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ASSOCIATIONS BETWEEN YOUNG ADULT AND PARENT RELIGIOSITY AND YOUNG ADULT MENTAL HEALTH OUTCOMES – A CROSS SECTIONAL ANALYSIS

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SHANNON H. GWIN
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ASSOCIATIONS BETWEEN YOUNG ADULT AND PARENT RELIGIOSITY AND YOUNG ADULT MENTAL HEALTH OUTCOMES – A CROSS SECTIONAL ANALYSIS

A DISSERTATION APPROVED FOR THE
DEPARTMENT OF HEALTH AND EXERCISE SCIENCE

BY

_____
Dr. E. Laurette Taylor

_____
Dr. Marshall Cheney

_____
Dr. Paul Branscum

_____
Dr. Sarah Maness

_____
Dr. Melissa Frey

_____
Dr. Ying Zhang

Dedicated to my husband, Owen.

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You all are blessings to me yesterday, today, and always.

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ABSTRACT

Purpose: The purpose of this study was to examine the relationship between religiosity in young adults and mental health outcomes that include depressive symptoms and suicide ideation, and to examine associations between religious concordance/discordance in young adult/parent pairs and mental health outcomes including depressive symptoms and suicide ideation in a young adult sample. Young adult assets (i.e., relationship with mom, relationship with dad) were also examined to establish influential aspects with the relationship between religiosity and mental health outcomes.

Methods: Self-reported data was collected from young adults aged 18 – 24 years and a parent counterpart during Spring 2017. A 15-minute computer-based survey was administered to young adult and parent pairs in a southwestern state. Recruitment was conducted on college and university campuses. Flyers, newsletters, word-of-mouth marketing, web listings (i.e., Facebook, organizational web pages), mass emails, and in-class recruitment was used. Participants were given the link to survey via email, text, phone calls or face-to-face in the classroom per permission of instructor/professor and approval of college/university IRB approval. The PI requested the young adult to forward the parent survey link to one of their parents via email, text, phone call or face-to-face so that the parent can complete the survey. English version was the only translation provided for the survey. All stored data was anonymous.

Results: This dissertation encompasses three studies involving relationships between religiosity factors and mental health outcomes in emerging adults.

Study 1: The first study examines associations between individual religious beliefs and

depressive symptoms and suicide ideation in young adults. Findings suggest significant inverse associations (alpha=0.05) between religious variables and reported depressive symptoms during the last week in young adults. Additionally, higher scores of religiosity subscales were significantly associated with fewer reports of suicide ideation in the last 12 months.

Study 2: The second study examines associations between religious concordance/discordance between young adults and their parent counterparts and depressive symptoms. Findings suggest significant inverse associations between Concordance/Discordance for non-organizational religiosity (e.g. private prayer time, Bible study, or meditation) and depressive symptoms in young adults (p=0.0015). Other variables that displayed significant relationships include gender (p=0.0027) and the relationships with mom (p=0.0075) and dad (p=0.0013).

Study 3: The third study investigates associations between religious concordance/discordance (C/D) between young adults and their parent counterparts and suicide ideation. There were no significant associations were found between C/D religious variables and suicide ideation.

Global Conclusions and Recommendations: With the exception of study 3, overall religiosity beliefs and practices appear to be associated with fewer depressive symptoms and suicide ideation. Inclusion of religious programs may be important to incorporate in emerging adult mental health programming. Future recommendations are discussed.

CHAPTER 1

Introduction to Problem

Mental health disorders in young adults are a serious public health problem in the United States that often can be overlooked. Research suggests that mental disorders are often untreated during childhood and adolescent years, and can often lead to serious problems during young adulthood (Ward et al., 2016). Mental health issues often manifest during childhood and early adolescence, and early treatment is vital in order to ensure no long-term complications that adversely affect quality of life into adulthood (WHO, 2016). Approximately 40% of young adults aged 18 -29 years old meet the criteria for mental health disorders. This rate is higher compared to other adult groups (Kessler et al., 2005).

One increasingly common mental disorder among young adults is depression. Major depressive episodes, or MDE, can be defined as 2 or more weeks where a person experiences a depressed mood, loss of interest in activities that would normally interest a person, and having five symptoms that also reflect changes in an individual's normal function (e.g., changes in energy level, self-image, sleep patterns, and eating) (APA, 1994). The National Survey on Drug Use and Health reports data from 2008 – 2010 where 8% of young adults 18 – 22 years old experience at least one major depressive disorder per year. Women (41.9%) tend to report higher rates of depression diagnosis compared to men (29.3%) (NSDUH Report, 2012). Depression affects approximately 8.7% of young adults the US ages 18 – 25 years old, and 5.4% of young adults have also reported at least one major depressive episode that included severe impairment.

Further, of those young adults (8.7%) that reported depressive symptoms, 28.5% also reported suicide ideation or consideration of committing suicide (Pullen, Modrcin-McCarthy, & Graf, 2000). Young adults often report overlapping symptoms between depression and suicide ideation. Suicide is often viewed as a way to solve their problems and receive relief from their intensified stress (AACAP.org, 2015). Despite available treatments for depression and suicide ideation, thousands of young adults die in the U.S. every year from suicide. Suicide is the third leading cause of death in adolescents and young adults aged 15 -24 (AACAP.org, 2015). Through a psychiatric exam, these disorders can be diagnosed, and a plan for treatment can be carried out. Related research has focused on evaluating factors that may protect young adults from mental health problems such as depression and suicide so that strategies to enhance these factors can be integrated into treatment plans and programming that are designed to reduce risk for depression and suicide.

One factor that has been identified as influencing mental health outcomes in young adults is religion. According to the 2011 Gallup polls, approximately 9 in 10 adult Americans believe in God. In the same 2011 survey, most Americans (81%) self-reported religion to be important in their lives, with 55% reporting that religion is "very important" and an additional 26% reporting that religion is "fairly important" (Newport, 2011). By contrast, 63% of 13-15 years old and 52% of 16 – 17 year olds report religion to be "very important." In general, adolescents report trends in religious practices and beliefs that are similar to their parents, but as they move into young adulthood, the level of congruence with parental beliefs may decrease as they become more independent. The importance of religion increases again as these adolescents become older, marry,

and begin families. Once they approach middle age and experience the loss and death of their parents, people tend to rely more on religious beliefs. This cycle of religiosity continues full circle with an increase in dependence on religious beliefs and values as individuals reach older adulthood and begin to advance into their final years of life (Gallup, 2002).

Many definitions of religiosity and spirituality have been offered in the literature, yet there are no consensus definitions for these concepts. Definitions of religion range from the broad concept of believing in God or spiritual beings (Taylor, 1979) to more elaborate definitions such as Durkheim's (1976), in which religion is a part of social relations in humans. She explains that religