' and higher levels of awareness (Sweatman & Heintzman, 2004). This may also reflect a shift from

recognizing concrete religious practices with hedonic or extrinsic motivations to abstract spiritual beliefs with intrinsic motivations, including increasing EWB.

Intrinsic and extrinsic religiosity are the most heavily researched constructs in the science of religiosity/spirituality and stem from the work of Gordon Allport (1967) who conceptualized faith as a dichotomous (but often convergent) construct. For extrinsic religiosity; faith members may use religious teachings for instrumental purposes such as personal comfort, social relationships, status, and other extrinsic markers, often prioritizing conventions, rules, and ethics. On the other hand, intrinsic religiosity may instantiate the core teachings of religious beliefs within adherents to endow meaning-making in all domains of life with a fuller assimilation of ideals that promote deep personal commitment, compassion, and love for the entire human family (Oman & Nuru-Jeter, 2018). Allport and Ross (1967) stated "the extrinsically motivated person *uses* his religion, whereas the intrinsically motivated *lives* his religion." (p. 434).

Less pronounced differences have been noted in measuring intrinsic/extrinsic orientations in adolescents, as compared to adult populations, possibly suggesting that adolescents undergo a developmental process benefitting from both social dimensions (extrinsic) and personal dimensions (intrinsic) (Milevsky & Levitt, 2004). Thus, for adolescents religion can be viewed as an mix of external and internal assets that support, empower, and facilitate constructive development through building compassion, integrity, honesty, responsibility, social cohesiveness, self-control, and commitment to morals/ethics (Cheung & Yeung, 2011). There may be a developmentally expected shift from extrinsic/hedonic to intrinsic/Eudaimonic during adolescence with mixed states during the transition.

Religious values, particularly related to intrinsic religiosity, may lead to a heightened appreciation for nature and behavioral changes in caring for nature (Carlisle & Clark, 2017). Although spirituality need not be affiliated with any religious context; most research on adolescents has found that concrete religious markers such as rate of participation at a place of worship or self-reported importance of beliefs are much stronger indicators of persistent behavioral and psychological changes, than personal indexes of spirituality (Yonker et al., 2012). This may be related to the relative stability of concrete religious practices compared to the more abstract and shifting nature of spirituality. Furthermore, this may be due to a minimal separation between what constitutes extrinsic and intrinsic orientations to religion amongst adolescents. Thus, the combined effect of R/S may be the best predictor of the effect of these constructs on life experiences.

R/S and Connection with Nature

Research has linked exposure to nature with significant health benefits for adolescents including stress reduction, increased self-esteem/self-efficacy, increased resilience, better physical activity, better academic/social performance, and enhanced behavioral skills (Mygind et al., 2019). For example, Determan et al., (2019) found test performance increases and higher levels of academic involvement and enjoyment amongst 6th to 12th grade students who were situated in classrooms with a biophilic design as opposed to those in standard classroom settings. The Biophilia Hypothesis (Wilson, 1984) proposes that human beings are driven towards connection with nature and these benefits are hardwired with base evolutionary capacities due to our reliance on nature for survival and reproduction through the course of human history. Building on

this idea, “green care” involves the routine involvement of nature exposure to improve mental health illness and well-being (Clearly et al., 2017).

The American Camp Association (ACA) reports that there are more than 12,000 camps in the U.S., with more than 11 million children and adults attending yearly (ACA, 2013). The decades between the 1890s and the 1920s saw the largest expansion of organizations that support summer camps with the establishment of the Boy Scouts and Camp Fire Girls. These and similar organizations connect youth with essential nature experiences once common to the ‘American mythos’ and promote positive youth development through strenuous activities such as long hikes, competitive sports, rough-and-tumble games, and calisthenics (Van Slyck, 2006).

Camping experiences allow for direct interaction with nature by allowing campers to temporarily live in a dynamic, natural ecosystem for enjoyment, and recreation, personal and social development, or conservation purposes. Reported changes following camping have been found in physical, social, emotional, and spiritual indexes (Hassell et al., 2015). These types of experiences depend upon accessibility to green spaces, exposure to nature, and a degree of engagement with the natural environment with interventions with higher levels of engagement having stronger associations with mental health benefits amongst adolescents (Mygind et al., 2019).

In addition to promoting the connection with nature, many camps and youth organizations that promote camping teach youth to endorse specific values with religious reverence and spirituality. Furthermore, many camping experiences integrate Native American aesthetics and rituals such as folklore, use of storytelling, and symbolic emblems such as totems and other iconography. Although many camps engage in

appropriation and distortion of Native American culture and religion, the Indigenous worldviews are rooted in authentic R/S and provides a unique connection between R/S and nature. For example, Menominee Native Americans have increased benefits from nature as opposed to European Americans (Van Slyck, 2006; Chang et al., 2020). However, a mismatch of Indigenous persons and camp instructors may create problems in regards to spirituality. Hollis et al., (2011) conducted focus-group interviews on six Māori adolescents who underwent an outdoor adventure program curriculum finding that there were disagreements related to ethnic identity, affiliations with God, and destruction of nature. Therefore, summer camp programmers may want to adjust contextual factors so that Indigenous adolescents gain further benefit. Moreover, Indigenous culture and beliefs about R/S and nature should be taught in a manner that is factually accurate and respectful, such as acknowledging place and history. This may add to the development of well-being through reverence and empathy.

Across demographic groups, subjective and Eudaimonic well-being have shown improvements when students are exposed to nature, even when engaging in simple activities such as going to a park close to one's home (Passmore & Howell, 2014). Although research is limited, spirituality is a moderator of nature's connection with enhanced well-being (Cleary et al., 2017). There may also be main effects with both spirituality and exposure to nature evoking a sense of purpose in life, a sense of meaningfulness, and a broader sense of self (Clearly et al., 2017; Kamitsis & Francis, 2013). More research on racially/ethnically diverse samples is needed to understand the effects of R/S on outcomes in PYD programs with an outdoor adventure component.

Summary & Purpose of the Study

The purpose of the current study was to examine the relationships between adolescent religiosity/spirituality (R/S) and positive youth indexes including PYD character traits. More specifically, this study investigated whether religiosity (separated as extrinsic and intrinsic religiosity) would significantly moderate the relationship between youth exposure to a two-week developmental wilderness camping experience (The Woods Project) on the outcomes of PYD traits of self-control, adaptability, independence, social intelligence, critical thinking, environmental appreciation, and zest/curiosity. Additional developmental assets for positive identity, positive values and planning/decision-making were also analyzed.

Data for this study is from 122 predominately Hispanic and Black youth from a large city in the Southern United States who completed The Woods Project (https://thewoodsproject.org) in 2022. Self-report data was collected immediately before and after the two week-long program, which included a six-day backpacking trip. Previous research collected pre and post TWP trips has found statistically significant improvements in development assets such as grit/perseverance, social skills, leadership/teamwork, and valuing the TWP experience from pre to post trip surveys for two separate cohorts across two summer trips (Smith and Kim, 2022). Furthermore, data from the Pemberton Happiness Scale (Hervas & Vazquez, 2013) found that 78.3% of the summer 2019 cohort showed positive outcomes on emotional functioning. Data collected from TWP alumni (n = 44) has found that 97.7% are gainfully employed or furthering their education, which is starkly contrasted with state-wide data indicating that only 50% of African-American or Latino students in Texas enroll in post-secondary education.

This study examined if religiosity as measured by the Duke Religious Index (DUREL; Koenig et al., 1997) moderated TWP change scores for the 2022 student cohort. This study will provide novel, important information as previous studies have given scant attention to R/S variables in the youth developmental literature (Parker et al., 2021). This is a troubling gap considering that minority populations including adolescents routinely self-report higher levels of R/S than white peers and are found to be underrepresented by about 50% in the context of nature intervention programs (Smith et al., 2021). Hence, a critical variable that may help to further explain PYD assets, in relation to pre-post changes after exposure to an intervention, may be R/S which is amongst the strongest protective factors for youth (King & Furrow, 2008). Previous research has substantiated that one mechanism by which camping experiences relate to well-being is through enhanced spirituality (Trigwell et al., 2014), and this study will examine if R/S moderates the benefits of participation in a wilderness trip designed to promote positive youth development.

Chapter II

Literature Review

Positive Youth Development (PYD*)*

A seminal part of various institutions, from the family home to communal agencies such as the school, is the promotion of skills and abilities that adolescents can use to improve their lives and the lives of those around them. The Positive Youth Development (PYD) model offers a robust way to target effective factors, internally via the promotion of positive characteristics and externally via recognizing prosocial developments in a youth's environment (Syversten et al., 2019). Religion/Spirituality (R/S) can lead to the promotion of positive characteristics such as self-control, academic engagement, and altruism, while also leading to positive environmental changes such as positive peer influence, social support, and enhanced social capital (King & Furrow, 2008). Understanding how R/S affects PYD programs has been strongly recommended but understudied, possibly due to historical positivist and anti-religious sentiments within the social sciences (Abo-Zena & Rena, 2020). The recognition and tailored fitting of R/S constructs within strong PYD interventions, such as camping programs with an outdoor adventure component, may lead to a more holistic understanding of what works for youth.

The PYD model emphasizes protective factors in a youth's environment that can further strengthen the development of youth if strengths are aligned with familial and social resources. This ecological focus highlights the various systems that make up the daily micro and macro interactions of any one adolescent including neighborhood, school, family, and state or national level policy (Shek et al., 2019). The PYD model also

includes developmental plasticity, internal development assets (competency or readiness to change), and external developmental assets such as community or peer influence (Shek et al., 2019). The ability of young people to develop key assets or domains of growth is significantly related to numerous positive health domains and better academic performance including better grade point averages, with concurrence across racial/ethnic groups and socioeconomic status with validation in Europe, Africa, Asia, and Latin America (Atkiss et al., 2011; Dimitrova et al., 2021).

Lerner's 5C model is a PYD model that emphasizes competence, confidence, connection, character, and caring/compassion (Lerner et al., 2005). Competence related to cognitive, social, academic, and vocational attributes may include decision-making, interpersonal skills, school grades, and work habits. Confidence refers to a youth's worldview, capacities, and self-esteem. Connection refers to positive relationships in a youth's environment and the process by which a youth interacts and exchanges information with these environments. Character refers to moral and internal values and compassion refers to the ability to emphasize and help others.

Role of Religion/Spirituality (R/S) Increasing PYD

In addition to the 5 Cs described above, spirituality is also seen as an integral facet of PYD as emphasized by Lerner et al., (2006) as it contributes significantly to moral/existential aspects of youth character development and its lack of inclusion in PYD models is due to lack of rigorous studies, then actual theoretical underpinnings (Shek et al., 2019). Researchers have also supplemented this model with a 6C model to highlight communal and non-self attributes, which may be especially relevant to collectivist

societies, such as giving back to one's community through self-sacrifice (Dimitrova et al., 2021).

The concept of a strength-based, spiritual, and community-engaged approach to PYD is especially useful for minority and immigrant youth who account for more than 50% of school-aged children (Batalova & Feldbum, 2020). These groups are disproportionately impacted by poverty, discrimination, and health and educational gaps (Smith et al., 2017). Studies find that along with individualistic values, minority, and immigrant youth endorse cultural ideals and collectivistic orientations to the self, such as valuing family, respect for adults, and community belonging. These social influences highlight a need to broaden existing PYD models to allow for cultural sensitivity. For instance, data collected from 73 afterschool programs in urban, suburban, and rural parts of the country (K – 5th grade) found that cultural values related to respect were more salient for African-American youth as compared to White youth (Smith et al., 2017). These results were interpreted to indicate that programs that promote a supportive and reciprocal space for adult-youth interactions lead to more engagement and likability (Smith et al., 2017).

Consistent with the recommendations above, Bowers et al., (2020) notes that specific assets may be more beneficial for BIPOC students including critical reflection or being able to examine the numerous influences that may be inhibiting or facilitating one's ability to achieve, such as mentoring relationships and spirituality. For example, Dimitrova et al., (2021) found that a 7C model was more appropriate for adolescents living in India, Indonesia, and Pakistan (n = 852) adding a creativity component as it strengthens development through exploration, imagination, identity formation and

fostering resilience. Similarly, amongst 2,474 adolescents (M age = 14.76) in Hong Kong, researchers found that moral character and responsible action were important mediators of well-being and fit better within a collectivistic framework which emphasizes respecting in-group norms and interpersonal harmony (rather than self-interest) (Zhou et al., 2021). Therefore, it is important to recognize the fluidity of the 5C (or 6C, 7C, etc.) model and work towards integrating culturally tailored variables for more appropriate fit amongst diverse, international youth.

Nature Exposure and PYD

Summer camps have been identified as an important place to promote PYD according to the 5 to 7 C models. Garst et al., (2016) sought to understand which dimensions of the PYD model were most salient for camp directors (n = 339, 7.84 years of experience). A survey sent out assessing 'antecedents for change' or those factors which would most robustly lead to positive change amongst campers; results found that skill-building (78%), supportive relationships (70%), emotional/physical safety (70%), opportunities to belong (65%) and developing close relationships with peers (63%) had the highest factor loadings. This suggests that personnel implementing the intervention recognize environmental antecedents (such as adequate training of faculty, structure of day-to-day activities, etc.) which may hinder or increase PYD.

Consistent with Garst's findings, the EPYD scale (Elements of Positive Youth Development) had high factor convergence with AOC scale (Antecedents of Change) indicating that camping sites have logistic and practical details worked out *prior* to youth involvement including staff attention/interaction, cooperation, sense of community, opportunities to work in small groups and leadership opportunities. Pertaining to youth

developmental environments, programs may include positive and meaningful youth-adult relations, promotion of life-skill building activities and opportunities for youth to participate as leaders in school and community (Garst et al., 2016).

These findings highlight the dynamic and fluid nature of the PYD model, as it can synthesize culturally tailored constructs that may be more appropriate for adolescent development depending on geographical or social context. Theoretically, the PYD model emerged from an ecological foundation, further implicating researchers and practitioners to measure concrete assets that may help adolescents flourish individually and reciprocally with their environments. Demonstrable research has linked religion and spirituality as pervasive and persistent protective factors across the developmental span helping adolescents flourish, thrive and become conducive members to society (King & Furrow, 2008). Hence, any index of youth development is incomplete without accounting for these variables as the majority of adolescents in the U.S. (and internationally) self-report as religious and/or spiritual (Benson et al., 2012).

Developmental Assets

The Developmental Assets (DA) model proposes that fostering unique strengths in youth leads directly to prosocial behaviors and holistic positive development (Roehlkepartain & Blyth, 2019). These can be external assets such as community, usage of time in appropriate ways, context, expectations, empowerment, or internal assets such as knowledge, skills, and values such as what matters most to youth (Dimitrova et al., 2021). These assets often work in tandem with one another for positive trajectories in numerous domains, with most studies in the PYD area, focusing on positive associations in school settings (Scales et al., 2006). External assets in this context can be but are not

limited to, caring and supportive relationships with adults, positive peer influence, social/cultural norms around education, increasing parental involvement, fairness of school discipline policies, and caring school climate (Syvertsen et al., 2019). Internal assets can be positive study habits, student motivation to learn, school engagement, social competencies, and expectations of success (Scales et al., 2006; Syvertesen et al., 2019).

The association of these assets in both helping to increase prosocial and constructive behaviors including academic engagement and decreasing or minimizing riskier behaviors are well-documented. Increasing DA has a cumulative benefit, such that as youth gain more assets, the more they are found to report better school performance and engagement (Scales et al., 2006). For example, in tracking the GPA performance of 370 10^{th} to 12^{th} grade students across 4 years; a .31 correlation was found between the number of assets and GPA one year later and .24 correlation four years later (Scales et al., 2006). A study utilizing 99,462 adolescents from Grades 6 to 12 in 213 U.S. cities found that amongst the original 40 assets proposed by Benson and colleagues (1998); the more assets adolescents had, the lower the risk was for alcohol usage, depression/suicide, and violence with 'thriving' being a salient variable consistent across Native, African-American, Asian, Hispanic, White and Multiracial groups (Taylor et al., 2004). Thriving consisted of school success, leadership, valuing diversity, physical health, helping others, delay of gratification, and overcoming adversity.

In the context of nature intervention programs geared towards adolescent PYD; minority groups are found to be underrepresented by about 50% (Smith et al., 2021). This may undermine the focus of researchers to address critical components which help certain subgroups thrive such as family structure, family cohesion, parental attachment, and

quality of support in schools for youth growing up around community violence (Jain et al., 2012). Research more broadly in the PYD field has rarely addressed Developmental Assets for high-risk youth and if so, has failed to account for ecological variables such as neighborhood efficacy and communal processes (Jain et al., 2012). Amongst these variables are religion and spirituality as these associations are most strongly linked with minority populations who report higher levels of R/S and may be situated in social milieus in which religiosity is invariably enmeshed with other cultural practices (Smokowski et al., 2014). Hence, an emphasis has been placed on stronger collaborative efforts between faith communities and academic institutions to holistically impact the socioemotional, academic and spiritual lives of students (Holland, 2016).

Considerations for BIPOC adolescents

As Syversten et al., (2019) note "the experience of White and African American youth in the United States in dealing with all sorts of institutions, from schools to religious congregations, to law enforcement, can be extremely different that they seem to live in two different worlds, even if they are in the same town and even the same neighborhood" (p. 14). The DA model has been shown to have a heterogenous fit across diverse groups of students such that the more assets one has, the 'better off' they tend to be academically, behaviorally, emotionally, etc. Owing to applied developmental systems theory, it is vital to assess for personal and environmental characteristics unique to age, sexual orientation, gender, race/ethnicity, socioeconomic status, and parental educational level, amongst others (Syversten et al., 2019). These considerations should also be extended to religion and spirituality (R/S). High affiliation with ethnic identity and religious/spiritual orientation has been found for African-American, Hispanic, and

Indigenous youth as dual protective factors leading to positive psychological functioning and well-being. R/S are often interlinked leading an individual to better relate to their people group including traditions, customs, values, and behaviors (Smokowski et al., 2014). As it relates to adolescents; King and Furrow (2008) strongly substantiate that religiosity is a crucial and vital part of adolescent development such that it protects against delinquent behavior including reduced transmission of sexual diseases, alcohol/drug usage, and violence, while simultaneously increasing adaptive coping mechanisms including better personal restraint, parental support, school bonding, social competence and sense of purpose/meaning with adolescents who are religiously committed being 3x more likely to participate in community service.

A sample of 913 adolescents (M = 15.89 years, 39% African-American, 39% Latino) related religious practices to higher social capital which helps supply a broader context to increase moral orientation; “these results suggest that the religious youths in this study were more actively engaged in social relations with nonparental adults, which in turn offered the youths a stronger base for intergenerational support outside of the family. The presence of nonfamilial support may in part reflect the social or communitarian ethic of many religious communities” (King & Furrow, 2008, p. 44). Amongst 20,000 youth from Grades 6-12, it was found that religious importance (intrinsic) and religious participation (extrinsic) were significantly mediated by developmental assets suggesting that they play a crucial role in promoting positive behaviors and reducing risky behaviors, these trends were found to be more significant for senior high school students who may benefit even further from religious commitment

due to a more varied social environment and options for individual choices (Wagener et al., 2003).

Well-Being Amongst Adolescents

Well-being is a multi-dimensional construct that is positively correlated with DA and likely has a bidirectional influence on changes in DA. The two aspects or types of well-being that have gotten the most attention in the psychological literature are subjective and Eudaimonic well-being. Subjective well-being (SWB) is associated with a hedonic conceptualization of well-being that minimizes pain, maximizes pleasure, and promotes life satisfaction. SWB can be summarized by the concept of "feeling well." Eudaimonic well-being (EWB) is associated with living according to or striving toward goals and values associated with one's ideal self. EWB can be summarized as "functioning well." Whereas hedonically oriented individuals seek regular pleasure and enjoyment, eudaimonically-oriented individuals seek meaningful and authentic experiences to become their best selves (Huta & Waterman, 2014; Peterson et al., 2005).

In contrast to the strong positive correlation typically observed between hedonic and eudemonic wellbeing, hedonic and eudaimonia as motives for activities may share considerably less overlap (Huta, 2013; Huta & Waterman, 2014). These orientations may be aligned with previous theoretical models, such as Schwartz Theory of Basic Values (1992), in which every individual has ideals that are important and specific to them. A person's values or ideals are dependent on affect, goals, moral standards, importance, and relation to behaviors (Schwartz, 2012). These behaviors *can* have converging importance for multiple values such as attending church which may express tradition or faith, at the expense of hedonism, but also endorse positive feelings of joy, awe, and connection

(Diener & Clifton, 2002). Importantly, Schwartz includes universalism or spirituality as a transcendent value that focuses on benevolence, appreciation, tolerance, and protection of people and nature (Schwartz, 2012).

Studies have sought to better understand which facilitators may drive behaviors for adolescents such as competition in sports which may require sacrifice and patience (i.e., aligning with a Eudemonic orientation) whereas other aspirations may be related to pleasure, monetary gain, social prestige, or fame such as early sexual experiences or drug/alcohol usage (hedonic orientations). Hedonic orientations are associated with extrinsic motivators whereas eudemonic aspirations such as personal growth, self-mastery, building meaningful relationships, and self-actualization are associated with intrinsic motivators (Sigitas et al., 2017). In a study conducted on 345 students aged 16-18 (49% engaged in sports), the authors reported that student-athletes more strongly endorsed a range of eudemonic and hedonic values indicating a higher level of awareness or orientation in life than student non-athletes (Sigitas et al., 2017).

Nature and Well-Being

Similar to sports, the connection with nature may have intrinsic and extrinsic components that are related to subjective well-being. Higher levels of nature connection are associated with both higher subjective and Eudaimonic well-being (Clearly et al., 2017). Researchers have found that individuals with stronger eudemonic motives tend to more strongly commit themselves to altruistic causes such as nature conservation, as they conceptualize nature as a meaningful part of the world (van den Born et al., 2018). In contrast, individuals with hedonic motivations tend to have a much narrower focus of

concern with concrete goals related to the self, such as enhancing attraction/prestige and accumulating money (Pearce et al., 2021).

In a study on 334 Canadian university students (M age = 19.14), it was found that stronger Eudaimonic orientations to one's life and daily activities better predict Eudaimonic *and* Hedonic well-being as compared to Hedonic orientations which may lead to immediate sensations of enjoyment or pleasure but little bearing on meaning, authenticity or pursuit of excellence (Mise & Busseri, 2020). This convergence is shared by many complementary studies which highlight that the highest levels of well-being in individuals are found amongst those with higher levels of both types of well-being (Full Life hypothesis).

Amongst youth, it has been found that hedonic orientation such as striving for fun or maximizing pleasure at the behest of longer-term benefits or delay of gratification is associated with social, emotional, and academic problems (Gentzler et al., 2021). Eudaimonic orientations may be less pronounced amongst elementary-aged children but have higher positive associations with middle school and high school children as values related to future orientation and perseverance are linked with positive outcomes. For example, Gentzler et al., (2021) found that adolescents with Eudaimonic motives (HEMA; Huta & Ryan, 2010) had higher life satisfaction, fewer depressive symptoms, better self-regulation, and positive social engagement including greater empathy and friendship closeness in contrast to adolescents with Hedonic motives who had lower levels of life satisfaction, lower self-control, and less empathy (only when they also had lower Eudaimonic orientations). Similar studies on adults find that self-indulgent behaviors such as partying or alcohol/drug usage led to decreased well-being, but

contrastingly other hedonic behaviors such as leisure time related to sports, art, and health-related activities lead to increased well-being. Adolescents may have different connotations with Hedonic and Eudaimonic operationalizations as compared to adults due to research indicating developmental periods with limited self-control (Gentzler et al., 2020).

This builds along previous line of research in that subjective well-being may be more closely related to acute or immediate forms of well-being such as daily positive affect, whereas Eudaimonic well-being is more strongly related to long-term mental and physical health (Byrden et al., 2015). Importantly, this line of inquiry has not been produced for engagement on camping trips (i.e., why do youth choose to go on physically and emotionally taxing wildlife expeditions?). Subsequently, research can also assess which factors may lead to more substantive experiences of wellness, in which adolescents gain momentary pleasure, along with wider eudemonic indexes such as relationship thriving, communal engagement, and social action.

R/S & Well-Being amongst Adolescents

In assessing how hedonic and eudemonic orientations may tie into differing worldviews; amongst 749 undergraduate students (M age = 19.41), spiritual beliefs such as the existence of God or an afterlife or the existence of an immaterial soul were only significantly related to an eudemonic orientation suggesting these beliefs help individuals build a values framework; further questions found that eudemonic orientations were also related to ethical decisions such as the consistency of moral behaviors (whereas hedonic orientations were related to changing moral or ethical decision-making to fit the specific situation) (Braaten & Huta, 2018).

Religion & Eudemonic Orientations. Conceptually it may be argued that Aristotle's definition of eudaimonia as an 'activity of the soul in accordance with perfect virtue' aligns with the innate drive for religious and spiritual activities, worldviews, and ideologies found across the myriad of human cultures. Hallam et al., (2013) posit that the development of a personal ontology is the critical maxim of developing one's understanding of virtue (and consequently eudemonic well-being) as it is centered around asking oneself 'who do I want to be?' and 'how do I want to act?' Hence, a human being striving to better relate to their sense of self would naturally seek to understand these existential concerns by using the pedagogical tools available in our sociocultural milieus; these most frequently are religious or spiritual ideas, rituals, and understandings.

Adolescents frequently endorse values related to Eudaimonic facets including self-acceptance (47%), positive relations with others (42%), personal growth (40%), environmental mastery (39%), purpose in life (26%), and autonomy (23%) (Ryff, 1989; Byrden et al., 2015). These values may affect coping. For example, amongst 180 Australian female adolescents (M = 13.98), primary and secondary coping methods that effortfully sought to change stressful circumstances and associated cognitions/feelings were associated with better eudemonic well-being than disengaged coping which distract or orient one away from dealing with a stressful situation. For example, adolescents may seek to engage in acts that momentarily increase hedonic well-being related to pleasure or positive affect when confronted with negative life events (i.e., drug usage or sexual behaviors), which can detract from Eudaimonic facets that may lead to non-effective or maladaptive coping procedures ultimately reducing psychological well-being in the long-term (Byrden et al., 2015).

Schnitker et al., (2017) propose one mechanism of action by which heightened religiosity may positively impact Eudaimonic well-being in a model empirically verified on 406 adolescents (M = 15.99, 58% female) in which increased religiousness was related to patience which was characterized by cognitive reappraisal and emotional regulation strategies leading to demonstrable behavioral outcomes including lower cigarette smoking/caffeine consumption, better spending habits/study habits and self-care indexes. Findings have long established that religious youth who report lower levels of materialism tend to be more religiously committed (Lee et al., 1997). Chan et al., (2015) assessing 584 adolescents (M = 17.9) across 4 years found that religiosity (identity & participation) was consistently related to greater Eudaimonic profiles due to greater sense of meaning/purpose and fewer depressive symptoms.

Religious Development in Adolescents. Fowler's (1981) Faith Development Theory incorporates the development of a religious and/or spiritual identity as a human propensity to relate to one's self and others with a transcendent marker of significance that shapes one's deepest values, beliefs and meanings; this can reflect a religious identity or some other ideology such as politicism, environmentalism or nationalism. Transcendence refers to a shift in cognitive, emotional, and behavioral patterns aligned with a meaningful connection with something beyond oneself, which shapes identity and provides active response mechanisms (King & Boyatzis, 2015). United Nations Convention on the Rights of the Child includes physical, social, emotional, and spiritual dimensions of health with the latter recognizing that the holistic development of a growing person is incomplete without basic spiritual needs such as finding one's sense of

purpose, belonging, community and recognizing that the 'self' is part of an interconnected whole (UN, 1989).

From a relational developmental systems perspective, religious and spiritual development occur through ongoing transactions between individuals and their multiple sociocultural contexts (Lerner, Dowling, & Anderson, 2003). Religious development can be described as systematic changes in how one understands and participates in the doctrines, practices, and rituals of religious institutions. Thus, from a relational developmental systems approach, as a young person interacts with friends, family, faith community, and so forth, he or she will change in beliefs, commitments, and engagement in religion.

Spiritual development involves the growing capacity to transcend the self, requiring the increase of cognitive and emotional capacities to be aware of and grasp that which is beyond the self, while reciprocally growing in self-knowledge and understanding. This process requires the development of identity, purpose, values, and meaning-systems, and eventually results in fidelity to an ideology. Further reciprocity is evident as the young person then responds to transcendence out of a sense of fidelity with actions that are consistent with their beliefs, values, and self-concept. Such actions are characterized by contribution, compassion, and leadership and require prosocial, moral, and civic development (Lerner et al., 2003). Spirituality is more than a feeling of transcendence, but a growing sense of identity or awareness that motivates or propels young people to care for themselves and to contribute to the greater good (King et al., 2013).

Bensen and Roehlkpartain (2008) substantiate that the promotion of spiritual development via policies, programs, and practices has the potential to make tremendous impacts on positive youth development citing examples from the American Camp Association in which significant increases in spirituality have been noted in studies amongst 200+ camps. Recurrent research has found that most adolescents endorse religious/spiritual ideals with 77% of 112,232 freshmen across 236 colleges expressing a belief in the sacred (Astin et al., 2005). Despite this overwhelming importance, R/S considerations amongst adolescents have been largely ignored in the social sciences which is paradoxical as long-standing theories such as Erikson's theory of psychosocial development highlight this period with adolescents attempting to understand abstract questions such as their purpose, meaning of life, and interrelated goals (Shek, 2012).

Adolescence: Identity Development

Perhaps the main developmental task outlined in research that envelops adolescent development is identity formation or striving towards a sense of cohesion with values, beliefs, and roles that lead to greater recognition of purpose and belonging. These developmental factors often lead to religious and/or spiritual endeavors that concretize abstract notions related to existential meaning in formal and structured ways (King & Boyatzis, 2015). After analyzing 119 studies related to religious development amongst adolescents, DeHaan et al., (2011) found that attendance at a place of worship, behaviors such as how often one prays, importance of beliefs, and religious searching were the four most common operationalizations of measuring faith. Further exploratory studies on Christian, Jewish, and Muslim adolescents found that 'religious anchors' or relational pathways that help youth connect stronger with their faith were related to traditions,

rituals, laws, faith community, parents, sacred texts, and religious leaders (Layton et al., 2011). Importantly the interplay between culture, family cohesion, and religious identity have also been found highlighting the need to assess adolescent religious development in a myriad of ways to account for converging domains related to identity formation (King & Boyatzis, 2015).

Related to spiritual development in adolescents, researchers have found salient markers related to prosocial behaviors, quest for meaning/purpose, mindfulness, and value-action concordance with contrasting views as to whether spirituality exists as a separate or convergent dimension with religion. A meta-analysis of 75 studies related to R/S associations (n = 66,273, 56% adolescents) found the strongest correlation with reduction of risk behaviors (-.17) along with improvement of well-being (.16), with personality traits of Conscientiousness (.19), and Agreeableness (.18) This partially explains the link such that more conscientious and more agreeable youth tend to benefit most from religiosity. For instance, religious attendance and salience (importance of religious belief) were the most important indicators of beneficial outcomes, in contrast to personal indexes of spirituality (Yonker et al., 2012).

Most prominent in modern theory is the idea that spirituality *can* be encompassed within a religious organization (related to intrinsic religiosity), but it need not be for certain adolescents who may seek existential fulfillment in a transcultural manner (King & Boyatzis, 2015). Further research demonstrates that for youth who are both religious and spiritual, deep connection to a Transcendence such as God, commitment to a core set of beliefs/values, and benefitting others through charity and good actions are the fundamental tenets for prosocial identity development. Although for secular individuals;

these may similarly be expressed through the arts, nature or commitment to a personal cause.

Through an identity formation lens in which adolescents grow in affective, cognitive, behavioral, and existential capacities, religious/spiritual development is a plausible pathway that aids in ideological exploration (cognitive), provides a structure of beliefs (cognitive-behavioral), promotes a sense of awe and peace (affective) and relates to abstract questions of purpose and meaning (existential). For most adolescents, spirituality continues to be an important part of their development with studies finding that commitment to personal beliefs increases as they move into college and young adulthood (Good & Willoughby, 2008).

Religiosity in Adolescents

Numerous studies find high importance of religion to adolescents. For instance, Benson et al., (2012) utilizing an international sample of adolescents (n = 6725) across 11 countries found that 70-90% endorsed high levels of spirituality related to existential meaning in life, searching for a sense of sacred and desire to serve others/community. Across the 11 countries, adolescents self-reported as being religious (35%) or spiritual (38%) was not meaningfully different. In the U.S., 66% of adolescents reported feeling close to God or a higher power, 66% reported praying/meditating, 89% reported protecting Earth, 90% reported finding meaning/purpose and 4% reported no spiritual dimension to life. Muslim adolescents reported the highest belief in God (65%) with Christians and Hindus 2nd (both 39%) with all demographics (Buddhist, Christian, Hindu, Muslim, None) scoring within the same level for hope, meaning, protection of Earth and 'making the world a better place'. Importantly, more youth reported that their

religiosity/spirituality had increased, four times more than those who reported it had decreased over the previous two years.

American adolescents self-report as ‘religiously regular’ (40.85%) in a nationally representative sample of 17,705 youth indicating moderate levels of public religious participation and a moderate to high level of described importance of religious beliefs. By contrast, only 10.76% self-reported as ‘religiously disengaged’, with a higher percentage being ‘religiously devoted’ (18.25%). Importantly, these trends are much higher for BIPOC populations including Latin, African American, Muslim, and Native American youth (Salas-Wright et al., 2012).

Religiosity and religious institutions may help in a myriad of ways by supplying youth with protective resources such as buffering community violence exposure, personal victimization, and other deleterious impacts of traumatic incidents (Jocson et al., 2020). It is important to differentiate religion and spirituality as comparative studies have found that spirituality may help buffer effects more strongly due to its link with internalized beliefs and motivations (whereas religiosity may reflect parental values or cultural affiliation). Although parent-child agreement on religious/cultural values are also strong protective factors due to substantial research linking cohesive and stable family environments with numerous positive outcome measures (Jocson et al., 2020); linking religiosity with adolescent well-being is incomplete without accounting for familial factors such as degree of supportive relationship with parents and positive (or negative) family socialization such as speaking about R/S issues frequently with family. Indeed, having religious parents is perhaps the strongest predictor of adolescent religious identity formation, although as adolescents continue to age, peer influence such as actively

participating with friends in religious activities help explain the variance in adolescent religious commitment more significantly than parental influence (King & Boyatzis, 2015).

Religion & Adolescents of Color

Research on immigrant youth has revealed that congregations create opportunities for maintaining and building religious and ethnic identification and preservation (Suárez-Orozco, Singh, Abo-Zena, Du, & Roeser, 2012). Brittan and Spencer (2012) found that religious and ethnic identity correlated with less risk behavior for African American youth. Highly religious African American students perform well academically, study better, and engage in fewer risky behaviors than youth less committed to religion (Abar et al., 2009; Regnerus & Elder, 2003). Religious youth groups may also provide Asian-American adolescents with a sense of community and religious identity that often supersedes cultural identity. In a longitudinal study of religious identity, Lopez et al. (2011) found that Asian-American and Latino youth reported higher levels of religious identity than Caucasian youth and this identity was stable over three years of high school. Religious institutions and the relationships they engender also provide forms of social support that are particularly important to adolescent coping, resilience, and well-being. For example, youths' perceptions of social support from religious communities strongly predicted fewer depressive symptoms (Miller & Gur, 2002), whereas youth who perceived that their congregations were critical of them had more depressive symptoms (Pearce, Little, & Perez, 2003).

Findings from non-Western adolescent populations recurrently suggest that religiosity is amongst the strongest protective factors including across the Islamic world,

southeast Asia, Africa, and Latin-America (Scott & Cnaan, 2020). Although most psychological research is conducted on Western populations with only a reported 9% of studies on religiosity and adolescent development conducted on those outside the U.S. (Syversten et al., 2014). Generally speaking, 96% of all studies that attempt to build a solid ground of theory in the social sciences only come from nations that represent 12% of the global population (Rad et al., 2018). More so, within studies conducted on WEIRD populations (Wester, educated, industrialized, rich, and democratic) 83% do not report effects of diversity and over 85% do not mention cultural implications or effects (Rad et al., 2018). Therefore, it is critical in the development of the social sciences to account for cultural characteristics such as race/ethnicity or religious/spiritual affiliation, not solely as a measure of diverse sampling but as an ingredient which may hinder or help the research purported. Furthermore, Gallegos-Riofrio et al., (2022) denote that there is an overreliance on WEIRD populations within the nature-mental health/well-being research as well, with 62% of global studies failing to account for ethnicity/race.

R/S is an integral component for many non-Western people groups (Murthy, 2014) and inadequate assessment of this construct may limit understanding as to the diverse ways to maximize well-being, flourishment, and connectivity on behalf of these individuals (Rizvi & Pasha-Zaidi, 2021). Although psychology and other social sciences have long reneged on any benefits of religiosity and have had historical anti-religious sentiments, there are shifts to recognize the role of R/S as a unique protective factor that contributes to the overall health of many individuals and societies. For example, many third-wave therapeutic models draw from Buddhist, Taoist and Abrahamic faiths to allow for the utilization of mindfulness, spirituality, and compassion (Shah & Shah, 2021).

A strong relation to one's ethnic or cultural identity (enculturation) is a robust protective factor for youth being linked to greater self-esteem, lower depression, higher academic achievement, and usage of coping skills (Fleming & Ledogar, 2008). For many youth, religion and/spirituality are inextricably tied to their ethnic or cultural identities (Juang & Syed, 2008). African-American adolescents routinely report higher self-reported levels of religious importance, religious attendance, and familiarity than European-American adolescents (King & Boyatzis, 2015). Holmes and Lochman (2012) found that parental church attendance was the only significant predictor of low aggressiveness amongst African American youth aged 7-12 who had previously been identified as highly aggressive with suggestions for culturally-sensitive treatment that integrates scripture reading or praying due to more robust effects. Among low-income rural women, Gill, Minton, and Myers (2010) found that spirituality and religiosity accounted for 39% of the variance in wellness, which was best explained by the specific components of purpose and meaning in life, unifying interconnectedness, and private religious practice.

Religiosity is often viewed much more closely with spirituality in Latin and African American cultures (Jocson et al., 2020) with 79% of Latin Americans identifying with a religious affiliation and 88% of African-Americans reporting certainty about God's existence (Pew Research Center, 2015; Mattis et al., 2016). Substantial research finds that both African American and Hispanic youth tend to be higher in religiosity than White youth with immigrant youth reporting the highest trends (Ceballo et al., 2020). Importantly religiosity has emerged as a protective factor for low SES Latin and African American youth including those exposed to community violence (Jocson et al., 2020).

Religiosity has been associated with lower depression, lower personal victimization, and a higher rate of PTSD for those youth lower in religious practices (Jocson et al., 2020). Amongst 223 Hispanic adolescents (M = 14.5, 61% female) it was found that personal spirituality better moderated relations between community violence exposure and higher psychological well-being as opposed to religious importance at home, indicating that faith as an internalized set of values may be more beneficial for low SES Hispanic/African American youth (Jocson et al., 2020). These effects continue to persist as youth become older; Martinez (2017) utilizing nationally representative data (n = 2258, 24% foreign-born) found that those Hispanic youth with higher rates of personal religiosity at Time 1 had a reduced likelihood to engage in delinquent behaviors such as exposure to violence and alcohol use and better ability to cope with depression/anxiety at Time 2 as compared to Hispanic youth low on religiosity.

Mattis et al. (2016) indicate that African Americans tend to be the most religious group in the United States and that historically African American religious organizations aided believers in political, educational, and economical efforts. Furthermore, the African American Church and community served as a place of refuge for those disenfranchised by systematic inequalities and served as a site for civic and social justice activities. Consequently, faith and spirituality are crucial protective factors for African Americans as they are linked with Afrocentric values of respect, collectivism, and resilience in the midst of oppression (Eshun & Packer, 2016).

Spirituality and faith are also rooted in a familial, communal, and social contexts for Hispanic populations with adherents gaining further insight into a broader sense of self by drawing from ancestral and indigenous sources; Castellanos and Gloria (2016)

indicate that a ‘mind-body-spirit’ paradigm is the foundation for many Latin approaches to life helping to navigate obstacles, engage well with one’s multiple environments and sustaining well-being. Similar associations are noted for Asian populations including Islamic, Hindu, Sikh, Buddhist, and other Eastern ideologies (Rizvi & Pasha-Zaidi, 2021).

Bowers et al. (2020) note that R/S is linked with higher academic achievement, better prosocial behaviors, lower criminality, and higher well-being in youth of color, particularly Hispanic and African Americans. In a study of 256 youth (M = 15.1, 46.9% African American, 33.6% Hispanic), spirituality (assessed using the 9-item Measure of Diverse Adolescent Spirituality; King, Kim, Furrow & Clardy, 2017) was positively associated with the global measure of PYD and each of the Five C’s (competence, confidence, character, caring and connection; Geldhof et al., 2014). It was found that younger youth benefitted more from spirituality than older youth and cumulatively; critical reflection, mentoring and spirituality accounted for a significant proportion of variance in global PYD scores (Bowers et al., 2020).

The role of religiosity and spirituality has long been an integral aspect for many societies; for example, many non-Western cultures utilize non-biomedical healing paradigms for a range of negative health indexes and Indigenous researchers have commented on integration of methodologies, beliefs, and values when working with individuals who believe in these traditions (Kpobi & Scwartz, 2019; Duran, 2006). Similarly, many BIPOC individuals endorse higher levels of R/S, including adolescents, and thus it is incumbent on researchers and practitioners to assess, target, and meaningfully implement these variables in a safe, inclusive, and adequate manner. For

example, Tan and Wong (2012) propose a systematic method of teaching spiritual education across public schools in which students can broadly and openly speak about their ideas concerning religion and/or spirituality in the hopes of enabling broad-minded citizens who are aware of diverse worldviews and in-touch with their own deeper values and beliefs.

Extrinsic & Intrinsic Religiosity. Gordon Allport (1967) sought to differentiate how faith members utilize religiosity. He found that those having more intrinsic orientations seek to find meaning, direction, purpose, and deep personal commitment through their faith. In contrast, those with more extrinsic orientations use their faith for security, status, and sociability. Allport (1950) believed that intrinsic religiosity was a more 'mature' integration of religious ideas leading to a more complex cognitive-emotional profile and flexibility, whereas extrinsic religiosity was associated with rigidity, prejudice, and fanaticism. For example, a meta-analysis (n = 55) found that extrinsic religiosity was positively correlated with racist attitudes (r = .17), whereas intrinsic religiosity was negatively correlated (r = -.07), extrinsic orientations were further associated with group identification ('us vs. them') and religious fundamentalism (Hall et al., 2010). Other meta-analyses have substantiated intrinsic religiosity such as personal devotion having better relations to various measures of psychological health such as Hackney and Sanders (2003) who reviewed 35 studies between 1990 to 2001, finding a positive correlation (r = .11) with intrinsic markers and unrelated or inverse relations with extrinsic markers such as ideological and institutional measures.

Intrinsic religiosity has been well-documented as a robust predictor of psychological health and well-being (Singh & Bano, 2017; Mahmoodabad et al., 2016).

However, a limitation of this line of research is that the majority of studies within the R/S discipline, utilize Western Christian adult samples (Dy-Liacco et al., 2009). Stronger associations to extrinsic religiosity have been found within faith communities which value social and collective bonds such as in Judaic, Catholic, and Hindu populations (Singh & Bano, 2017). Amongst adolescents, less profound differences have been noted with adolescents having either intrinsic or extrinsic orientations having better self-esteem, lower self-reported loneliness and depression amongst 782 adolescents (M = 12.69), as compared to non-religious adolescents, highlighting the positive effects of religiosity (in general) (Milevsky & Levitt, 2004). Amongst 197 Indian adolescents, intrinsic religiosity had significant positive associations with extrinsic religiosity (0.42) with intrinsic religiosity having stronger correlations with Eudaimonic dimensions of self-acceptance (0.14) (Singh & Bano, 2017).

These associations may be especially unique for demographics that endorse higher levels of religiosity such as African Americans; amongst 355 African American adolescents over a four-year period, the largest percentage retained high levels of intrinsic religiosity over the time span (n = 134, 41.1%) from 5th to 8th grade with a higher percentage becoming more religious than less religious. This contrasts with reported declines into older adolescence amongst youth in Canada, Czech Republic, England, Israel, Poland, and Scotland (Michealson et al., 2016). This ‘high and steady spiritual connected’ group was found to have greater uses of adaptive coping strategies including greater emotional management, higher goal-directedness, and higher life satisfaction (Wright et al., 2018). Further analysis of this group found that maternal behavior including attendance at a place of worship and self-reported religious

commitment, as well as youth identification with their mother as warm and accepting, and their general home environment as emotionally stable contributed significantly to retaining intrinsic levels of religiosity over the four-year span (Kliewer et al., 2020).

Another important consideration is the construct validity of studies purporting to measure religion and/or spirituality which is most often construed as the rate of attendance at a place of worship or self-reported importance (Salas-Wright et al., 2012). Large-scale meta-analyses have found mostly strong associations between R/S indexes and positive effects on adolescent health, although there are methodological limitations such as lack of attention to concrete processes at an individual, familial, and social level (Shek, 2012).

R/S & Developmental Assets

Syvertsen et al., (2014) developed the Youth Spiritual Index to better understand the multiple relationships between adolescents and concurrent domains related to social, academic, emotional, and physical health. This survey was given several countries, including the US, UK, Cameroon, Canada, India, Thailand, Australia, and Ukraine (n = 6,725, 53% female). Survey results indicated that youth scoring the highest on each YSI index was associated with positive youth outcomes. This includes better physical health, decreased likelihood of substance abuse, less engagement in violence, greater academic success, higher availability of coping resources, higher self-awareness/empathy/forgiveness, a sense of having a hopeful future, taking care of the environment, regular volunteering in schools/communities and better mental health. Importantly, these indexes were held even when country-level or religious affiliation

were controlled for indicating the saliency of spiritual development as intrinsic motivators beyond conformity or subjugation to sociocultural demands.

Similar to Syvertson et al. (2014), Scales (2007) found that religious participation and self-reported importance of religion contributed to numerous Development Assets. For instance, religiously active youth were at least 60% more likely to contribute to 'community values', 'service to others, 'creative activities', 'restraint', 'positive family communication', 'a caring neighborhood', 'a caring school climate' and 'time spent in youth programs.' In data collected from over 148,000 U.S adolescents by Scales (2007), 58% reported weekly participation in religious activities and 50% reported 'being religious or spiritual as quite or extremely important to them'. There religiously committed youth were 39% less likely to engage in risky behaviors and 26% more likely to exhibit prosocial behaviors such as academic achievement, conflict resolution, better health status, and leadership recognition.

In sum, international research with large samples of youth shows a strong positive relationship between religiosity, DA, positive youth outcomes, and prevention of problems. It appears that religious development as one of the strongest protective factors for adolescents. The hypotheses in this study builds along a solid line of previous research indicating that youth who are religious and/or spiritual may have supplemental cognitive, social, behavioral, emotional, and existential pathways which lead to better developmental outcomes. Although the causal relationship between R/S, DA, and positive youth development has not been established, R/S is a malleable variable that could be the target of intervention (Benson & Roehlkepartain, 2008).). Changing R/S is beyond the scope of this study. For current purposes, it appears that R/S is implicated as a

moderator of DA and could moderate the effects of summer camps designed to promote positive youth development. This study examines the moderating effects of R/S on changes during summer camps provided by The Woods Project.

TWP Character Traits & Links with Adolescent R/S

Detailed below are character traits that are explicitly promoted in The Woods Project (TWP) and converging research on how heightened religiosity has been found to impact or benefit. These variables have been promoted and measured for several years and have all been shown to change significantly in pre- and post-camp surveys of youth who completed TWP summer trips.

Grit/Perseverance. Grit is defined as passion and persistence in the pursuit of long-term goals and is an integral part of adolescent development leading to positive outcomes such as better student engagement and academic success (Tang et al., 2019). A study conducted on 2018 students (55.3% female) across 3 years (33.89% of students responded to all 3 assessments) found that the 'perseverance of effort' subdimension of the grit scale had a greater impact on student engagement than academic achievement, as it mediated the relationship between goal commitment and engagement ($\beta = .06$, $p < .01$; $\beta = .10$, $p < .01$). Importantly, grit has been found to be related to life purpose commitment in high school and college students (Tang et al., 2019). A study on 3966 emerging adults ($M = 20.19$) found that higher levels of spirituality (included religious subdomains related to a two-way relationship with a Higher Power) was associated with positive psychology traits including grit (.61), optimism (.64), gratitude (.91), forgiveness (.85) and meaning in life (.79) (Barton & Miller, 2015).

Independence. A major theme that emerges during adolescence is the need for autonomy and independence (Dollahite & Thatcher, 2008). Spear and Kulbok (2004) in seeking to define autonomy as it relates to adolescents list several considerations such as active, individualized, holistic, contextual, and process-oriented dimensions. These dimensions of independence guide cognitive and social changes which lead to identity formation and, ultimately, emancipation, or the realization that parents or other authority figures are not absolute or unquestionable (active). This shift towards self-government is influenced by gender, age, family structure such as birth order, culture, and individual factors such as youth's desire for autonomy (individual). Consequently, these impact the various environmental systems which create the dynamic layers of the adolescent social functioning such as relying on immediate peer group for support rather than on parental figures (holistic).

It is important to contextualize the promotion of independence amongst adolescents within their sociocultural framework. For instance, families higher in individualism (predominantly in contemporary Western countries) may value independence and autonomy more as opposed to families from collectivistic cultures (Dollahite & Thatcher, 2008). As it relates to religiosity, parents from conservative or more traditional religious households may take a more intensive interest in the lives of their children valuing traits such as conformity and obedience (Regenerus, 2003).

The degree to which developmental change in R/S is viewed as hostile or welcoming by the adolescent may be moderated by the level of parental-child warmth, closeness, and youth's willingness to accept parental values (Brambilla, 2014). If the relationship is categorized as hostile or low in warmth or closeness, this may lead to

religious introjection due to substantial research relating intrinsic value demonstration (IVD) and intrinsic religiosity with autonomous motivation (Brambilla, 2014). This pattern is illustrated in a study conducted on 394 Catholic youth in Italy (M = 19.29, 53% female) in which basic autonomy support (categorized by parental reciprocity, perspective taking, choice, and minimizing controls) was found to be related to higher levels of identified religious internalization which was more closely associated with better psychological adjustment (Brambilla, 2014). In contrast, increased levels of parental conditional regard (example item; "if I change my religion, my father would be very disappointed in me") was positively related to religious introjection, even when controlling for parental warmth. Dollahite and Thatcher (2008) interviewing 57 highly religious married couples along with their 77 adolescent children (M = 15.5) to better determine how religion influenced parent-child relationships found that open religious conversations were rated as most meaningful and 2nd most frequent after religious activity by both parents and adolescents. Youth-centered dialogues which centered around parents seeking to better understand the needs of their children were found to be the most engaging, enjoyable, and effective in faith transmission (helping adolescents better relate to parental religiosity *and* explore their own values).

Self-control. Self-control may lead to the promotion of constructive behaviors such as academic betterment, volunteering/altruism or prosocial skills and/or the reduction of destructive behaviors such as substance abuse, risky sexual activity, gambling, violence and dangerous driving (Cheung & Yeung, 2011). Religious orientation may be one mechanism by which adolescents promote constructive behaviors and inhibit destructive behaviors as it has been related to better social capital, decreased

aggression, and increased self-esteem (Smokowski et al., 2014). A meta-analysis of 40 studies on the relationship between religiosity and self-controlling behaviors in adolescents (M = 16.45) found that the private dimension of religiosity, such as religious commitment, was much more strongly linked to prosocial behavioral outcomes than public dimensions such as the rate of attendance at a place of worship. Importantly, the meta-analysis utilized a non-representative sample finding an overall effect of .19 indicating that correlations between religiosity and prosocial adolescent behaviors may be inextricably linked to the dominant social context such that in a culturally homogenous context, religious involvement and participation is more favorable (Cheung & Yeung, 2011).

In another study on self-control and religiosity, a longitudinal panel study of 4,000 middle and high school students across Grades 6 to 9 found that every one-unit increase in religion orientation decreased aggression score by 2% ($p < .001$). This was about the same as the effect of ethnic identity (0.9%), peer pressure (1.8% increase), and parent-adolescent conflict (1.3% increase). More robust predictors than religious orientation included school satisfaction (5.2% decrease), having a delinquent friend (12.4% increase), and internalizing symptoms (19.3% increase). Self-control or self-regulation are well-established as mediators linking the relationship between heightened religiosity and positive adolescent health, such that youth who are better able to utilize adaptative responses have lower substance use, lower externalizing behaviors, lower harmful media use such as pornography and better well-being (Hardy et al., 2019),

Another nationally representative sample (n = 26,765, 66.3% Caucasian, M = 14.6) found that 66.52% of adolescents who regularly attended religious services had no

externalizing behaviors related to substance abuse and antisocial behavior such as fighting, theft or truancy and that those adolescents who demonstrated externalizing behaviors had significantly lower levels of dispositional self-control and marked approval for use of illicit substances. About 1/3 of religious adolescents reported externalizing behaviors which were further associated with high levels of conflicts with parents, less supportive relationships, and lower levels of academic engagement (Salas-Wright et al., 2016). This builds along previous line of research in which religious may not act as a salient protective factor with increased family conflict which is related to adolescent depression and anxiety, even when youth report engaging in private religious practices (King & Furrow, 2008).

Similar trends have been noted for young adults and college students with higher levels of religiosity or spirituality being substantially related to lower levels of alcohol, tobacco, and marijuana use, and less heavy episodic drinking. Importantly students who only identified as 'spiritual' had higher rates of alcohol and drug usage than those who identified as 'religious' or 'religious and spiritual'. For example, 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 the use of cigarettes ($r = -0.18$), alcohol ($r = -0.16$), marijuana ($r = -0.14$), and other drugs ($r = -0.18$). Amongst other differentiations, 'spiritual' students also tended to endorse social values related to environmental/social justice and interests in alternative healing with more liberal political orientations (Burke et al., 2014).

Environmental Appreciation. Although research is sparse in this domain; some German studies have found positive relations between religious orientation and

environmental awareness amongst adolescents. However researchers note that religion is not as salient a predictor in European cultures, with value orientations such as degree of egocentrism, eco-pragmatism, and political orientation being much stronger predictors of environmental appreciation and action (Altmeyer, 2021). In comparing faith traditions, differences have been noted such as adherents of fundamentalist traditions such as Evangelical faiths reporting the least amount of concern for the environment as compared to Catholics (Carlisle & Clark, 2017). Religious values related to stewardship (ones who care for God's Earth), responsibility for nature and social action have been found in the U.S., with some well-known environmental organizations (Green Peace, Sierra Club, etc.) having been founded with religious or spiritual intentions (Carlisle & Clark, 2017). Using a generational sampling method across 19 cohorts from 1973 to 2014, Carlisle and Clark (2017) found that denominational difference was a more robust predictor for support for environmental spending than cohort variance or generational attitudes. Smiley (2019) found similar trends in that areas with a larger percentage of conservative Protestant Evangelical members had greater pollution rates as compared to mainline Protestant and Catholic concentrated areas. Although these are heavily moderated by political orientation such as greater endorsement of free market ideologies and insular social ties (greater distrust of out-groups).

Related to U.S. adolescents, females are found to have higher moral ideal selves (self-schema based on wanting to become 'more moral') which are linked with positive adolescent outcomes including school engagement, environmentalism, and low levels of internalizing/externalizing behaviors. A study utilizing two samples ($n = 510$, $M = 14.2$, $n = 383$, $M = 16.3$) found that a sense of purpose and social responsibility helped mediate

this relationship suggesting these youth are more successfully forming their identities based on ethical principles (Hardy et al., 2014). Other plausible mechanisms of action that have been linked with higher or lower environmental support are the degree of parental support for environmental actions and values, emotional affinity for nature, and level of personal responsibility (Pratt et al., 2013; Krettenauer, 2017; Wray-Lake et al., 2010). Historical declines have been noted such that from 1976 to 2005, a majority of high school seniors report lower levels of concern for environmental issues, lower levels of conservation behaviors, and assigning responsibility to the government and consumers to care for the environment instead of individual stewardship (Wray-Lake et al., 2010).

Wells and Lekies (2006) have demonstrated that childhood experiences related to nature such as hiking, playing in the woods, camping, hunting/fishing, planting trees, and caring for plants are related to further adult environmental attitudes, with 'wild nature' participation such as camping having higher associations with pro-environmental behaviors as contrasted with 'domestic nature' experiences. Substantial research has linked exposure to nature through camping experiences with heightened spirituality amongst adolescents and subsequent adult reports of spirituality with green purchasing, pro-environmental attitudes, and reduced materialism indicating a viable model in which children/adolescents develop eco-conscious orientations due in some part to transcendent/spiritual attitudes such as sacredness of all living things, a belief in a non-localized self and interconnectedness (Bialescchki et al., 2007; Sharma et al., 2020).

Developmental Assets & Links to Adolescent R/S

The Developmental Assets (DA) used in the current study are included from a list of 40 attributes compiled by the Search Institute (Scales et al., 1999). These were initially

divided into four categories: commitment to learning, positive values, social competencies, and positive identity. These constitute ‘building blocks’ that youth can gain for broader levels of success at an individual and communal level (Stevens & Wilkerson, 2010). The scales show consistent psychometric validity, as they were compiled with attention to 800+ research studies on each of the 40 DA (Scales & Leffert, 1999).

Positive Values. Silke et al., (2018) in compiling a systematic review (n = 168 studies) on adolescent development of prosocial behaviors and empathy reported gender as the most significant factor. In this review a majority of the studies (n = 104, 61%) reported girls as having significantly higher traits of empathy and prosocial intentions/behaviors with 19 (11%) studies finding demonstrable correlations over a consistent period of time, it is important to note that a higher percentage of adolescent females report ‘religion being very important in their lives’ as opposed to adolescent males (King & Boyatzis, 2015). Of these, 15 (8%) studies reported positive correlations between religious/spiritual orientations and pro-sociality including 3 which linked religious commitment with significantly higher empathetic responding, although these trends also hold for adolescent membership to non-religious memberships such as belonging to spots, music, cultural or other extra-curricular groups.

Consistent with the research review, a U.K based study on 5993 adolescents (46% attending some level of religious services) found that positive God images (understanding God as more benevolent, rather than punishing) were related to greater empathetic capacity, along with significant correlations with sex (female), school year

(older), personality traits such as higher extraversion and lower psychoticism scores, religious attendance and self-assigned affiliation as Christian (Francis et al., 2012).

As has been noted recurrently in the psychology of religion, intrinsic faith indexes have been associated with greater empathy and altruism including positive God images which are related with positive self-evaluations ("I am capable of coping with most of my problems") (Smith & Walker, 2015). Schwartz and Howard (1981) define altruism as 'self-sacrificial acts intended to benefit others regardless of material or social outcomes for the person enacting the behavior.' Importantly, these researchers propose that altruism is ultimately based on affirming one's moral values (Schwartz & Howard, 1984). In regards to religion, it is important to contextualize one's behaviors as it relates to numerous goals extrinsically and intrinsically (Self-Concordance Theory; Sheldon & Elliot, 1998) such that religious persons are found to engage in charity including donations and volunteering due to social gains, inner peace, comfort and intrinsic life satisfaction (Kaya et a., 2020).

Academic Engagement. Academic engagement is defined as time and energy which student invest in educationally purposeful activities in absorption, dedication, and vigor (Chukwuorji et al., 2017). Research has found that intrinsic religious commitment related to personal meditation/prayer and private time spent reading sacred texts helped mediate the relationship between positive locus of control (related to better self-directing and adaptive skills) and academic engagement in dedication, absorption, and vigor with interpersonal or extrinsic religious commitment only being related to dedication, and negatively associated with positive locus of control (Chukwuorji et al., 2017). 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.

Social Support/Extracurricular Activities. Research indicates that amongst the most salient protective factors for adolescents are degree of involvement in recreational or extracurricular activities (Syversten et al., 2021). These help youth extend social networks beyond immediate family, aiding in psychosocial support and identity formation (Ruvalcaba et al., 2017). One form of extracurricular support is involvement with faith communities which is related to higher levels of purpose, lower risks for alcohol/drug usage, positive associations with pro-social behaviors and negative relations with peer pressure (Ruvalcaba et al., 2017). Importantly, stronger trends are found for highly religious populations such as highly religious Muslim adolescents who endorse better mental health, happiness and social support than Muslim adolescents lower on religiosity (Abdel-Khalek, 2007). Although involvement in various extracurricular activities may reap personal benefits, religiosity is substantively linked with altruism and volunteering beyond the personal level. Kerestes et al., (2004) in following 4 cohorts of high school students from sophomore to senior year found that those who endorsed high levels of religiosity also had higher levels of civic integration such as volunteering for political campaigns, demonstrating for a cause, etc.

A strong mediator that links adolescent religiosity with better academic achievement is increased social support such that religious participation enhances social ties, social capital and enhances relationships with non-familial adults and peers leading to extended networks of educational resources available (Glanville et al., 2008). Good and Willoughby (2011) criticize the idea that religious participation has historically been subsumed with other forms of extracurricular involvement for adolescents such as in sports or community service, as it provides additional benefits such as moral directives and group rituals which may illicit divine or profound experiences and additional risks such as collective guilt and impediments to identity formation. Utilizing a longitudinal design from 2003 to 2008 across 5 waves of data (n = 3,993, 49.4% female), Good and Willoughby (2011) found lower levels of substance usage, even when controlling for individual, friend, and parent-level variables indicating adolescents exhibit increased levels of self-control and self-regulation due to their religious affiliation. This was contrasted with youth involvement in non-religious activities which had non-significant associations with substance usage, although both had positive associations with academic success over time.

Nature Connectedness

Exposure to nature has been associated with significant health benefits; these may be attributed to reduced stress, production of natural sounds, exposure to better air quality and ultraviolet light which provides vitamin D and other forms of physiological restoration (Stress Recovery Theory; Ulrich et al., 1991), as well as cognitive, behavioral and spiritual changes including recovery from fatigue, facilitating social cohesion, opportunities for physical activity, stress reduction, improved cognition, lower risk of

depression/anxiety and enhanced spiritual experiences (Clearly et al., 2017; Chang et al., 2020). Humans largely report natural settings as being places that provide restorative benefits such as feelings of relaxation, self-reflection and 'forgetting about one's worries' (Chang et al., 2020). In analyzing 31,534 social media images, nature labels were largely used in context with fun activities such as vacations or honeymoons suggesting an implicit association between nature and ameliorative benefits (Chang et al., 2020).

Countries with more natural settings tend to report higher life satisfaction such as Costa Rica or Finland (Chang et al., 2020). There are a number of subjective evaluations an individual may derive from exposure to nature; Kellert (1993) lists these;

1. Utilitarian value or the material increases which one may benefit from using (or exploiting) nature to satisfy one's desires.
2. Negativistic relates to feelings/cognitions of fear, dislike, disgust or aversion one may have for nature.
3. Dominionistic which relates to wanting to subdue or control nature.
4. Naturalistic which relates to innate pleasure or satisfaction derived from direct experience with nature.
5. Ecologist-scientific relates to systematic knowledge including patterns, structures, and functions of nature one derives from exposure to nature.
6. Aesthetic relates to affective and emotional responses such as awe or wonderment when being exposed to nature.
7. Symbolic relates to abstractions gleaned from nature which helps one communicate or think at a broader level.

8. Moralistic relates to ethical relations such as right or wrong orientations towards nature, environment, or wildlife creatures.

Theories Linking Nature to Well-Being

The Biophilia Hypothesis is one of the leading scientific explanations of the benefits of human interaction with nature. According to the Biophilia Hypothesis (Wilson, 1984), human beings have an innate predisposition to yearn for and want to connect with nature as it satisfies our base cognitive, emotional, and evolutionary capacities as our species largely relied on natural resources for survival and reproduction historically and it is only recently that humans have begun living in urban environments (Capaldi et al., 2015). These results are substantiated in a plethora of studies that suggest that even a minimal connection with nature (i.e., looking outside a window) increases productivity, reduces sickness, and aids in the treatment of patients (Kahn, 1997). These benefits are found across numerous cultures and various developmental stages (Capaldi et al., 2015). For example, Ulrich (1993) exposed individuals to images of natural settings as opposed to man-made settings and found higher rates of recovery from various stress such as in a correlational study in which prisoners whose cells faced an environmental landscape such as a forest or farmland experienced less health-related issues than those prisoners whose cells faced a prison yard. Ulrich et al., (1991) proposed a theory that human beings engage with nature as it promotes psychophysiological stress recovery decreasing arousal and perceived stress as natural environments have been historically evolutionary beneficial for human survival.

Another scientific theory explain the benefits of nature on people is The Attention Restoration Theory, which suggests that natural environments improve our concentration,

necessitate better direct attention, and increase emotional functioning (Kaplan & Kaplan, 1989). Human Space Report (2014) found that academic institutions or corporate offices that incorporated a biophilic design had 14% productivity increases and higher well-being indexes. A study on 2,593 children from 2nd to 4th grade in Spain found that those children whose schools had incorporated a biophilic design (tree canopies) had an increased rate of cognitive development over a year, even when controlling for demographic variables with similar academic performance trends found in U.S children and high school students who were in schools with higher levels of vegetation (Determan et al., 2019). A randomized control trial between 6th to 12th grade students in a biophilic classroom with a nature view, diffused lighting, biomorphic patterns, and forms such as nature-related wall graphics (n = 125) and a control condition (n = 122) found the latter having 3x higher scores on average Math scores, 7.2% more students testing at grade level with higher reductions in stress and higher levels of involvement, enjoyment and 'purpose to learn' (Determan et al., 2019). Kahn (1997) tested 72 African American children from 1st to 5th grade to better relate the idea of the biophilia hypothesis to lifelong development finding that 96% of the children endorsed thinking about nature or animals with 87% reporting 'plants being an important part of their lives'. 87% reported that littering or polluting violated a moral obligation after exposure to three vignettes in which an individual or community engaged in the behavior. Answers from 26 separate questions related to nature were compared with data from Indigenous Brazilian children of the same age living by the Amazon River with only two statistical differences in answers.

Demographic differences have been noted, however; Menominee Native Americans spend more time interacting with nature directly in their outdoor activities, as compared to European Americans. Another comparative study also showed that Swiss participants preferred forests with high biodiversity, while Chinese participants did not show such preference (Chang et al., 2020). Results are mixed as to whether human beings have affiliations towards nature due to evolutionary biological origins or learned cultural adaptations (Clearly et al., 2017). In addition, Wells and Evans (2003) found that among 337 rural children, those with more nature near the home exhibited less psychological distress, and that proximity to nature served as a moderator to the effects of negative life events on distress. Green Care – The inclusion of nature exposure interventions for mental health is effective (Clearly et al., 2017).

Nature Connectedness & Well-Being

Nature connection can be part of the relatedness dimension in Deci and Ryan's Self-Determination Theory (SDT). This theory suggests that human beings have a basic, innate need to relate and connect to others including the world around us; research has found that nature connection significantly predicted happiness even when controlling for familial or cultural relatedness (Clearly et al., 2017). Nature connection is also related to higher levels of intrinsic motivations including humanitarianism, kindness, empathetic concern, altruism, less selfish consumer decision-making and pro-environmental decision-making (whereas extrinsic motivators are associated with lower life satisfaction, lower vitality and lower well-being and higher trends of depression, anxiety, and other psychopathologies; Clearly et al., 2017).

Numerous studies have found increases in hedonic well-being (or Subjective Well-Being; SWB) when individuals are exposed to or spend time immersed in nature (such as in camping trips) or even have brief contact such as routine visits to a local park. Meta-analyses linking this nature connection have found moderate but significant increases in positive affect, significant decreases in negative affect, and enhanced life satisfaction (n = 8,500). Longer-term effects indicate that living in a greener area is associated with greater life satisfaction, greater mental health, higher emotional well-being, and a greater ability to cope with stress (Capaldi et al., 2015).

Related to Eudaimonic well-being, contact with nature and nature connection are linked with meaningfulness, increased autonomy, personal growth, social competency, vitality, awe and spirituality (Capaldi et al., 2015). These are further linked with pro-environmental behaviors indicating that dual increases in SWB and EWB may broaden the full functioning of individuals from merely 'feeling good' due to contact with nature towards enacting behaviors to preserve and care for nature. Research finds that individuals high in trait nature connectedness have higher levels of EWB and subsequent pro-environmental behaviors, even when accounting for the degree of nature contact and demographics (Martin et al., 2020). Trait nature connectedness was defined as "individual experiential sense of oneness with the natural world" (Howell et al., 2011, p. 166).

Furthermore, nature connectedness is associated with flourishment in both personal/private and social/public domains of life with meaning in life, spirituality, and physical health functioning helping mediate the relationship along with immediate environmental context moderating this link such as uninhabitable winter months

accounting for the non-significant association between nature connection and well-being for northern Canadians (Howell et al., 2011). Finally, nature connectedness is inextricably tied to mindfulness with a meta-analysis (n = 2435) finding an overall effect size of 0.25 indicating a bi-directional relationship between greater mindfulness and greater nature connection. However, stronger associations were found for older participants and community members who may have greater opportunities to engage with nature than student participants (Schutte et al., 2018).

Camping Experiences

National parks incorporate parts of the natural environment for enjoyment, recreation, and conservation for biological diversity; camping experiences allow for a more direct interaction with nature by allowing inhabitants to temporarily live in a dynamic, natural ecosystem (Hassell et al., 2015). These experiences range in self-reported importance and saliency related to physical, aesthetic, social, or spiritual experiences and depend on numerous factors including weather, park management, and values/ideals endorsed by campers (Hassell et al., 2015). A qualitative design (n = 29) seeking to better understand deeper meanings and experiences of campers found that each one endorsed similar themes such as awe, adventure, overcoming challenges, rest/relaxation, and connecting with family and friends (Hassell et al., 2015).

Substantial research has found that camping experiences impact life skill development in youth including physical health, academic outcomes, socioemotional skills, and career development (Garst et al., 2016). Camping experiences are defined as a "sustained experience that provides a creative, recreational, and educational opportunity in group living often occurring in the outdoors. It utilizes trained leadership and the

resources of the natural surroundings to contribute to each camper's mental, physical, social, and spiritual growth" (American Camp Association, 2012). These experiences are different from other developmental environments in that youth are exposed to nature for a prolonged period, have extended and intimate contact with staff and variability in activities (although intensity and duration may vary for each camping experience).

Demonstrable benefits have also been found with children/adolescents with serious health complications such as a Hungarian camping study in which 115 adolescents (M = 13.34) with cancer, diabetes and juvenile immune arthritis had clinically significant improvements on at least one subscale of Health-Related Quality of Life with most significant improvements in self-perception which is related to self-esteem, self-efficacy and positive changes of adolescents living with diabetes and cancer (Bekesi et al., 2011). A systematic review on 18 studies on camping experiences for children living with cancer found large improvements to social health, quality of life, sense of normalcy, and self-image (Neville et al., 2019). For youth with health impairments, camps provide unique psychosocial benefits such as attenuating losses from school (and other settings) through the development of interpersonal skills and feelings of greater support with larger benefits when youth attend camp over a longer period of time (Neville et al., 2019).

Benefits, apart from prolonged periods of nature immersion, have also been found in youth who report more outdoor playing time (particularly if it is nature-based such as in a park); Jackson et al., (2021) found smaller declines in well-being amongst 624 adolescents who reported more outdoor playtime during the COVID-19 pandemic.

Spirituality & Nature Connectedness

Spirituality encompasses a broader sense of self that shifts away from the 'I' and towards all life forms, ecosystems, and even the Earth (Kamitsis & Francis, 2013). A study utilizing 190 individuals (M = 36.8, 44.7% students) found that those with a stronger spiritual orientation had higher levels of nature exposure and connectedness to nature; spirituality was quantified using Hood's Mysticism Scale (1975) which may indicate well-being outcomes are associated with a unified sense of self beyond the 'I' (existential components). Furthermore, spirituality mediated both relationships between nature exposure and connectedness to nature with psychological well-being.

Spirituality is a mediator linking nature connection with well-being indicating that facets such as purpose in life, meaningful existence, and belief systems can serve as a transcendent framework to connect and unify nature experiences with concrete and persisting emotional, cognitive, and behavioral changes. Notably these trends are readily found in societies that have deep synergistic spiritual-natural worldviews such as amongst Pacific Islanders or Native Americans (Clearly et al., 2017). Rose (2012) denotes that greater levels of well-being are found when people have previous memories, associations, and familiarity with natural settings such as those they experienced in childhood or adolescence. Hence, Indigenous societies are particularly sensitive to nature connection and the benefits accrued. Consequently, one important variable that may differentiate individuals who benefit more from nature experiences is a person's sense of agency and what their self-identification with nature is including feelings, attitudes, beliefs, and behaviors.

Even simple activities such as going for a walk close to one's home have been found to increase well-being. A randomized control trial with undergraduate participants

(n = 84) assigned to either a nature intervention condition involving brief exposures to nature or a control condition. Results indicated that, at the end of 2 weeks, net-positive effect and feelings of elevation were significantly higher (Hedonic well-being), as well as meaning and self-concordant motivation being marginally higher (Eudemonic well-being), in the nature intervention condition relative to the control condition. Importantly, levels of trait connectedness to nature (self-identification with nature) did not moderate the effect of the nature intervention on well-being, indicating that nature connection and exposure help most individuals with both types of well-being (Passmore & Howell, 2014).

American Camp Association has also documented the substantial increase in spirituality amongst adolescents in over 200+ camping sites (Bensen & Roehlkpartain 2008) indicating that any mechanism of action by which adolescents gain benefit from a camping intervention is incomplete without accounting for religion and spirituality.

Significance of This Study & Research Questions

Religiosity and spirituality are associated with external and internal developmental assets which support, empower, and facilitate constructive development of adolescents through building compassion, integrity, honesty, responsibility, social cohesiveness, self-control, and commitment to morals/ethics (Cheung & Yeung, 2011). Religiosity is a pervasive resource, particularly for adolescents and people of color, with around 90% of African Americans endorsing a religious or spiritual basis for existence (Mattis et al., 2016) and around 80% of Latin Americans endorsing a belief in religious principles (Pew Research Center, 2015). Nonetheless, numerous meta-analyses have found that religiosity/spirituality is rarely examined in studies of youth mental health

when compared with other multicultural factors such as race/ethnicity, sexual orientation, and socioeconomic status (Parker et al., 2021). Our current student sample is almost entirely African American and/or Hispanic and lower in socioeconomic status which has historically signified high levels of self-reported religiosity.

Minimal research has been conducted on the impact of religiosity/spirituality on pre-post intervention scores, particularly for adolescents. A criticism of the R/S research area has been a preponderance of studies assessing these constructs using single-item measurements at a single time point which may not fully account for the multi-dimensionality and breadth of one's religious/spiritual worldview (Piedmont, 2001). Although most studies have found positive effects on adolescent attitudes and behaviors; many studies lack a conceptual framework, do not report reliability or validity of measures, and around 50% report participation in religious activities/service as the sole measure of religiosity and spirituality, with a substantial percentage only measuring denomination-specific affiliation (Rew & Wong, 2006).

An overreliance on extrinsic religiosity or religious affiliation may fail to capture the strength of the effect of R/S on positive youth development. Some researchers argue that religiosity may *only* be effective in predicting attitudes and behavior when there is a strong integration of religious ideals with overtly reported observance (i.e., high intrinsic religiosity; Tongeren et al., 2021). Pertaining to adolescents, extrinsic religiosity may be related more to parental choice of religious affiliation than personal commitment or motivation. Consequently, frequency of attendance at worship services may not be suitable for adolescents who need 'age-specific' indicators such as intrinsic beliefs or life experiences tied to religion (Rew & Wong, 2006; Van Dyke et al., 2007). Strong familial

bonding including warm and a stable relationship with parents have been found to contribute significantly to adolescent extrinsic and intrinsic religiosity across their development span into adulthood (Kliewer et al., 2020), creating a potential confound with overt religiosity measures with family cohesion that should be controlled by measuring intrinsic religiosity and spirituality.

Spirituality (or intrinsic religiosity when defined within one's religious worldview) is tied with a higher sense of purpose, meaning, and connectedness (or at least search for connectedness). This may lead to better belonging with oneself, others, nature or a Transcendent (larger meaning of life). A comprehensive study using HBSC (Health Behavior in School-aged Children, n = 26,701) amongst 11-15 year old's in England, Scotland, and Canada found high endorsements of all four domains of spiritual connectedness with positive health indexes including fatigue, irritability, difficulty sleeping and feeling low (Brooks et al., 2018). Connectedness indicates a high degree of belonging to one's community, family or school and is correlated with higher well-being and emotional health.

Mindfulness and aesthetic sensitivity, or the ability to perceive nature's beauty, are two interlinking constructs tied to spirituality; Clearly and colleagues (2017) indicate these are base requirements for the desired impact of nature connection and health benefits across cultural groups. Hence, it is of importance to measure both extrinsic religiosity and intrinsic religiosity, as the majority of studies have linked spirituality (intrinsic religiosity) with larger increases in well-being and other positive outcome variables when exposed to nature. Related to nature experiences or interventions, little to

no research has been conducted measuring effects on extrinsic religiosity, particularly with adolescents.

The current study utilizes data from The Woods Project (https://thewoodsproject.org) which specifically targets low-income, inner-city youth to target developmental assets that lead to prosocial development. Youth are involved in school-based activities, weekend camping trips, and a capstone two-week-long wilderness experience. TWP also bridges these experiences with social support through scholarships, college applications, and a viable path to a brighter future as degree of educational attainment is substantially linked with a better quality of life (Ross & Van Willigen, 1997).

Previous research on TWP has found statistically significant improvements in development assets such as perseverance, social skills, teamwork, openness to experience, and appreciation from pre- to post-trip surveys for two separate cohorts across two summer trips. Furthermore, data from the Pemberton Happiness Scale (Hervas & Vazquez, 2013) has found that 78.3% of the summer 2019 cohort showed positive outcomes on emotional functioning. Data collected from TWP alumni (n = 44) has found that 97.7% are gainfully employed or furthering their education, which is starkly contrasted with state-wide data indicating that only 50% of African American or Latino students in Texas enroll in post-secondary education. Thus, TWP seems to be a robust intervention suitable to test the hypothesis that the effects of wilderness experiences designed to promote positive youth development can be moderated by R/S.

The purpose of the current study was to examine the relationships between adolescent religiosity/spirituality (R/S) and positive youth indexes including SWB/EWB.

More specifically, this study investigated whether these increased trends of R/S would significantly moderate the relationship between youth exposure to camping intervention (The Woods Project) and increased benefits in PYD traits for self-control, adaptability, independence, social intelligence, critical thinking, environmental appreciation, and zest/curiosity. Additional developmental assets for positive identity, positive values, and planning/decision-making will also be analyzed. Co-variates will be included to better adjust for a correlation between religiosity and the difference in pre- to post-trip scores for each outcome variable including age, gender, and race/ethnicity.

Hypotheses

The focus of this study is on change scores based on student self-report before and after a two-week summer trip. The study hypotheses will be tested using single predictor regression analyses using religiosity at T1 (pre-camp) scores. The degree of self-reported religiosity is hypothesized to significantly predict differences in mean outcome variables (i.e., religiosity will have a significant coefficient value in regression analyses). Hypotheses include:

1) There will be significant change scores for all students pre to post camping trip on outcome variables for Positive Experience, Positive Identity, Positive Values, Positive Planning, TWP character traits and PYD development.
2) There will be significant correlations between intrinsic and extrinsic religiosity (separately and as a composite) and outcome variable scores demonstrating that religion effects changes in the measured variables pre and post-completion of the camping trip for the following variables.
    a. Seven traits and abilities specifically targeted by The Woods Project

i. Grit/Perseverance

ii. Social Intelligence

iii. Adaptability

iv. Zest/Curiosity

v. Critical Thinking

vi. Environmental Appreciation

vii. Independence/Self-Control

b. Select Developmental Assets

i. Positive Experience

ii. Positive Identity

iii. Positive Values

iv. Positive Planning

Chapter III

Methodology

Participants

174 youth were assessed for The Woods Project before and immediately after undergoing a 2-week camping expedition (after follow-up; only 120 youth completed all surveys). These youth were separated across four cohorts with the same intervention being delivered from June 2022 to late July 2022. These youth are from Houston high schools which have partnered with TWP who serve high percentages of low-income students for youth ages 14-18. On average, 70% of youth tend to be Hispanic, 20% tend to be African American and the remainder are of other ethnicities (Smith and Kim, 2023). Preparation for this two-week intensive expedition included after-school clubs, weekend activities, and overnight camping trips throughout the academic year which integrate activities such as hiking, backpacking, kayaking, biking, and fishing with socioemotional lessons to develop communication, teamwork, critical thinking, environmental awareness, and leadership abilities and skills (https://thewoodsproject.org/about/).

Data

Youth self-report data were collected via a secure survey link that youth can complete from their phones (i.e., Qualtrics) before and immediately after the TWP expedition. At each data collection point, TWP staff prompted students to complete surveys by sending a message with the survey link. Each day during scheduled data collection, UH research staff checked the survey database to ensure 1) all had been completed, and 2) been completed accurately. Youth who were missing valid surveys were identified and contacted with a request to complete the survey. If the youth were

currently on the trip with the TWP, UH staff sent a link to the designated TWP staff who helped the student complete their survey. If the youth is not with TWP at the time, UH staff attempted to contact the youth in a variety of ways (e.g., text, phone call, email, etc.) until they complete the survey or two weeks have transpired. We expect 100% survey completion during the trip and at least 90% survey completion when youth are not on trips.

Measures

Most of the items in the survey were repeated pre- and post-trip; however, demographic variables were in the pre-trip survey only, a few prospective questions about the trip were included in the pre-trip survey only, and several retrospective questions about the trip were included in the post-trip survey only such as favorite or least favorite aspects of the camping experience and things that TWP can do to improve the experience for future students.

Demographic Variables and Identifying Information

Demographic variables include date of birth, sex, language spoken at home, year in school and school attended in the past year, and prior participation in TWP activities. Students will also provide identifying information including name, email, cell number, and zip code.

Character Traits

Measures of TWP character traits were developed by the previous evaluators and used on multiple trips. Historically, the traits were measured by several items rated on a seven-point Likert scale, ranging from strongly disagree to strongly agree. In 2019, the survey of traits was shortened to one or two items for each character trait. These single

items were chosen based on the highest item-total correlation on each scale. For example, the item “I am able to overcome challenges and difficult situations” was selected for grit and perseverance (item-total correlation = .91). The other items are: “I adapt well to new situations or persons” (adaptability); “I can work independently to achieve my goals” (independence); “I can control my temper and impulses” (self-control); “I am curious and enjoy discovering new things” (zest and curiosity); “I communicate well with others” (social intelligence); “I collaborate well with others” (social intelligence); “I am good at deciding between alternatives when problem solving” (critical thinking); “I appreciate the outdoors and want to preserve nature for future generations” (environmental appreciation). This scale was measured across all four time points (T1 to T4).

Religiosity (Intrinsic & Extrinsic)

Duke University Religion Index (DUREL; Koenig et al., 1997) is a five-item measure of religiosity developed for use in large cross-sectional studies and is one of the most often used multi-item measures of religiosity available. The DUREL has been used in over 100 published studies and is available in 10 languages with the current authors helping to translate the scale into Turkish (Esat et al., 2021). The scale demonstrates high reliability (.91) and high internal consistency (Cronbach’s alpha = 0.78 – 0.91) (Koenig & Bussing, 2010). The scale was validated for adequate usage amongst 1,248 Brazilian adolescents (M = 15.09; Strelhow & Sarriera, 2018). The scale consists of two sub-dimensions; extrinsic religiosity with two items measuring the rate of attendance at places of worship (“how often do you attend church or other religious gatherings?”) and intrinsic religiosity with three items measuring personal commitment (“I try hard to carry religion into all other dealings in my life”). Only the 3-item intrinsic religiosity index was

measured at T1 (pre-intervention) and T2 (after intervention), while the 2-item extrinsic religiosity index was measured at T1.

Developmental Assets

Developmental assets (DAs) are "a set of interrelated experiences, relationships, skills, and values suggested to enhance a broad range of positive youth outcomes and are assumed to operate similarly for all youth" (Soares et al., 2019, p. 2). The Search Institute, which has been a leader in DA research for decades, has identified over 40 assets (Search Institute, 2006). Syvertsen, Scales, and Toomey (2019) performed a factor analysis of the Search Institute list of assets and found two broad factors: Internal and external. In the broad category of internal assets, specific assets were positive values, academic engagement, positive identity, and social competencies. Specific external assets were mattering and belonging, support, boundaries, and extracurricular activity participation. Based on their very large and diverse sample, Syvertsen and colleagues showed their DA measure is appropriate for use with a wide range of youth, including marginalized Black and Latinx middle school students. In this study, select DA subscales were identified as most relevant to measuring pre-and post-trip changes that are plausible on the TWP trip. The specific scales and items are given below.

Positive Identity. The following items are rated on a five-point Likert scale ranging from strongly disagree to strongly agree: On the whole, I like myself; I feel I do not have much to be proud of; At times, I think I am no good at all; I have little control over the things that will happen in my life; Sometimes I feel like my life has no purpose; and When I am an adult, I'm sure I will have a good life. This index was measured across both time points (T1 & T2).

Positive Values. The following items are rated for importance on a five-point Likert Scale ranging from not important, somewhat important, not sure, quite important, extremely important: Helping other people, Helping to make the world a better place in which to live, Giving time or money to make life better for other people, Helping to make sure that all people are treated fairly, Speaking up for equality (everyone should have the same rights and opportunities), Doing what I believe is right even if my friends make fun of me, Standing up for what I believe, even when it's unpopular to do so, Telling the truth, even when it's not easy, and Accepting responsibility for my actions when I make a mistake or get in trouble. This index was measured across both time points (T1 & T2).

Planning and Decision-Making Skills. These items are rated on a five-point scale with the anchors Not at all Like Me; A Little Like Me; Somewhat Like Me; Quite Like Me; Very Much Like Me. The items include: Thinking through the possible good and bad results of different choices before I make decisions, Being good at planning ahead, Knowing how to say "no" when someone wants me to do things I know are wrong or dangerous, and Staying away from people who might get me in trouble. This index was measured across both time points (T1 & T2).

Research Design

The study is a quasi-experimental, single group pre- to post-test design. The data analysis plan is to use pre- to post-change scores and regression analyses to look for main effects and moderating effects. Main effects are indicated if the change is significantly different than zero. In this statistical model, significant predictors correlated with change, such as R/S, are moderators indicating different levels of change associated with the moderator. Covariates (gender, race/ethnicity) will be added to a single regression

model first to control for potential confounds with R/S, thus testing for a significant unique contribution of R/S to the prediction of the amount of change in the outcome variables. Table 1 (located in appendix) provides information on key statistical analysis, assumed hypothesis and levels of significance needed. Descriptive analyses will be utilized, prior to data analyses, to determine whether significant outliers that could bias the results are present. This includes using the Shapiro-Wilk test of normality and scatter plots to check for a linear relationship between the two variables (religiosity and outcome variable used such as grit, social intelligence etc.) and homoscedasticity and using the Durbin-Watson test to check for the independence of observation (value of 2 indicating no autocorrelation). Residual errors of the regression line will also be checked to determine approximately normal distribution.

SPSS will be used after checking for linear regression assumptions to determine significant change scores (or main effects) from pre to post (T1 to T2) across the various outcome variables. Secondly, moderator analysis using linear regression will be determined to assess significant correlations between religiosity (intrinsic, extrinsic and a composite) and change scores. Specifically, a single predictor regression analysis will be performed to establish the significance of the relationship between religiosity (Independent Variable) and the outcome variable in question (social intelligence, grit, etc. as the Dependent Variable). A scatter plot function can be used to chart the plotted values along with a line of best fit along with the standardized coefficient estimate to determine correlation.

Power Analysis

For the dependent t-test G-Power with an alpha level of .05 (two-tailed) to find a medium-small effect of (d= .5) was used to determine that a sample size of 34 needed to have 80% power, and 198 would be needed for a small effect (d= .2). Thus, for the t-tests the study was adequately powered for medium effects and underpowered for small effects. Historically, the effect sizes in TWP studies examining pre-to post-change have been in the medium to large range.

For the linear multiple regression design, variables will be entered one at a time into the model to determine whether there is any statistical increase in R^2. G-Power with an alpha level of .05 estimated that the minimum sample size for a medium sized effect (f^2= .15) was 68 and the minimum sample size for a small effect (f^2= .02) was 485. Thus, this study is adequately powered to find medium sized effects, but underpowered to find small effects.

Moderators

The moderators which will be tested include religiosity measured by the DUREL scale; extrinsic religiosity sub-scale (2-item index), the intrinsic religiosity sub-scale (3-item index) and a composite religiosity (intrinsic x extrinsic). The dependent, or outcome variables, which will be assessed include 11 outcome variables; Positive Experience, Positive Identity, Positive Values, Positive Planning, Grit/Perseverance, Adaptability, Environmental Appreciation, Critical Thinking, Independence/Self-Control, Zest/Curiosity and Social Intelligence. Control variables will be included in the analyses; gender, and race/ethnicity to account for the unique relationship between religiosity and outcome variables above and beyond the control variables. Firstly, the overall mean score will be computed across the single-item indexes in T1 and T2 or before and after the

intervention and analyzed using a paired samples t-test. Thirdly, a linear regression will be formed using religiosity as the predictor and the youth development variables as the outcome while controlling for demographic variables.

Chapter IV

Results

Data cleaning procedures were enacted to ensure 100% completion on pre- and post- measures. This necessitated the removal of at least 54 students leaving a final sample of maximum 120, on certain scales, and a minimum of 109, on other scales, accounting for both pre- and post-measures. Additional data management measures prior to data analyses included creating dummy variables for gender (Male, Female, Other) and race/ethnicity (White, Black, Native, Hispanic, Asian, Other, Mixed). Frequency distributions for gender and race are provided in Table 2 and Table 3 (located in Appendix).

Demographics

Table 2 (located in appendix) demonstrates the frequency distribution for TWP students for gender separated by Male, Female, and Other. 81 students (46.6%) identified as male, 77 students (44.3%) identified as female and 16 (9.2%) as Other. 10 students left this category blank and were included in the 'Other' category. For the regression analyses, 'Male' was used as the reference dummy variable due to having the highest percentage. Table 3 demonstrates the frequency distribution for TWP students for race/ethnicity separated by White, Black, Native, Asian, Hispanic, Other, and Mixed. Hispanic students accounted for 63.8% (n = 111), Asian students accounted for 8.6% (n = 15), Black students accounted for 6.3% (n = 11), White students accounted for 2.3% (n = 4) and Mixed students accounted for 12.1% (n = 21). For the regression analyses, 'Hispanic' was used as the reference dummy variable due to having the highest percentage.

Researchers also examined percentages of students who affiliated as religious, prior to data analyses, to examine whether trend lines matched previous 2021 cohorts and was relevant (i.e., whether TWP students self-reported being religious). Frequency distributions for the 3-items of the DUREL intrinsic religiosity sub-scale, at baseline, for the 2022 cohort are provided in Table 4, Table 5, and Table 6.

Self-reported Religiosity

As shown on Tables 4-6, the majority of students self-reported as being intrinsically religious. For example, responses from item 5 suggest that approximately 70% of the TWP student cohort agree with 'carrying over their religion to other dealings in their lives'. Contrastingly, the extrinsic religiosity index had a more varied response with approximately 1/3 of students exhibiting extrinsic religious practices, 1/3 of students exhibiting low to moderate extrinsic religious practices, and 1/3 of students exhibiting high extrinsic religious practices (Tables 7 & 8).

SPSS Analyses

Data management procedures included compiling item-level scores into composite means for both pre- and post-time periods and reverse coding certain items for suitable use. Although 'remembered well-being items' were removed from the final analysis due to poor construct validity (Pemberton Happiness Index), a 'positive experience' scale was included from the original scale (5-item composite; example item: "I learned something interesting"). Scales were created for TWP character traits (7-item composite), Positive Experience (5-item composite), Positivity Identity (6-item composite), Positive Values (9-item composite), Positive Planning (4-item composite), Grit/Perseverance (7-item composite), Adaptability (7-item composite), Environmental

Appreciation (7-item composite), Critical Thinking (7-item composite), Independence/Self-Control (7-item composite), Zest/Curiosity (9-item composite) and Social Intelligence (8-item composite).

Internal consistency

Using a benchmark value of .70 for internal consistency, all but two of the sets of items had sufficient inter-item reliability to be used as scales. Cronbach's alpha for the TWP scale indicated a .92 internal consistency between the items. Cronbach's alpha for the Positive Experience scale indicated a .68 internal consistency. Cronbach's alpha for the Positive Values scale indicated a .89 internal consistency. Cronbach's alpha for the Positive Planning scale indicated a .70 internal consistency. Cronbach's alpha for the Grit/Perseverance scale indicated a .73 internal consistency. Cronbach's alpha for Adaptability indicated a .71 internal consistency. Cronbach's alpha for the Environmental Appreciate scale indicated a .81 internal consistency. Cronbach's alpha for the Critical Thinking scale indicated a .94 internal consistency. Cronbach's alpha for the Independence/Self-Control scale indicated a .56 internal consistency. Cronbach's alpha for the Zest/Curiosity scale indicated a .96 internal consistency. Cronbach's alpha for the Social Intelligence scale indicated a .96 internal consistency. The Positive Identity scale showed the lowest internal consistency with a .36 Cronbach's alpha. Because of the low reliability, the Independence/Self-Control and Positive Identity Scales were not used in subsequent analyses.

The 3-item DUREL scale measuring internal religiosity was also assessed prior to data analyses; the internal consistency demonstrated a .89 Cronbach's alpha. Contrary to the assumed hypothesis that religiosity was a stable construct that would not change

during the summer camp; DUREL scores showed a statistically significant increase from pre (M = 8.37, SD = 3.31) to post (M = 8.85, SD = 3.19); [t (109) = -2.31, p < .05]. However, the mean difference was not substantial (Cohen's d= .15), indicating religiosity (as measured by the DUREL) did not change much. Furthermore, Spearman's correlation was significant for pre and post DUREL scales with a .75 (p valued, df). This large correlation value meets the minimum standards for test-retest reliability. Because of this change, post-DUREL scores were used for the multiple regression equation.

The 2-item DUREL scale measuring extrinsic religiosity was also assessed; the internal consistency demonstrated a .869 Cronbach's alpha. This index was not assessed at post so only the baseline scores were used for purposes of the regression analyses. The extrinsic religiosity subscale had significant correlations with the intrinsic religiosity composite (p < .01). Our first regression analyses utilized co-variates and the composite 3-item intrinsic religiosity index on all outcome variables. Our second regression analysis utilized co-variates and the composite 2-item extrinsic religiosity index on all outcome variables. Our third regression analysis utilized co-variates and an interaction variable with both intrinsic and extrinsic religiosity indexes included.

Research Findings

Hypothesis Tests: Main Effects for TWP Intervention

Pre-Post Changes for TWP. Results from our first hypothesis which predicted statistically significant change scores across 12 variables (TWP, Positive Experience, Positive Identity, Positive Values, Positive Planning, Grit/Perseverance. Adaptability, Environmental Appreciation, Critical Thinking, Independence/Self-Control, Zest/Curiosity and Social Intelligence) are documented in Table 9.

First variable is the TWP scale which was designed by TWP to assess for character strengths, an example item is “during the past two week, I was able to overcome challenges and difficult situations” with students endorsing each item from 1 or ‘Strongly Disagree’ to 7 or ‘Strongly Agree.’ A paired samples t-test was conducted to determine the effect of TWP on self-reported TWP scores. The results indicate a significant change between TWP scores before students began TWP (M = 5.24, SD = 1.16) and TWP scores after students finished TWP (M = 6.53, SD = .520); [t(119) = -12.13, p <.001]. This demonstrates that, overall, students’ positive perception of their abilities including leadership and teamwork increased due to their involvement in TWP,

Pre-Post Changes for Positive Experiences. Second variable is the Positive Experience scale, a 5-item subscale that was aggregated from the broader 21-item Pemberton Happiness Index. An example item is “(during the past two weeks) Something I did made me proud.” A paired samples t-test was conducted to determine the effect of TWP on self-reported positive experience scores. The results indicate a significant change between positive experience scores before students began TWP (M = .717, SD = .294) and positive experience scores after TWP (M = .936, SD = .164); [t(115) = -8.06, p <.001]. This indicates that, overall, students viewed the TWP trip as a positive experience for themselves.

Pre-Post Changes for Positive Values. Third variable is the Positive Values scale which assesses moral qualities, an example item is “standing up for what I believe, even when it’s unpopular to do so” with students endorsing each item from 1 or ‘not at all important’ to 5 or ‘extremely important’. A Paired samples t-test was conducted to determine the effect of TWP on self-reported student positive values scores. The results

indicate a significant difference between positive values score before students began TWP (M=4.19; SD=.594) and positive vales score after TWP (M=4.36; SD=.602); [t(112) = -3.35, p < .001]. This indicates that, overall, students' positive values increased due to their involvement in TWP.

Pre-Post Changes for Positive Identity. Fourth variable is the Positive Identity scale which assesses for self-esteem and belief in oneself, an example item is "on the whole, I like myself" with students endorsing each item from 1 or 'Strongly Disagree' to 5 or 'Strongly Agree', 3-items were reverse coded in creating the composite for this scale. A Paired samples t-test was conducted to determine the effect of TWP on self-reported student positive identity scores. The results do not indicate a significant increase between positive identity scores before students began TWP (M=2.98; SD=.510) and positive identity scores after TWP (M=2.88; SD=.509); [t(114) = 1.98, p = 0.0.25]. This indicates that, overall, students self-esteem and positive identification did not change due to TWP.

Pre-Post Changes for Positive Planning. Fifth variable is the Positive Planning scale which assesses for decision-making, an example item is "knowing when to say 'no' when someone wants me to do things I know are wrong or dangerous" with students endorsing each item from 1 or 'not at all like me' to 5 or 'very much like me.' A Paired samples t-test was conducted to determine the effect of TWP on self-reported student positive planning scores. The results indicate a significant increase between positive planning score before students began TWP (M=3.92; SD=.739) and planning scores after TWP (M=4.09; SD=.719); [t(111) = -2.46, p < .05]. This indicates that, overall, students positive decision-making abilities increased due to their involvement in TWP.

Pre-Post Changes for Grit/Perseverance. Sixth variable is the Grit/Perseverance scale which assesses for resilience, an example item is "during the past two weeks, I bounced back from disappointments or failures" with students endorsing each item from 1 or 'Strongly Disagree' to 7 or 'Strongly Agree', 3 items were reverse coded in creating the composite for this scale. A Paired samples t-test was conducted to determine the effect of TWP on self-reported student grit/perseverance scores. The results indicate a significant increase between grit/perseverance score before students began TWP (M=4.52; SD=.1.02) and grit/perseverance scores after TWP (M=4.80; SD=.82); [$t(109) = -2.48$, $p < .05$]. This indicates that, overall, students ability to persevere increased due to their involvement in TWP.

Pre-Post Changes for Adaptability. Seventh variable is the Adaptability scale which assesses for ability to adjust and adapt to change, an example item is "during the past two weeks, I adjusted my behavior to meet the requirements of situations I was in" with students endorsing each item from 1 or 'Strongly Disagree' to 7 or 'Strongly Agree', 2 items were reverse coded in creating the composite for this scale. A Paired samples t-test was conducted to determine the effect of TWP on self-reported student adaptability scores. The results indicate a significant increase between adaptability scores before students began TWP (M=3.92; SD=.739) and adaptability scores after TWP (M=4.09; SD=.719); [$t(111) = -2.46$, $p < .05$]. This indicates that, overall, students ability to adapt and adjust increased due to their involvement in TWP.

Pre-Post Changes for Environmental Appreciation. Eighth variable is the Environmental Appreciation scale which assesses for students belongingness and appreciation for nature, an example item is "during the past two weeks, I thought it was

important to preserve or take care of wilderness areas", 1 item was reverse coded in creating the composite for this scale. A Paired samples t-test was conducted to determine the effect of TWP on self-reported student environmental appreciation scores. The results indicate a significant increase between environmental appreciation score before students began TWP (M=5.26; SD=1.05) and environmental appreciation scores after TWP (M=6.28; SD=.885); [$t(104) = -9.33$, $p < .001$]. This indicates that, overall, students appreciation of nature and caring for the environment increased due to their involvement in TWP,

Pre-Post Changes for Critical Thinking. Ninth variable is the Critical Thinking scale which assesses for student problem-solving and cognitive skills, an example item is "during the past two weeks, I was good at generating solutions to problems". A Paired samples t-test was conducted to determine the effect of TWP on self-reported student critical thinking scores. The results indicate a significant increase between critical thinking scores before students began TWP (M=5.44; SD=1.13) and critical thinking scores after TWP (M=6.06; SD=.940); [$t(104) = -5.75$, $p < .001$]. This indicates that, overall, students problem-solving and cognitive abilities increased due to their involvement in TWP.

Pre-Post Changes for Independence/Self-Control. Tenth variable is the Independence/Self-Control scale which assesses for student emotional and behavioral management and delayed gratification, an example item is "during the past two weeks, I was able to control my anger", 2 items were reverse coded in creating the composite for this scale. A Paired samples t-test was conducted to determine the effect of TWP on self-reported student independence/self-control scores. The results indicate a significant

increase between independence/self-control scores before students began TWP (M=4.960; SD=.676) and independence/self-control scores after TWP (M=5.14; SD=.577); [t(104) = -2.30, p < .05]. This indicates that, overall, student self-control increased due to their involvement in TWP.

Pre-Post Changes for Zest/Curiosity. Eleventh variable is the Zest/Curiosity scale which assesses for student curiosity in exploring novel situations, an example item is "during the past two weeks, I felt curious about many things" with students endorsing each item from 1 or 'Strongly Disagree' to 7 or 'Strongly Agree.' A Paired samples t-test was conducted to determine the effect of TWP on self-reported student zest/curiosity scores. The results indicate a significant difference between zest/curiosity scores before students began TWP (M=5.63; SD=1.183) and zest/curiosity scores after TWP (M=6.35; SD=.873); [t(104) = -6.43, p < .001]. This indicates that, overall, students' sense of curiosity and exploration increased due to their involvement in TWP.

Pre-Post Changes for Social Intelligence. Twelfth variable is the Social Intelligence scale which assesses for ability to perspective take and cooperate with others, an example item is "in the past two weeks, I understood how my words or actions made other people feel" with students endorsing each item from 1 or 'Strongly Disagree' to 7 or 'Strongly Agree', A Paired samples t-test was conducted to determine the effect of TWP on self-reported student social intelligence scores. The results indicate a significant difference between social intelligence scores before students began TWP (M=5.602; SD=1.12) and social intelligence scores after TWP (M=6.359; SD=.800); [t(104) = -7.10, p < .001]. This indicates that, overall, students' perspective-taking and interpersonal abilities increased due to TWP.

Hypotheses Tests: Religion as a Moderator – Intrinsic Religiosity

Due to the indifferent change in Positive Identity pre- and post-scores, the change score was not analyzed for the multiple regression (11 variables were assessed in the regression equations). The change score for each variable was computed by subtracting the Pre-intervention mean scores from the post-intervention mean scores and using that value as the dependent variable in the regression equation. Co-variates were entered into the first regression block (gender, race/ethnicity) with 'Hispanic' and 'Male' being used as the reference race/ethnicity and gender variable due to their total percentage being larger as compared to the other race/ethnicity and gender dummy variables. In the second regression block, co-variates along with the post-DUREL composite were entered (for intrinsic religiosity). Post-SPSS analyses, R value which represents the simple correlation between the predictors and outcome variable (change score for each variable) was assessed, along with R square change which indicates how much a predictor can explain the variance in another variable and significant levels. Significant F change was used to determine whether the two blocks were statistically significant (<.05). If the regression was found to be significant, coefficient values including Beta and corresponding significance levels were also assessed.

TWP. Multiple regression analyses were used to test if self-reported religiosity (as measured by the DUREL) significantly predicted change in students TWP scores. The results of the regression indicated the predictor with co-variates of age, gender and race/ethnicity did not significantly predict the change in student TWP scores ($R^2 = .047$, $F (3, 110) = 1.81$, $p > .05$), although race/ethnicity was significant ($\beta = -.396$, $p < .05$) indicating that Hispanic students (reference group) demonstrated less growth on TWP

scores, as compared to students of other ethnicities. Adding the DUREL score did significantly predict the change in student TWP score ($R^2 = .08$, $F (1, 109) = 3.96$, $p < .05$) and increased the R^2 value by 3.3%. Religiosity significantly predicted the change in TWP scores ($\beta = -.187$, $p < .05$), above co-variates of age ($\beta = -.065$, $p > .05$), race/ethnicity ($\beta = -.167$, $p > .05$) and gender ($\beta = .093$, $p > .05$). This finding suggests that the level of religiosity was inversely related to the amount of change during the two-week camp, suggesting that more religious students demonstrated less growth in the TWP scale, as compared to less religious students.

Positive Experience. Multiple regression analyses was used to test if self-reported religiosity (as measured by the DUREL) significantly predicted change in students Positive Experience scores. The results of the regression indicated the predictor with co-variates of age, gender and race/ethnicity did not significantly predict the change in student TWP scores ($R^2 = .018$, $F (3, 109) = .683$, $p > .05$), Adding the DUREL score did not significantly predict the change in student Positive Experience score ($R^2 = .019$, $F (1, 108) = .068$, $p > .05$) and increased the R^2 value by almost 0.2 ((R^2 change)(1- R^2 change). These findings suggest that race/ethnicity, gender, age and self-reported religiosity do not have a significant impact on students Positive Experience score after TWP. Using G*Power to calculate statistical power post hoc (change in R^2 of .018, n= 108, $p<.05$, and 4 predictors, with one increase), this study only had 29% power to find an effect this small. Unfortunately, this study was underpowered to detect small effects (Cohen, 1992).

Positive Values. Multiple regression analyses was used to test if self-reported religiosity (as measured by the DUREL) significantly predicted change in students'

Positive Values scores. The results of the regression indicated the predictor with co-variates of age, gender, and race/ethnicity did not significantly predict the change in student Positive Values scores (R^2 = .027, F (3, 107) = .987, p > .05), Adding the DUREL score did not significantly predict the change in student Positive Values score (R^2 = .029, F (1, 106) = .209, p > .05) and increased the R^2 value by 0.2%. These findings suggest that race/ethnicity, gender, age and self-reported religiosity do not have a significant impact on students Positive Values score after TWP.

Positive Planning. Multiple regression analyses was used to test if self-reported religiosity (as measured by the DUREL) significantly predicted change in students Positive Planning scores. The results of the regression indicated the predictor with co-variates of age, gender, and race/ethnicity did not significantly predict the change in student Positive Values scores (R^2 = .014, F (3, 107) = .502, p > .05), Adding the DUREL score did not significantly predict the change in student Positive Values score (R^2 = .038, F (1, 106) = 2.684, p > .05) and increased the R^2 value by 2.4%. These findings suggest that race/ethnicity, gender, and self-reported religiosity do not have a significant impact on students' Positive Values scores after TWP. However, self-reported religiosity did effect change scores in a positive direction (β = .037, p = .104).

Grit/Perseverance (G/P). Multiple regression analyses was used to test if self-reported religiosity (as measured by the DUREL) significantly predicted change in students G/P scores. The results of the regression indicated the predictor with co-variates of age, gender, and race/ethnicity did not significantly predict the change in student TWP scores (R^2 = .002, F (3, 105) = .075, p > .05. Adding the DUREL score did not significantly predict the change in student TWP score (R^2 = .192, F (1, 104) = 3.749, p <

.05) and increased the R^2 value by 3.5%. Although religiosity was close to cut-off and effected change in a positive direction ($\beta = .073$, $p = .056$) indicating that religious students demonstrated more growth in G/P, as compared to less religious students.

Adaptability. Multiple regression analyses was used to test if self-reported religiosity (as measured by the DUREL) significantly predicted change in students Adaptability scores. The results of the regression indicated the predictor with co-variates of age, gender and race/ethnicity did not significantly predict the change in student Adaptability scores ($R^2 = .010$, $F (3, 105) = .342$, $p > .05$), Adding the DUREL score did not significantly predict the change in student Adaptability score ($R^2 = .011$, $F (1, 104) = .102$, $p > .05$) and increased the R^2 value by 0.1%. These findings suggest that race/ethnicity, gender, age and self-reported religiosity do not have a significant impact on students Adaptability score after TWP.

Environmental Appreciation (EA). Multiple regression analyses was used to test if self-reported religiosity (as measured by the DUREL) significantly predicted change in students' EA scores. The results of the regression indicated the predictor with co-variates of age, gender and race/ethnicity did not significantly predict the change in student EA scores ($R^2 = -.026$, $F (3, 101) = .119$, $p > .05$), Adding the DUREL score did not significantly predict the change in student EA score ($R^2 = -.021$, $F (1, 100) = 1.493$, $p > .05$) and increased the R^2 value by 1.5%. These findings suggest that race/ethnicity, gender, age and self-reported religiosity do not have a significant impact on students EA score after TWP. Although, self-reported religiosity did effect change scores in a positive direction ($\beta = .047$, $p = .225$).

Critical Thinking (CT). Multiple regression analyses was used to test if self-reported religiosity (as measured by the DUREL) significantly predicted change in students' CT scores. The results of the regression indicated the predictor with co-variates of age, gender and race/ethnicity did not significantly predict the change in student CT scores (R^2 = -.023, F (3, 101) = .226, p > .05), Adding the DUREL score did not significantly predict the change in student CT score (R^2 = -.029, F (1, 100) = .421, p > .05) and increased the R^2 value by 0.4%. These findings suggest that race/ethnicity, gender, age and self-reported religiosity do not have a significant impact on students CT score after TWP. However, self-reported religiosity did effect change scores in a positive direction (β = .024, p = .518).

Independence/Self-Control (ISC). Multiple regression analyses was used to test if self-reported religiosity (as measured by the DUREL) significantly predicted change in students ISC scores. The results of the regression indicated the predictor with co-variates of gender, and race/ethnicity did not significantly predict the change in student ISC scores (R^2 = .038, F (3, 98) = 2.315, p > .05), although race/ethnicity was significant (β = -.342, p < .05) indicating that Hispanic students (reference group) demonstrated less growth in ISC, as compared to other students. Adding the DUREL score did not significantly predict the change in student ISC score (R^2 = .060, F (1, 97) = 3.30, p < .05) and increased the R^2 value by 3.1%. However, religiosity was close to cut-off and effected change in a positive direction (β = .044, p = .071) indicating that religious students demonstrated more growth in ISC, as compared to less religious students.

Zest/Curiosity (Z/C). Multiple regression analyses was used to test if self-reported religiosity (as measured by the DUREL) significantly predicted change in

students' Z/C scores. The results of the regression indicated the predictor with co-variates of age, gender and race/ethnicity did not significantly predict the change in student Positive Values scores (R^2 = -.014, F (3, 98) = .528, p > .05), Adding the DUREL score did not significantly predict the change in student Z/C score (R2 = -.024, F (1, 97) = .089, p > .05) and increased the R^2 value by 0.1%. These findings suggest that race/ethnicity, gender, and self-reported religiosity do not have a significant impact on students Z/C score after TWP.

Social Intelligence (SI). Multiple regression analyses was used to test if self-reported religiosity (as measured by the DUREL) significantly predicted change in students' SI scores. The results of the regression indicated the predictor with co-variates of age, gender and race/ethnicity did not significantly predict the change in student SI scores (R^2 = -.021, F (3, 98) = .320, p > .05), Adding the DUREL score did not significantly predict the change in student SI score (R^2 = -.030, F (1, 97) = .125, p > .05) and increased the R^2 value by 0.1%. These findings suggest that race/ethnicity, gender, age and self-reported religiosity do not have a significant impact on students' SI score after TWP.

Hypotheses Tests*: *Religion as a Moderator – Extrinsic Religiosity

Due to the indifferent change in Positive Identity pre and post scores, the change score was not analyzed for the multiple regression (11 variables were assessed in the regression equations). The change score for each variable was computed by subtracting the Pre-intervention mean scores from the Post-intervention mean scores and using that value as the dependent variable in the regression equation. Co-variates were entered into the first regression block (gender, race/ethnicity, age) with 'Hispanic' and 'Male' being

used as the reference race/ethnicity and gender variable due to their total percentage being larger as compared to the other race/ethnicity and gender dummy variables. In the second regression block, co-variates along with the pre-DUREL composite were entered (extrinsic religiosity). Post-SPSS analyses, R value which represents the simple correlation between the predictors and outcome variable (change score for each variable) was assessed, along with R square change which indicates how much a predictor can explain the variance in another variable and significant levels. Significant F change was used to determine whether the two blocks were statistically significant (<.05). If the regression was found to be significant, coefficient values including Beta and corresponding significance levels were also assessed.

TWP. Multiple regression analyses was used to test if self-reported extrinsic religiosity (as measured by the DUREL) significantly predicted change in students TWP scores. The results of the regression indicated the predictor with co-variates of age, gender and race/ethnicity did not significantly predict the change in student TWP scores (R^2 = .043, F (3, 114) = 1.70, p > .05), although race/ethnicity was significant (β = *-.378, p < .05)* indicating that Hispanic students (reference group) demonstrated less growth on TWP scores, as compared to students of other ethnicities. Adding the DUREL score did not significantly predict the change in student TWP score (R^2 = .043, F (1, 113) = 1.268, p > .05) and did not increase the R^2 value. Similar to the intrinsic religiosity regression analyses, Hispanic students tended to perform worse on this index, suggesting that the effect held for extrinsic religiosity as well.

Positive Experience. Multiple regression analyses was used to test if self-reported religiosity (as measured by the DUREL) significantly predicted change in

students Positive Experience scores. The results of the regression indicated the predictor with co-variates of age, gender and race/ethnicity did not significantly predict the change in student TWP scores (R^2 = .028, F (3, 111) = 1.085, p > .05), Adding the DUREL score did not significantly predict the change in student Positive Experience score (R^2 = .058, F (1, 110) = 1.684, p > .05) and increased the R^2 value by 2.9%. These findings suggest that race/ethnicity, gender, age and self-reported religiosity do not have a significant impact on students Positive Experience score after TWP, although extrinsic religiosity did effect change scores in a negative direction (β = -.053, p = .067). This indicates that more religious students demonstrated less positive experiences, as compared to less religious students.

Positive Values. Multiple regression analyses was used to test if self-reported religiosity (as measured by the DUREL) significantly predicted change in students Positive Values scores. The results of the regression indicated the predictor with co-variates of age, gender and race/ethnicity did not significantly predict the change in student Positive Values scores (R^2 = .028, F (3, 109) = 1.064, p > .05), Adding the DUREL score did not significantly predict the change in student Positive Values score (R^2 = .057, F (1, 108) = 1.618, p > .05) and increased the R^2 value by 2.8%. These findings suggest that race/ethnicity, gender, age and self-reported religiosity do not have a significant impact on students Positive Values score after TWP, although extrinsic religiosity did effect scores in a negative direction (β = -.028, p = .076). This indicates that more religious students demonstrated less positive values, as compared to less religious students.

Positive Planning. Multiple regression analyses was used to test if self-reported religiosity (as measured by the DUREL) significantly predicted change in students Positive Planning scores. The results of the regression indicated the predictor with co-variates of age, gender and race/ethnicity did not significantly predict the change in student Positive Values scores (R^2 = .010, F (3, 108) = .356, p > .05), Adding the DUREL score did not significantly predict the change in student Positive Values score (R^2 = .023, F (1, 107) = .624, p > .05). These findings suggest that race/ethnicity, gender, age and self-reported religiosity do not have a significant impact on students Positive Planning score after TWP.

Grit/Perseverance (G/P). Multiple regression analyses was used to test if self-reported religiosity (as measured by the DUREL) significantly predicted change in students G/P scores. The results of the regression indicated the predictor with co-variates of age, gender and race/ethnicity did not significantly predict the change in student TWP scores (R^2 = .003, F (3, 105) = .119, p > .05. Adding the DUREL score did not significantly predict the change in student TWP score (R^2 = .013, F (1, 104) = .349, p < .05). These findings suggest that race/ethnicity, gender, age and self-reported religiosity do not have a significant impact on students Grit/Perseverance score after TWP.

Adaptability. Multiple regression analyses was used to test if self-reported religiosity (as measured by the DUREL) significantly predicted change in students Adaptability scores. The results of the regression indicated the predictor with co-variates of age, gender and race/ethnicity did not significantly predict the change in student Adaptability scores (R^2 = .013, F (3, 105) = .476, p > .05), Adding the DUREL score did not significantly predict the change in student Adaptability score (R^2 = .014, F (1, 104) =

.382, p > .05). These findings suggest that race/ethnicity, gender, age and self-reported religiosity do not have a significant impact on students Adaptability score after TWP.

Environmental Appreciation (EA). Multiple regression analyses was used to test if self-reported religiosity (as measured by the DUREL) significantly predicted change in students EA scores. The results of the regression indicated the predictor with co-variates of age, gender and race/ethnicity did not significantly predict the change in student EA scores (R^2 = -.003, F (3, 101) = .107, p > .05), Adding the DUREL score did not significantly predict the change in student EA score (R^2 = .007 F (1, 100) = .172, p > .05). These findings suggest that race/ethnicity, gender, age and self-reported religiosity do not have a significant impact on students EA score after TWP.

Critical Thinking (CT). Multiple regression analyses was used to test if self-reported religiosity (as measured by the DUREL) significantly predicted change in students CT scores. The results of the regression indicated the predictor with co-variates of age, gender and race/ethnicity did not significantly predict the change in student CT scores (R^2 = .008, F (3, 101) = .278, p > .05), Adding the DUREL score did not significantly predict the change in student CT score (R^2 = .008, F (1, 100) = .207, p > .05). These findings suggest that race/ethnicity, gender, age and self-reported religiosity do not have a significant impact on students CT score after TWP.

Independence/Self-Control (ISC). Multiple regression analyses was used to test if self-reported religiosity (as measured by the DUREL) significantly predicted change in students ISC scores. The results of the regression indicated the predictor with co-variates of age, gender and race/ethnicity did significantly predict the change in student ISC scores (R^2 = .082, F (3, 101) = 3.003, p < .05), with race/ethnicity being a significant

predictor (β = -.325, p < .05) indicating that Hispanic students (reference group) demonstrated less growth in ISC, as compared to other students. Adding the DUREL score did significantly predict the change in student ISC score (R^2 = .117, F (1, 100) = 3.30, p < .05) and increased the R^2 value by 3.5%. The scores were in a positive direction (β = .045, p = .050) indicating that religious students performed better on this domain, as compared to less religious students.

Zest/Curiosity (Z/C). Multiple regression analyses was used to test if self-reported religiosity (as measured by the DUREL) significantly predicted change in students Z/C scores. The results of the regression indicated the predictor with co-variates of age, gender and race/ethnicity did not significantly predict the change in student Positive Values scores (R^2 = -.021, F (3, 101) = .736, p > .05), Adding the DUREL score did not significantly predict the change in student Z/C score (R^2 = .022, F (1, 100) = .556, p > .05). These findings suggest that race/ethnicity, gender, age and self-reported religiosity do not have a significant impact on students Z/C score after TWP.

Social Intelligence (SI). Multiple regression analyses was used to test if self-reported religiosity (as measured by the DUREL) significantly predicted change in students SI scores. The results of the regression indicated the predictor with co-variates of age, gender and race/ethnicity did not significantly predict the change in student SI scores (R^2 = .010, F (3, 101) = .355, p > .05), Adding the DUREL score did not significantly predict the change in student SI score (R^2 = .013, F (1, 100) = .329, p > .05) and increased the R^2 value by 0.3%. These findings suggest that race/ethnicity, gender, age and self-reported religiosity do not have a significant impact on students SI score after TWP.

Hypotheses Tests: Religion as a Moderator – Interaction Variable

Due to the non-significant change in Positive Identity pre and post-scores, the change score was not analyzed for the multiple regression (i.e., 11 variables were assessed in the regression equations). The change score for each variable was computed by subtracting the Pre-intervention mean scores from the post-intervention mean scores and using that value as the dependent variable in the regression equation. Co-variates were entered into the first regression block (gender, race/ethnicity, age) with 'Hispanic' and 'Male' being used as the reference race/ethnicity and gender variable due to their total percentage being larger as compared to the other race/ethnicity and gender dummy variables. In the second regression block, co-variates along with the DUREL interaction term were entered. This composite variable used the 3-item intrinsic DUREL index multiplied with the 2-item extrinsic DUREL index. Post-SPSS analyses, R value which represents the simple correlation between the predictors and outcome variable (change score for each variable) was assessed, along with R square change which indicates how much a predictor can explain the variance in another variable and significant levels. Significant F change was used to determine whether the two blocks were statistically significant (<.05). If the regression was found to be significant, coefficient values including Beta and corresponding significance levels were also assessed.

TWP. Multiple regression analyses was used to test if self-reported religiosity (as measured by the DUREL composite variable) significantly predicted change in students' TWP scores. The results of the regression indicated the predictor with co-variates of age, gender, and race/ethnicity did not significantly predict the change in student TWP scores ($R^2 = .042$, $F (3, 109) = 1.58$, $p > .05$), although race/ethnicity was near significance ($\beta =$

-.075, p = .051) indicating that Hispanic students (reference group) demonstrated less growth on TWP scores, as compared to students of other ethnicities. Adding the DUREL score did not significantly predict the change in student TWP score (R^2 = .049, F (1, 108) = 1.38, p > .05) and increased the R^2 value by 0.7%. Similar to the intrinsic and extrinsic religiosity regression analyses, Hispanic students tended to perform worse on this index, regardless of religiosity.

Positive Experience. Multiple regression analyses was used to test if self-reported religiosity (as measured by the DUREL composite variable) significantly predicted change in students' Positive Experience scores. The results of the regression indicated the predictor with co-variates of age, gender, and race/ethnicity did not significantly predict the change in student TWP scores (R^2 = .026, F (3, 109) = .985, p > .05), Adding the DUREL score did not significantly predict the change in student Positive Experience score (R^2 = .041, F (1, 108) = 1.164, p > .05) and increased the R^2 value by 1.5%. These findings suggest that race/ethnicity, gender, age and self-reported religiosity do not have a significant impact on students Positive Experience score after TWP.

Positive Values. Multiple regression analyses was used to test if self-reported religiosity (as measured by the DUREL composite variable) significantly predicted change in students' Positive Values scores. The results of the regression indicated the predictor with co-variates of age, gender' and race/ethnicity did not significantly predict the change in student Positive Values scores (R^2 = .031, F (3, 107) = 1.147, p > .05), Adding the DUREL score did not significantly predict the change in student Positive Values score (R^2 = .051, F (1, 106) = 1.417, p > .05) and increased the R^2 value by 2%.

These findings suggest that race/ethnicity, gender, age, and self-reported religiosity do not have a significant impact on students' Positive Values scores after TWP.

Positive Planning. Multiple regression analyses was used to test if self-reported religiosity (as measured by the DUREL composite variable) significantly predicted change in students' Positive Planning scores. The results of the regression indicated the predictor with co-variates of age, gender, and race/ethnicity did not significantly predict the change in student Positive Values scores ($R^2 = .011$, $F (3, 107) = .409$, $p > .05$), Adding the DUREL score did not significantly predict the change in students' Positive Values score ($R^2 = .035$, $F (1, 106) = .9734$, $p > .05$). These findings suggest that race/ethnicity, gender, age and self-reported religiosity do not have a significant impact on students' Positive Planning score after TWP.

Grit/Perseverance (G/P). Multiple regression analyses was used to test if self-reported religiosity (as measured by the DUREL composite variable) significantly predicted change in students' G/P scores. The results of the regression indicated the predictor with co-variates of age, gender, and race/ethnicity did not significantly predict the change in student TWP scores ($R^2 = .003$, $F (3, 105) = .119$, $p > .05$. Adding the DUREL score did not significantly predict the change in student TWP score ($R^2 = .039$, $F (1, 104) = 1.053$, $p < .05$), although the value was near significance at $p = .053$. These findings suggest that race/ethnicity, gender, age, and self-reported religiosity do not have a significant impact on students' Grit/Perseverance scores after TWP, although adding the DUREL contributed 3.6% variance in a positive direction suggesting that students who are both intrinsically and extrinsically religious increased more in their Grit/Perseverance, as compared to less religious students.

Adaptability. Multiple regression analyses was used to test if self-reported religiosity (as measured by the DUREL composite variable) significantly predicted change in students' Adaptability scores. The results of the regression indicated the predictor with co-variates of age, gender, and race/ethnicity did not significantly predict the change in students' Adaptability scores (R^2 = .013, F (3, 105) = .476, p > .05), Adding the DUREL score did not significantly predict the change in student Adaptability score (R^2 = .013, F (1, 104) = .354, p > .05). These findings suggest that race/ethnicity, gender, age and self-reported religiosity do not have a significant impact on students Adaptability score after TWP.

Environmental Appreciation (EA). Multiple regression analyses was used to test if self-reported religiosity (as measured by the DUREL composite variable) significantly predicted change in students EA scores. The results of the regression indicated the predictor with co-variates of age, gender and race/ethnicity did not significantly predict the change in student EA scores (R^2 = -.003, F (3, 101) = .107, p > .05), Adding the DUREL score did not significantly predict the change in student EA score (R^2 = .022 F (1, 100) = .565, p > .05). These findings suggest that race/ethnicity, gender, age and self-reported religiosity do not have a significant impact on students' EA scores after TWP.

Critical Thinking (CT). Multiple regression analyses was used to test if self-reported religiosity (as measured by the DUREL composite variable) significantly predicted change in students' CT scores. The results of the regression indicated the predictor with co-variates of age, gender, and race/ethnicity did not significantly predict the change in student CT scores (R^2 = .008, F (3, 101) = .278, p > .05), Adding the

DUREL score did not significantly predict the change in student CT score (R^2 = .011, F (1, 100) = .287, p > .05). These findings suggest that race/ethnicity, gender, age and self-reported religiosity do not have a significant impact on students CT score after TWP.

Independence/Self-Control (ISC). Multiple regression analyses was used to test if self-reported religiosity (as measured by the DUREL composite variable) significantly predicted change in students' ISC scores. The results of the regression indicated the predictor with co-variates of age, gender, and race/ethnicity did significantly predict the changes in student ISC scores (R^2 = .082, F (3, 101) = 3.003, p < .05), with race/ethnicity being a significant predictor (β = -.325, p < .05) indicating that Hispanic students (reference group) demonstrated less growth in ISC, as compared to other students. Adding the DUREL score did significantly predict the change in student ISC score (R2 = .297, F (1, 100) = 3.71, p < .05) and increased the R^2 value by 4.7%. The scores were in a positive direction (β = .221, p = .022) indicating that religious students performed better on this domain, as compared to less religious students. Significant scores for race/ethnicity held after the DUREL was included (β = -.226, p = .018), as well as gender (β = .198, p = .038), although the two were in opposite directions suggesting that female students tended to perform worse as compared to male students.

Zest/Curiosity (Z/C). Multiple regression analyses was used to test if self-reported religiosity (as measured by the DUREL composite variable) significantly predicted change in students' Z/C scores. The results of the regression indicated the predictor with co-variates of age, gender, and race/ethnicity did not significantly predict the change in student Positive Values scores (R^2 = -.021, F (3, 101) = .736, p > .05), Adding the DUREL score did not significantly predict the change in student Z/C score

(R^2 = .025, F (1, 100) = .649, p > .05). These findings suggest that race/ethnicity, gender, age and self-reported religiosity do not have a significant impact on students' Z/C score after TWP.

Social Intelligence (SI). Multiple regression analyses was used to test if self-reported religiosity (as measured by the DUREL composite variable) significantly predicted change in students' SI scores. The results of the regression indicated the predictor with co-variates of age, gender, and race/ethnicity did not significantly predict the change in student SI scores (R^2 = .010, F (3, 101) = .355, p > .05), Adding the DUREL score did not significantly predict the change in student SI score (R^2 = .021, F (1, 100) = .529, p > .05) and increased the R^2 value by 1.1%. These findings suggest that race/ethnicity, gender, age, and self-reported religiosity do not have a significant impact on students' SI scores after TWP.

Implications

Main Effects for TWP Intervention

Our first hypothesis assuming pre-post changes for all outcome variables was met, as every variable that was internally consistent was statistically significant indicating that most students benefitted from engaging in TWP as related to facilitating character strengths, socioemotional, and leadership skills. These trends are concurrent with previous cohorts from TWP who demonstrated increased growth on scales immediately after undergoing a wilderness experience/trip.

Intrinsic Religiosity as a Moderator

Our second hypothesis was that self-reported intrinsic religiosity as measured by the DUREL would have significant correlations with all outcome variables which

indicates that religious/spiritual students demonstrate more positive growth on character domains was not met. More specifically, there was one only one significant effect of the DUREL, which was on TWP. However, whereas the literature review suggested that religiosity may be correlated with positive change in summer camp, in this analysis DUREL scores and change on the TWP scale was negatively correlated.

There were notable positive trends on 3 of the 10 outcome variables (excluding Positive Identity which was not analyzed) for Positive Planning, Grit/Perseverance and Independence/Self-Control with self-reported religiosity contributing 2.4% of variance for Positive Planning, 3.5% of variance for Grit/Perseverance and 3.1% for Independence/Self-Control. Although these were not significant, this suggests that religiosity/spirituality is a construct that may have a small effect on some student's scores during an intense two-week-long wilderness experiences. The small moderating effect may have been due to the 2-week interval of the TWP; although students reported high intrinsic religiosity, there may not have been sufficient supports, time or structure to detect its effect over a short period of time. It is also possible that the TWP trip experience is so powerful in its main effects that there is little room for moderation from variables such as religiosity.

Extrinsic Religiosity as a Moderator

Our initial hypothesis that self-reported student extrinsic religiosity as measured by the DUREL would have significant correlations with all outcome variables which indicates that religious/spiritual students demonstrate more positive growth on character domains was not met. More specifically, there was one only one significant effect of the DUREL on Independence/Self-Control scores, increasing the R^2 value by 3.5%.

Contrastingly, there were notable negative trends on 2 of the 11 outcome variables (excluding Positive Identity which was not analyzed) for Positive Experiences and Positive Values with self-reported religiosity contributing 2.9% of variance for Positive Experiences and 2.8% for Positive Values. Although these were not significant, this suggests that religiosity/spirituality is a multi-dimensional construct which had small effects on the measured outcomes and positively or negatively influenced certain students. Importantly, there was a wider variety of students who reported themselves as being less extrinsically religious (40-45%), in comparison to intrinsically religious (70%), which overcomes some of the restriction in variability seen with intrinsic religiosity.

Religiosity (Intrinsic & Extrinsic) as a Moderator

Our initial hypothesis that self-reported student religiosity as measured by the DUREL would have significant correlations with all outcome variables, which indicates that religious/spiritual students demonstrate more positive growth on character domains, was not met. There was one only one significant effect of the DUREL on Independence/Self-Control (ISC) scores, increasing the R^2 value by 4.7%. There was also a notable positive trend on Grit/Perseverance domain with self-reported religiosity contributing 3.6% of the variance ($p = .053$). Other moderators were that Hispanic students showed less growth on TWP ($\beta = -.075$, $p = .051$) and ISC domains ($\beta = -.325$, $p < .05$), with had less growth than males on the ISC domain ($\beta = .198$, $p = .038$). These findings suggest that moderators had few significant effects on the pre-to post-camp variables measured in this study. The small, non-significant effects trended in a variety of directions.

Taken together, this magnitude of effects suggests that religiosity/spirituality is not a major moderator of outcomes measures before and after the intensive two-week long TWP wilderness trip. The study was underpowered to find small effects, so examination of trends might be considered. Given that the trends varied might mean that religiosity/spirituality is a multi-dimensional construct with varied effects on the measures. The variability was higher when separated as extrinsic/intrinsic religiosity then when they were included together. Most previous research has lumped religiosity as a single-item index so these discrepant findings denote that future researchers may want to examine intrinsic and extrinsic religiosity separately.

Chapter V:

Discussion

This study was designed to test whether specific trends in students' religiosity would notably influence targeted outcomes during their TWP experience, as measured by a regression analyses equation. Two variables were excluded due to poor internal consistency (excluding Positive Identity and Independence and Self-control) and one was excluded due to concerns about factor structure (PHI well-being items). Among the remaining variables, the moderating effects of the DUREL on pre-to post-camp changes were small and mostly non-significant. Moreover, the significant effects were not in the anticipated direction of religiosity enhancing the benefits of a wilderness trip. For instance, change in one of the items. "During the past two weeks, I felt better outside my comfort zone", showed a significant negative correlation with the DUREL indicating that religious students showed less growth on this domain, as compared to non-religious students. However, there were also three variables that showed a trend in the predicted direction.

Significant Finding In the Opposite of the Expected Direction

Considering the larger number of tests and the few significant findings, the significant effects in the opposite of the hypothesized direction may be Type 1 errors. Thus, the interpretation of these findings is speculative and post hoc, so they should be interpreted with a high degree of caution especially where they conflict with previous studies. Of note, previous research is almost always based on main effects and this study provides a novel investigation into moderation.

Some initial speculation as to why religiosity was associated with slower grown on some variables is related to what 'religiosity' can signify for certain youth. The majority of our TWP student group reported the centrality of religion in their lived identities and beliefs; this affiliation may be deleterious in certain regards. Although self-reported religiosity has been found to mostly be associated with positive mental health amongst adolescents (Chiswick & Mirtcheva, 2013), it has also been linked with higher levels of anxiety (DiPierro et al., 2018), feelings of shame and guilt (Carpenter et al., 2012), and higher levels of depression amongst youth who use negative religious coping (Carpenter et al., 2012). Also, fundamentalist attitudes can lead to feelings of prejudice towards out-groups (Hannover et al., 2018). Thus, other studies have found negative correlations between religiosity, mental health, and social behavior.

Another consideration from previous research is that identity development for religious adolescents who are raised in highly religious contexts can be challenging and lead to negative mental health, as their values often contrast with pluralist and secularized society (De Bruin-Wassinkmaat et al., 2019). Some religious attributes and beliefs can even lead to poorer adjustment through adolescence (Schnitker et al. 2021). Therefore, for certain religious students, TWP may be detrimental by provoking negative feelings, thoughts, or attitudes (the mechanism is unclear at present). Perhaps these students would acclimate better to religious-based camping expeditions which have found to enhance faith formation and vocational discernment (Sorenson, 2014). All lessons and activities on TWP trips are secular; although students are free to express their diverse religiosity and spirituality. Research has found that secular camping sites can be unappealing for certain religious populations who adhere to certain practices such as dress codes, prayer

facilities and abstaining from certain food (Ram & Hall, 2022). This finding highlights the need for further research to account for camping or wilderness experiences including feelings, attitudes and behavioral components of religious students who are undergoing a secular-based camping experience.

Importantly the mixed findings such that extrinsically religious students performed better as compared to intrinsically religious students suggest that these two groups of students may be different and identify/practice their religion in a diverse manner. Previous research has found that youth who identify as intrinsically religious demonstrate better mental health as compared to extrinsically religious youth (Heaven et al., 2007), so this finding is unique in contextualizing adolescent religiosity during a wilderness expedition. It may have been the case that intrinsically religious students felt more challenged or perceived the TWP trip as less acclimating to them, as compared to extrinsically religious students.

Statistically Significant Findings – Independence/Self-Control (ISC)

Extrinsic religiosity and the DUREL composite variable demonstrated significant positive findings for the ISC scale, with extrinsic religiosity contributing 3.5% and the composite index contributing 4.7% of variance. In some sense this is not a surprising finding, as religiosity has long been established with delayed gratification, effortful control, and self-restraint amongst adults and adolescents (Marcus & McCullough, 2021). Researchers have found that religious activities such as daily prayer and religious environments such as being in religious schooling have the most substantial positive effect on self-control (Marcus & McCullough, 2021). Further research has found self-control as a plausible mediator explaining the link between adolescent religiosity and

positive health outcomes such as lower antisocial behaviors (Purwono et al., 2019), lower levels of aggression (Shepperd et al., 2015), higher life satisfaction (Shroff et al., 2021), and lower alcohol/substance abuse (DeWall et al., 2014).

Although intrinsic religiosity also contributed a substantial variance (3.1%) in a positive direction, the finding was not significant ($p = .071$) suggesting that extrinsically religious students and those who are both extrinsically *and* intrinsically religious performed slightly better than students who identify as only intrinsically religious. This is surprising as long-standing research has identified intrinsic religiosity as a self-determined orientation of religious values that one carries forth autonomously in comparison to *introjected* religiosity in which one is practicing religious ideals or values through guilt, coercion, or shame (Ryan et al., 1993). Although the latter term need not be equated with extrinsic religiosity, it can be assumed that those youth who hold religious principles as part of their ethical framework and worldview (i.e., intrinsically) would exhibit components such as self-control more robustly as compared to youth who are practicing only extrinsic components of their faith. Hence, the findings contribute to novel research in contextualizing effects of religiosity during intensive interventions such as wilderness expeditions for religious youth.

Non-Significant Positive Findings – Intrinsic Religiosity

In some cases, small effects can be meaningful (Yeaton & Sechrest, 1981), with small in the context of this study being a change in R^2 of 2%. This study was underpowered to find small effects, and most were in the small range. In this study, 3 of the 11 outcome variables demonstrated variance percentages greater than 2% in a positive direction (with two being near statistical significance) when religiosity, as measured by

the DUREL, was entered into the regression equation. This suggests that self-reported student religiosity may lead to less growth as outlined with the TWP scale, but may also be beneficial in supplying students with resilience, self-control, and positive planning. A small effect from a two-week trip may be noteworthy, particularly if this small effect moderates positive youth development throughout the year or across multiple life-changing events. These findings are discussed in greater detail below.

Grit/Perseverance

Religiosity accounted for 3.6% increase in variance explained in change in student grit/perseverance scores (in a positive direction) corroborating previous research on R/S promoting health development in adolescents by enhancing their ability to cope with challenges (Kim & Esquivel, 2011). The DUREL composite analyses also showed positive findings with near significance ($p = .053$) suggesting that youth who are extrinsic *and* intrinsically religious also increased in GP during TWP. Intrinsic religiosity has been linked with resilience and perseverance amongst adolescent refugees (Chow et al., 2021), war-exposed youth (Fayyad et al., 2017) and adolescents exposed to recurrent communal violence (Distiller et al., 2007), Crawford et al., (2006) notes that religious systems including individual and familial/social components supply adaptive capacities to dysfunctional situations such as trauma, abuse, and chronic stress through secure attachment relationships with supernatural forces such as God, emotional regulation mechanisms through prayers and rituals, social support through a sense of community belonging and increased moral values such as integrity and optimism.

This finding is interesting when accounting for religiosity leading to contrasting and negative results on the TWP scale. Growth was positive, on average, with slightly

less growth on the TWP scales for the more religious students. Students report feeling cognitively or behaviorally challenged the course of TWP, which is a condition for growth. Students with higher intrinsic religious beliefs may have been more resilience to confront these difficulties, possibly using religious coping to persevere through the two-week TWP expedition. Previous research has found that religious coping is the most common coping mechanism used by adolescents during times of distress (Fayyad et al., 2017). Future research should explore positive and religious coping skills and the mechanism by which religious students utilize grit, resilience and perseverance when faced with morally, psychologically, and environmentally challenging situations.

Independence/Self-Control

Religion accounted for 3.1% increase in the variance explained in change in student (in a positive direction) corroborating previous research on religiosity being linked with self-control in adolescent populations and lower substance usage, at-risk behaviors, and delinquency (Desmond et al., 2013, Yeung et al., 2009). Hence, these trends hold for our current sample of TWP students whose intrinsic religiosity may have helped during the two-week expedition with promoting self-control and independence. The tendency was for all students in TWP to improve ISC, and the growth was slightly higher for those who reported higher intrinsic religiosity/spirituality.

The importance of increasing ISC is high considering that research has demonstrated that early sexual encounters (before the age of 14) and other risky behaviors such as early alcohol or substance usage are associated with further high-risk behaviors including early pregnancy, physical dating violence, forced sex, later usage of drugs such as cocaine and cigarettes and lower academic ranking (Kaplan et al., 2013;

DuRant et al., 1999). Other research has found that youth who demonstrate the lowest ISC traits tend to exhibit the highest levels of externalizing behaviors and vice-versa (Phelps et al., 2007). Promoting self-control is critical during adolescence as it is robustly tied with better quality of life, higher academic involvement, and task persistence (Watterson & Geisler, 2012; Holmes & Kim-Spoon, 2016). Future program developers may want to specifically target this characteristic due to its strong influence on positive adolescent health.

Summer camp experiences that improve ISC may be further enhanced by teaching mindfulness which can help increase executive functioning and self-control in both secular and faith-based students (Elkins-Brown et al., 2017). Researchers may also want to further explore how religious students utilize self-control in the context of camping trips, as the author found no published studies of this topic. Critical questions include: How were religious students utilizing self-control during a non-religious camping expedition? How was their sense of religiosity promoting independent decision-making? What situations prompted higher or lower levels of self-control? Furthermore, were these students' negative endorsements on other domains such as the TWP scale ("I felt better outside my comfort zone") related to using ISC?

Positive Planning

Religion accounted for 2.4% of the variance in student positive planning scores (in a positive direction) corroborating previous research on religiosity being related to positive future orientations, moral judgements, and use of time constructively (Gennerich, 2020; Cheung & Yeung, 2011). 'Positive planning' denotes areas of life in which adolescents spend time reflecting on including leisure time, family, material

possessions, etc. and it is closely related to goal orientation or "the individual disposition toward developing or validating one's ability in achievement settings" (Robert & Kadhiravan, 2020). Research has uncovered that delinquent youth are less able to construct positive orientations of the future and perceive time less distinctly as compared to better adjusted youth (Gennerich, 2020). Religion helps aid in positive planning by developing goals, values and motivational methods which allow for more constructive use of time and opportunities. This personal sense of 'agency' or a goal-oriented drive leads to enhanced pathways (socially, cognitively, etc.) to manifest one's goals, as well as the positive self-esteem and efficacy needed to sustain consecutive goal development (Gennerich, 2020).

Future researchers and developers may want to focus more critically on the role of goal development for religious/spiritual adolescents as it relates to youth wilderness expeditions, as it has been shown to positively impact self-endorsed meaning, purpose, and positive identity (Luyckx et al., 2017). Some pertinent research questions are: Why are religious youth engaging in these activities? What goals are they seeking to attain (both short-term and long-term)? What motivation do they possess, and can their faith equip them to overcome obstacles to meet these goals? Research suggests that youth with higher achievement motivation and goal orientation had significantly better mental health, academic success, vocational and social achievements than those with lower motivation or fewer or less ambitious goals (Robert & Kadhiravan, 2020).

Non-Significant Negative Findings – Extrinsic Religiosity

Although significant improvements measured by positive mean changes were achieved for 11 of 12 the variables; extrinsic religiosity was associated with a trend

toward slower improvement for 2 of the 11 variables tested for moderating effects. The regression coefficients were negative as the model explained an increase of 2.9% of variance for Positive Experiences and 2.8% for Positive Values. In contrast, intrinsic religiosity did not demonstrate negative (or positive) fluctuations on these variables, indicating that only extrinsically religious students performed worse on these two domains with respect to slower growth.

Extrinsic religiosity has been defined as 'religious self-centeredness' in which religion serves a utilitarian function such as achieving social relations or providing personal comfort (i.e., these individuals may go to places of worship because it is a norm in their society or for personal/social advancement) (Singh & Bano, 2017). Allport and Ross (1967) who conceptualized intrinsic and extrinsic orientations found that high scorers on extrinsic religiosity tend to be more dogmatic, prejudiced, and score more negatively on mental health outcomes. Intrinsic religiosity was consequently thought of as a more mature form of religiosity in which there is a better organization of personality, consistent morality, and cognitive flexibility with lowers levels of contempt and intolerance (Allport & Ross, 1967). Longstanding research has documented negative associations with extrinsic religiosity (Singh & Bano, 2017).

Although it is important to note that in other cultural groups such as amongst Indian adolescents; extrinsic religiosity has been tied to psychological well-being with a sizable overlap between intrinsic and extrinsic religiosity (Singh & Bano, 2017). Further research amongst African American adolescents (n = 1,595) finds a higher percentage of extrinsic religiosity such as interface with religious services as compared to White counterparts (Lee & Neblett, 2019). Contrastingly, research amongst adolescents in Hong

Kong found that intrinsic and extrinsic religiosity predicted better outcomes such as increased meaning in life, self-esteem and life satisfaction but only amongst males, whereas only intrinsic religiosity predicted these outcomes in females (Li & Liu, 2021). This same classification was found for male university students in Iran who endorsed higher forms of extrinsic religiosity compared to females who endorsed higher forms of intrinsic religiosity (Hosseinkhanzadeh et al., 2013).

As it relates to our TWP student group; extrinsically religious students endorsed fewer positive experiences and less positive values as compared to intrinsically religious students and non-religious students. The results can be partially explained by how extrinsic religiosity affects positive youth development; research has found that interpersonal religious experiences such as positive social interactions with congregation and religious teachings were the only religious variable that led to decreased depressive symptoms amongst adolescents (Cotton et al., 2006). Religious development with extrinsic components including familial bonds, social communities, and regular visits to places of worship may be more salient for adolescents in reducing drug usage and other delinquency behaviors (Yeung et al., 2009). Although previous research has tied intrinsic religiosity to better health outcomes, these associations may differ for other cultural groups and adolescents. It should also be noted that this is a matter of degree, not kind, with youth reporting positive experiences and improvement in values, just at a slower rate for when using extrinsic spirituality as a moderator. Also, this is a non-significant trent that should be examined in studies with more statistical power.

Demographic Variables

Race/Ethnicity

When treated as a moderator, Hispanic students improved less on TWP domain as compared to students of other ethnicities ($\beta = -.396$, $p < .05$), with the negative trend holding after the DUREL was entered into the regression analyses ($\beta = -.342$, $p = .076$), Hispanic students also demonstrated less growth on Independence/Self-Control abilities ($\beta = -.342$, $p < .05$), with the negative trend increasing after the DUREL was entered ($\beta = -.373$, $p < .05$). A correlation analyses demonstrated that being Female and Hispanic were significantly positively related, $r (174) = .238$, $p < .01$. This suggests that our TWP student group, largely comprised of Hispanic youth (63.8%),with most of those Hispanic youth being female, grew more slowly than the other groups. These youth may be especially struggling with individual and social-level factors unique to their cultural group.

The Hispanic population is the largest racial minority in the United States with the population expected to double by 2060 (reaching 25% of the United States population) (Silva & Van Orden, 2018). Research has found a rise in mental health issues in the Hispanic community including a significant increase in suicide rates (Silva & Van Orden, 2018). Other risk factors have found that Hispanics of Puerto Rican descent, second-generation Hispanic youth (U.S born Hispanics with immigrant parents) and subsequent generation youth, sexual minority Hispanics, along with adolescent female Hispanics demonstrate the highest risk of suicide (Silva & Van Orden, 2018). Other research has found lower rates of suicidal ideation for female Hispanic preadolescents (8-10) as compared to preadolescents who are male or multiracial (Lawrence et al., 2021) suggesting these trends begin to emerge during middle adolescence or teenagerhood.

Most important to note is that US Hispanics have had historically low suicide risk, but risk has steadily increased since 2000 (Martinez-Ales et al., 2021).

Along with increasing suicide rates, concerns about depression are salient for Hispanic youth. Compared to non-Hispanic Whites, Hispanic students are also more likely to experience depressive symptoms (Meca et al., 2019). This may be embedded in the social ecology of being Hispanic. For instance, individual-level factors such as lower levels of ethnic identity attachment, along with social isolation ('thwarted belongingness') and low self-appraisal ('perceived burdensomeness') have also been linked with negative mental health in Hispanic youth and young adults (Oakey-Frost et al., 2021). Data collected from Mexican-origin youth, ages 12 to 21 (n = 674) found that higher levels of effortful control including the ability to suppress inhibitions and sustained attention decreased the risk suicidal ideation and attempts, whereas negative emotionality, such as depressed mood and aggression, increased the risk of SI. Youth with higher levels of trait Conscientiousness also demonstrated lower risk (Lawson et al., 2022).

Sociocultural variables such as labor inequality, acculturation and cultural assimilation are also positively related to suicide risk (Oakey-Frost et al., 2021). Immigration is another risk factor such that Hispanic individuals who born and remain in their home country show lower risks of suicide and other mental health concerns as compared to Hispanics who are born and move to the U.S. (Oakey-Frost et al., 2021). Future researchers may want to further assess salient variables such as acculturation, immigration status and enculturation amongst Hispanic (and other minority youth) involved in wilderness expeditions. Research has found that amongst 1,992 Hispanic

youth, enculturation was related to higher levels of family cohesion and lower family conflict with those predicting lower levels of depression, but that acculturation only impacted females as it led to lower endorsements of traditional gender roles (leading to higher family conflicts and higher depression) (Lorenzo-Blanco et al., 2012). Therefore, researchers may want to continue probing as to the mechanisms by which these variables impact demographical affiliations including gender, SES status, sexual orientation, and religiosity/spirituality.

Mixed research also finds that religiosity is significantly related to communal belonging (positive mental health) for U.S.-born Hispanics, but not for foreign-born Hispanics (Silva et al., 2022). Further research on 3,115 Hispanic adolescents finds that intrinsic religiosity helps to reduce suicidal risk by decreasing depression, but these trends are magnified when there is parental monitoring and involvement (Boyas et al., 2019). As it relates to religiosity and spirituality in Hispanic youth, future researchers may want to collect information on variables beyond the personal dimensions (i.e., what the present study focused on) with environmental assessments such as familism and collectivism.

Limitations

The positive main effects of this study replicate and extend a growing body of research documenting the robust benefits of outdoor experiences on positive youth development (e.g., Guttman & Schoon, 2014). There is well-documented variation in outcomes and some theories created to explain how outdoor programs work have specified moderators (e.g., Deane & Harre, 2013). However, few robust moderators of outdoor programs for youth have been documented.

Although some unique negative and positive trends were noted amongst the TWP student group; most of the moderator analyses were non-significant with religiosity contributing as little as 0.1% of additional variance in several of the statistical equations. A large majority of the TWP student group identified as intrinsically religious on the baseline DUREL scale (at least 70%), which may have reduced variability to find a moderating effect Other plausible reasons as to why religiosity did not positively affect most character strength domains in the present study include both individual and cultural-level factors. These variables are identified as potential moderators in the Youth Adventure Program model (Deane & Harre, 2013). These moderators may have impacted the current study and future researchers can tailor better research by addressing these concerns.

Lack of Assessing Salient Variables

Acculturation. Acculturation is defined as a process of psychological change resulting from contact with other groups, such as Hispanic students having to adopt cultural norms related to being a successful student (independence, self-reliance) through 'receiving-culture acquisition', as well as 'heritage-culture retention' such as collectivist peoples having to become more 'individualistic' as a function of prospering in the U.S. As a consequence, certain cultural ideals, such as family and communal obligations, must be shifted in priority, or even abandoned (Castillo et al., 2015). For example, research finds that acculturated Hispanic youth (as measured by speaking primarily English at home) are more likely to engage in drug usage than traditional adolescent counterparts (Becerra et al., 2014). Acculturative stress has also been noted amongst African Americans who experience difficulties adapting to Eurocentric values, as they rely on

their own cultural ideals, values, and belief systems (De La Rosa et al., 2000). These two groups were the largest demographics in the present study (Hispanic – 63.8%, Black – 6.8%).

Furthermore, religion has been found to be an integral part of the acculturative process for minority groups including Hispanics (Wallace et al., 2010). For example, foreign-born Hispanics are found to be more religious than U.S born counterparts (Pew Research, 2014). In the current study, no measurement of acculturation was included which hindered the non-significant and unassumed findings. Hispanic students (most of whom were female) tended to perform worse on key domains, even when religiosity was added into the regression equation. Researchers did not hypothesize or assume these findings. Are these students experiencing acculturative stress? Do these students identify as 1st, 2nd or subsequent-generational immigrants? Are these students undergoing 'cultural acquisition' which may involve a loss or shift away from parental and/or organized religiosity? Lastly, through a strengths-based model, what are the cultural factors most likely to provide coping, resilience, and protective help?

Collectivism. Cohen et al., (2016) posits that religions can influence the cultural development of people groups synthesizing religious and cultural norms. In our case, prior research has found that Hispanic groups largely self-report collectivistic ideals such as familismo, comunidad and respeto. Another term 'tu eres mi otro you' (You are my other self) also captures collective identity as being rooted in responsibility for community, such as valuing elders (Castellanos & Gloria, 2016). Collectivism is strongly linked with emotional and behavioral dependence such that individuals primarily identify with their clan, family group and/or religious community (Buda & El-Sayed Elkhouly,

1999). Acculturation may disrupt both individual-level and social-level factors including loss of collectivist orientation. For example, Saroglou and Munoz-Garcia (2008) found that religious people in largely religious countries endorse values such as tradition and conformity and do not endorse values such as self-direction and hedonism (in contrast to non-religious countries). Methodological inquiry has also found that communalism, familism, and filial piety can be clustered onto a single factor which Schwartz et al., (2010) refer to as 'family/relationship primacy'. Amongst 10,491 students, higher family/relationship primacy was positively associated with better psychosocial functioning (Schwartz et al., 2010).

Our student group was mostly non-White including Hispanics, African American, and Asian; all of which endorse collectivist values such as communalism, familism, and filial piety (Schwartz et al., 2010). Along with lack of measures for acculturation and immigration identity; the present study used measures of religiosity tailored to intrinsic religiosity (i.e., how religion is practiced by the individual). Some variation in extrinsic verses intrinsic religiosity were found in this study, but they were small and usually non-significant "trends." Future researchers may want to directly assess religiosity, including a more robust differentiation of intrinsic faith and spirituality, along with external-level factors such as collectivist orientation and how it relates to extrinsic religiosity (i.e., are the youth practicing religion to be closer with their family/community, or even closer to their traditional homeland or culture?). Research on 152 African American adolescents found that religiosity, social support, and communalism were interlinked and led to increased thriving and PYD (Gooden & McMahon, 2016).

SES status. TWP is specifically tailored for low-income students in and around the Houston area through partnerships with schools situated in low-income communities. Long-standing research including a systematic review of 52 studies between 1990 and 2011 has found that youth raised in low SES families are 2 to 3 times more likely to develop mental health problems with this trend persisting over time (Reiss, 2013). Baum et al, (1999) situate that the persistence of chronic stress factors including crowding, crime, noise pollution, discrimination, and other hazards captures a substantial portion of negative health and social outcomes of low SES affiliation. Research on adolescents in low wealth families finds that they tend to have poorer diets, less physical activity, and greater cigarette smoking (Hanson & Chen, 2007). Lower SES status may also be associated with greater threat interpretation and physiological arousal which lead to greater diastolic blood pressure and heart rate reactivity (Chen et al., 2004). Future studies on lower-income student groups should concretely include SES as a co-variate by dummy coding respondents across income brackets of parents or guardians, SES status has been difficult to collect in research due to monthly fluctuations of income, informal work and reporting biases but recent work has sought to replace income information with more direct assessments of wealth such as household assets (Psaki et al., 2014).

Spirituality. Although the DUREL index has been translated for adolescents in Iran and Brazil, there were no research studies found in the United States (or other Western nations) which used the DUREL index for an adolescent group, thus undermining its face and item validity for this population. Only a dissertation manuscript was found with Christian high school seniors in the New York/New Jersey area, although this was not an intervention study (Stephen, 2017). Secondly, the DUREL (English

version) has items that focus exclusively on formal or organized religiosity in a monotheistic context which may be suitable for Christian, Jewish, or Muslim populations but questionable for usage (without translation) by other groups, including youth who may be spiritual but not religious. Previous researchers have espoused that a multi-dimensional approach to abstract constructs such as spirituality be employed (Piedmont, 2001). Future studies can use multi-faceted spiritual scales such as the Spiritual Transcendence Scale (STS) (Piedmont, 2001) or the Intrinsic Spirituality Scale (ISS) (Hodge, 2003). The current study did not ask youth which religion they affiliated with (if any) and failed to disentangle spirituality as a separate item from religiosity which may have left out an important 'spiritual but not religious' group. Dimensions of spirituality for adolescents including self-discovery and eco-awareness are found to be the most robust factors in better resilience and mental health, indicating that motivation and interaction to connect with nature is an important part of the spiritual lives of adolescents (Shahina & Parveen, 2020). This finding highlights that, particularly in the context of ecologically-centered youth wilderness expeditions, measuring for dimensions of spirituality such as environmental and nature connectedness is critical (Sweatman & Heintzman, 2004). The spiritual-nature relationship may be more pronounced for Indigenous groups as well (Hatala et al., 2020). This is important to consider as the latest Pew Research found a 12-percentage drop from 2010 to 2013 in Hispanics identifying as Catholic (n = 5,103) with most of the change occurring in Hispanic adults 18-29.

Procedural Limitations

Multiple Unknown or Uncontrolled Threats to Validity. A potential confound to the observed results in the current study is a history threat, which refers to intervening

events that may have potentially influenced the outcome variables (Christ, 2007). For example, the negative pre- to post-findings for Hispanic TWP students may have been influenced by secondary factors unknown to researchers or uncontrolled for in the statistical analyses. History effects can be minimalized if data is collected with shorter time spans in between data collection periods. Potential history events can include changes in schooling, changes in living situation and novelty exposure (Slocum et al., 2022). A religious youth may begin an intervention such as TWP with noted self-reported character strengths and moderate-high religiosity (perhaps they attended a particularly insightful religious event recently or had a prayer with their family prior to the wilderness trip) which drastically decreases a week into the intervention (their self-efficacy is challenged such as not being able to keep up with other camp members). In this study, the timing of measurement, group dynamics, and events on the trail could all be uncontrolled history effects.

There could also be history by instrumentation confounds. The present study had a two-week time allocation with students completing the surveys online pre and post which may have led to testing effects as the same questions were repeated (i.e., students purposefully scored higher on post). This may lead to unexpected response shift such as students recalibrating or reconstruing meaning of items from pre to post; a lack of a control group and lack of follow-up assessment (after post) warrant further caution as to the reliability of results (Kaushal, 2016).

Although the current study sought to control for contextual factors by including co-variates in the regression analyses, confounding variables such as familiarity with study conditions, experimental mortality (drop-out rate at post), predisposition effect,

experimenter-expectancy and history threats may have influenced the results (Cahit, 2015). Internal and external validity concerns are also pronounced if there is no comparable control or lack of randomization between sample groups (Chander, 2018). Without an active control such as a two-week physical exercise course for same-aged participants occurring at the same time, it is difficult to determine the efficacy of TWP on outcome variables. Hence, the positive results from pre to post may not be due to the TWP camping expedition itself but from exposure to a novel environment and novel activities which has been linked with well-being, motivation, and life satisfaction (Gonzalez-Cutre et al., 2016). Future researchers in the camping and youth wilderness field should have an active control condition to compare using demographic equivalents of intended student group(s).

Self-report bias. The current study collected surveys entirely through self-reports which may confounded validity due to self-presentation, social desirability, and threat of disclosure on part of participants (Krumpal, 2013). Social desirability refers to the tendency to describe oneself in an overly positive manner when reporting behaviors associated with descriptive or injunctive norms (Kurmpal, 2013). The discrepancy between actual behavior and normative expectations creates cognitive dissonance or concerns about possible iatrogenic effects from their answers such as family being upset or prosecution/ostracization (Krumpal, 2013).

Another issue with self-report is potential intrusiveness, which refers to certain questions which may perceived as private or taboo within a culture including questions concerning health status or religious affiliation (Krumpal, 2013). Elgar et al., (2005) note that although self-report bias tends to be reliable, validity seems to be more unclear with

bias being concealed by method variance or social desirability. For example, Crockett et al., (1987) found some degree of response error when adolescents were asked to report their height, weight, and academic grades. A larger degree of discordance was found when adolescents were asked to report behavioral disorders indicating more sensitivity to items which prod for undesirable behaviors or thoughts (Jeong et al., 2018). Conversely, Presser and Stinton (1998) note that "respondents in conventional surveys vastly overreport their religious attendance" with this trend increasing over the past 30 years. An adequate method to minimize self-report bias can be collecting collateral information from parents, teachers, or peers and objective data including the frequency of positive behaviors over negative behaviors.

Construct validity

Although there is research on religion and spirituality as convergent constructs, there are noted differences with religion being operationalized as an individual involvement in an organized community that emphasizes doctrine, adherence to a moral code and traditions from an institution and spirituality as a subjective, mystical, and holistic codification of values/beliefs and behaviors (Garfield, Isacco & Sahker, 2013). Furthermore, there is unclear research on how mainstream and non-normative populations operationalize these terms including Hispanics who made-up the majority of the TWP student group. For example, Pathwardan et al., (2012) found that Hispanic Catholics demonstrated higher forms of extrinsic religiousness due to collectivist orientations than Anglo Protestants. Cohen et al., (2016) posits that religions can influence the cultural development of people groups by synthesizing religious and

cultural norms. Hence, religious measurement tools which ask for broader affiliations of religiosity with social and cultural aspects may have been more appropriate.

Perhaps the strongest predictive variable in adolescent R/S is degree of supportive relationship with parents and family such that parental warmth and close affiliation with family members strongly predicts the extent to which adolescents self-identify as moderately or strongly religious. As adolescents get older, peer influences such as actively participating with friends in religious activities help explain the variance in adolescent religious commitment more significantly than parental influence (King & Boyatzis, 2015). Researchers who are seeking to measure adolescent R/S may also want to collect information on parent religiosity, peer group affiliation, and whether student or youth reports a close bond with family and community.

Implications

Multiple clinical models show that physical, mental, social, and spiritual dimensions of health are linked and their combined effects lead most fully towards overall flourishment (Cloninger et al., 2015). What is more unclear is how, where, and why these associations occur as most research on R/S uses single-item questions at a single time point to function for overall religiosity (Piedmont & Wilkins, 2019). More so, research focusing exclusively on adolescents and measuring religiosity as it interacts with an active intervention pre and post is scarce in the developmental literature. The current study seeks to bridge a sizable gap by including religiosity as part of a normal baseline inventory along with other demographic variables including race/ethnicity, gender, SES status, sexual orientation, house size, etc. Although the stated hypotheses were not met, it

is of the hope of the present researchers that the role of faith (including lack of faith) can be normalized and thus measured more often in the social sciences.

According to a recent Pew Research survey about 1/3 or 30-35% of U.S. adolescents report sharing the same religious affiliation of their parents and these adolescents may resemble their parents' form of religiosity such as shared rituals, practices, and beliefs. A longitudinal study finds that across youth from varied backgrounds; religiosity does tend to decline, and this decline is further associated with changes in ethnic and family identification (Lopez et al., 2011). For example, a large-scale decline in formal marriage is associated with generational declines in affiliated religiosity such that only more 'devout' Protestants and Catholics tend to marry and those having lower forms of religiosity or non-religiosity tend to co-habitat and having fewer to no children (Eggebeen & Dew, 2009). Understanding group and individual-level trajectories of religiosity is fundamental as adolescents transition into young adulthood to better determine the impact on parent-youth relationships, psychological functioning, communal support, and overall development. Researchers who are working with school-aged populations are in an advantageous position as they can aggregate individual and ecological data to better determine supports for religious and non-religious students as they mature. For example, a religiously affiliated 8th grader who comes from a Catholic Hispanic background may require additional supports into 11th or 12th grade if he begins transitioning away from the faith he was brought up in as his individual religiosity may be intertwined with familial, cultural, and communal functionalities.

Faith as a relevant factor for measurement makes sense amongst BIPOC populations including Hispanics. African Americans and Asian-Americans including

Arab populations who tend to report higher levels of religiosity (Wallace et al., 2007; McHale et al., 2009; Lopez et al., 2011). Smith et al., (2002) in compiling data on around 30,000 adolescents from the 1996 Monitoring the Future study found that adolescent girls tend to report higher forms of religious participation than boys, African American youth tend to have higher concentrations in Methodist, Holiness, Jehovah's Witness, Baptist, and Muslim communities, whereas Hispanic youth tend to have higher concentrations in Catholic, Jehovah's Witness, and Adventist communities. Finally, the study found that African Americans had the highest rates of religious attendance, followed by Whites. Although, in other studies, with older-aged Hispanics; higher rates of religious participation have been found (Wang et al., 2013). A more recent study on 134 Hispanic youth (M = 16.14) found that 47.3% identified as religious or spiritual (DiPierro et al., 2018). The current study also found that at least 70% of the TWP youth or approximately 85-90 youth reported some form of intrinsic religiosity including a belief in God or some sort of higher presence and seeking to utilize faith in their day-to-day lives. A smaller percentage (40-50%) exhibited extrinsic religiosity behaviors including prayer, going to places of worship or other forms of ritual devotion.

The findings or rather lack of findings of moderation are noteworthy as the tacit assumptions which led the present researchers to believe religiosity would have a direct effect on character growth across the two-week TWP trip was based on grounded research across decades. These studies suggest that religiosity tends to work 'for the most part' in 'most places'. What is absent from the scant research on this domain is when religiosity does not work or even interferes with the functioning of individuals, including adolescents (especially across periods of time). Previous research has found that religious

adolescents who utilize negative religious coping tend to have more negative affect and psychological distress, as opposed to adolescents who utilize positive religious coping (Van Dyke et al., 2009). Although these studies tend to be monomethod and fail to address environmental specificities such as why these youth may be utilizing deleterious coping methods and in what context or environments? The present research suggests that religious youth not experience as much growth in positive traits and abilities in a secular camping trip; however, they may also utilize strengths such as resilience and positive planning to cope with novel demands (as nearly all the youth on TWP had never undergone a strenuous two-week backpacking wilderness expedition before). Therefore, to some degree, we can contextualize the role of religiosity in this TWP cohort as being both positive *and* negative, but the effects were small. Thus, a more defensive interpretation is that role of religiosity was non-relevant as on some outcome variables during this intense two-week-long wilderness experience. Although some models of youth adventure programs do specify moderators, few robust ones have been found.

Most baseline demographic factors that are potential moderators, such as race/ethnicity, SES, sexual orientation, and gender identity do not fluctuate. However, extrinsic and intrinsic religiosity/spirituality could be strongly impacted by context. For example, without the usual structures and rituals for religious practice, extrinsic and intrinsic spirituality could fade in relevance compared to their usually more religiously structured lifestyle. For instance, campers might stop praying due to the allostatic load of strenuous camping and programming; their religiosity may become a non-factor or at least not one of the most crucial factors which brings cognitive, social, emotional, and spiritual strengths to help them overcome (as it may in their home or community life).

Particularly at a secular camping trip such as TWP, staff may not create the space or conditions to evoke the potential benefits of religiosity and spirituality. Instead in the TWP, there is a heavy focus on self-reliance and individual traits and abilities. In a faith or spirituality-based camp; staff may encourage youth to ask God for help, contacting them with a local religious leader, or connecting them with other religious youth. This could activate the well-documented positive effects of religiosity and spirituality as a moderator of camp. On the other hand, it may be too much to expect religiosity and spirituality, which have small to modest effects, on a robust two-week experience like the TWP trip. R/S may be more of a factor in the long run, during times in life that allow for full expression and exploration of R/S.

Lastly, the study did find that extrinsic religiosity had *more* of a negative impact or tend towards slower growth on two DA outcomes (Positive Planning & Positive Values), as opposed to intrinsic religiosity which had a significantly negative trend on the TWP outcome variable and small (but not significant) effects on two PYD outcomes (Independence/Self-Control). Although religiosity was *mostly* a non-factor for most dependent variables; the study does highlight that a crucial differentiation is needed in the developmental literature to better account for the shared and non-shared mechanisms by which extrinsic and intrinsic religiosity similarly and differently affect youth. It can be assumed that most of the youth who endorsed themselves as intrinsic, also endorsed some levels of extrinsic affiliation; however, a larger percentage (+20-25%) reported *only* intrinsic religiosity. It is possible that even a higher percentage of students would have endorsed a non-religious spiritual item (if that scale would have been included; the DUREL is framed in a monotheistic context possibly leaving out youth who affiliate with

other religious groups such as Buddhism, Hinduism, etc.). Therefore, spiritual and non-monotheistic religious students may have shown a different trajectory on the outcome variables highlighting clusters of adolescents who utilize R/S in varied ways. The current study sought to 'move the field' forward by explicitly assessing distinct (but convergent) dimensions of adolescent religiosity and results corroborated that extrinsic religiosity did account for variance in outcome variables, not found for intrinsic religiosity (and vice-versa). Future researchers may want to further assess for adolescents who are *only* extrinsically religious, *only* intrinsically religious, *both* extrinsically and intrinsically religious, spiritual but not religious and neither religious nor spiritual.

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Appendix A

List of Tables

Table A1

Summary of Hypothesis, Analysis & Significance

	Hypothesis	Significance	Statistical Analysis
Main Effect of Time (Pre-Post Intervention)	All outcome variables will have significant mean differences.	<.05	Dependent samples t-test
Correlations with Outcome Variables including Demographics (Block 1)	Co-variates will not have substantial variance on outcomes	>.05	Simple linear regression
Correlations with Outcome Variables including Demographics & Intrinsic Religiosity (3-item DUREL) (Block 2a)	Intrinsic religiosity will be significant.	<.05	Simple linear regression
Correlations with Outcome Variables including Demographics & Extrinsic Religiosity (2-item DUREL) (Block 2b)	Extrinsic religiosity will be significant.	<.05	Simple linear regression
Correlations with Outcome Variables including Demographics & Interaction Religiosity (Intrinsic & Extrinsic composite) (Block 2c)	Religiosity as a Composite will be significant.	<.05	Simple linear regression

Table A2

Demographic data for TWP student group at baseline; percentage of sample size of different

genders.

Gender Choices	Student Frequency n	Student Percentage %
Male	81	46.6%
Female	77	44.3%
Other	16	9.2%
Total	174*	100%

Note. 174 students filled out the baseline demographic information, for actual completion of pre- and post-surveys (100%), but data for 120 students were analyzed due to missing post-trip surveys.

Table A3

Demographic data for TWP students; percentage of sample size of different race/ethnicities

Race/Ethnicity selection	Student Frequency	Student Percentage
Caucasian	4	2.3%

African/African American	11	6.3%
Hispanic/Latino	111	63.8%
Asian	15	8.6%
Native-American/Indigenous	1	0.6%
Other/Mixed/Prefer not to say		
Mixed	21	12.1%
Other	11	6.3%
Total	174*	100%

Note. 174 students filled out the baseline demographic information, for actual completion of pre- and post-surveys (100%), but data for 120 students were analyzed due to missing post-trip surveys.

Table A4

Frequency distribution data for DUREL item 3, "In my life, I experience the Prescence of the Divine (i.e., God)".

Choice Selection	Student Frequency	Student Percentage
Strongly Disagree	7	4%
Disagree	2	1.1%
Somewhat Disagree	4	2.3%
Neutral	25	14.4%
Somewhat Agree	15	8.6%
Agree	71	40.8%
Strongly Agree	34	19.5%
Missing	16	9.2%
Total	174	100%

Table A5

Frequency distribution data for DUREL item 4, "My religious beliefs are what really lie behind

my whole approach to life."

Choice Selection	Student Frequency	Student Percentage
Strongly Disagree	6	3.4%

Disagree	4	2.3%
Somewhat Disagree	10	5.7%
Neutral	42	24.1%
Somewhat Agree	29	16.7%
Agree	42	24.1%
Strongly Agree	27	15.5%
Missing	14	8%
Total	174	100%

Table A6

Frequency distribution data for DUREL item 5, "I try hard to carry my religion over into all other dealings in my life."

Choice Selection	Student Frequency	Student Percentage
Strongly Disagree	5	2.9%
Disagree	3	1.7%
Somewhat Disagree	1	0.6%
Neutral	25	14.4%

Somewhat Agree	20	11.5%
Agree	56	32.2%
Strongly Agree	48	27.6%
Missing	16	9.2%
Total	174	100%

Table A7

Frequency distribution data for DUREL item 1, "how often do you attend church or other religious meetings?"

Choice Selection	Student Frequency	Student Percentage
Never	46	26.4%
Once a year	21	12.1%
A few times a year	28	16.1%
A few times a month	13	7.5%
Once a week	30	17.2%
More than once a week	18	10.3%
Missing	18	10.3%

Total	174	100%

Table A8

Frequency distribution data for DUREL item 2, "how often do you spend time in private religious activities, such as prayer, meditation or Bible study?"

Choice Selection	Student Frequency	Student Percentage
Never	53	30.5%
Once a year	22	12.6%
A few times a year	21	12.1%
A few times a month	19	10.9%
Once a week	16	9.2%
More than once a week	24	13.8%
Missing	19	10.9%
Total	174	100%

Table A9

Mean score values and significant levels for TWP outcome variables at Pre and Post.

Variable Name	Pre-Mean Score	Post-Mean Score	Significant Level
TWP	5.24	6.53	<.001
Positive Experience	.72	.94	<.001

Positive Values	4.18	4.36	<.001
Positive Planning	3.92	4.10	<.05
Grit/Perseverance	4.52	4.80	<.05
Adaptability	4.88	5.53	<.001
Environmental Appreciation	5.26	6.28	<.001
Critical Thinking	5.44	6.10	<.001
Zest/Curiosity	5.63	6.35	<.001
Social Intelligence	5.60	6.35	<.001

Table A10

Regression analyses scores for Intrinsic religiosity + co-variates.

Variable Name	Co-Variate R^2 Gender, Ethnicity, Age	DUREL R^2 (+ Co-variates)	R^2 Change (from Block 1 to Block 2)	Significant Level
TWP	.047	.080	.033	<.05
Positive Experience	.018	0.19	.001	>.05
Positive Values	0.27	0.29	.002	>.05
Positive Planning	.014	.038	.024	>.05
Grit/Perseverance	.002	.037	.035	>.05[a]
Adaptability	.010	.011	.001	>.05

Environmental Appreciation	.004	.018	.015	>.05
Critical Thinking	.007	.011	.004	>.05
Independence/Self-Control	.066	.097	.031	>.05[b]
Zest/Curiosity	.016	0.17	.001	>.05
Social Intelligence	.010	.011	.001	>.05

a Score was close to cut-off at .054

b Score was close to cut-off at .071

Table A11

Regression analyses scores for extrinsic religiosity + co-variates.

Variable Name	Co-Variate R^2	DUREL R^2 (+ Co-variates)	R^2 Change (from Block 1 to Block 2)	Significant Level
TWP	.043	.043	.00	>.05
Positive Experience	.028	.058	.029	>.05[a]
Positive Values	.028	.057	.028	>.05[b]
Positive Planning	.010	.023	.013	>.05
Grit/Perseverance	.003	.013	.010	>.05
Adaptability	.013	.014	.001	>.05

Environmental Appreciation	.003	.007	.004	>.05
Critical Thinking	.008	.008	.00	>.05
Independence/Self-Control	.082	.117	.035	<.05
Zest/Curiosity	.021	.022	.001	>.05
Social Intelligence	.010	.013	.003	>.05

[a] Score was close to cut-off at .067

[b] Score was close to cut-off at .076

Table A12

Regression analyses scores for religiosity (interaction; extrinsic + intrinsic) + co-variates.

Variable Name	Co-Variate R^2	DUREL R^2 (+ Co-variates)	R^2 Change (from Block 1 to Block 2)	Significant Level
TWP	.042	.049	.007	>.05
Positive Experience	.026	.041	.015	>.05
Positive Values	.031	.051	.020	>.05
Positive Planning	.011	.035	.024	>.05
Grit/Perseverance	.003	.039	.036	>.05[a]

Adaptability	.013	.013	.000	>.05
Environmental Appreciation	.003	.022	.019	>.05
Critical Thinking	.008	.011	.003	>.05
Independence/Self-Control	.082	.129	.047	<.05
Zest/Curiosity	.021	.025	.004	>.05
Social Intelligence	.010	.021	.010	>.05

[a] Score was close to cut-off at .053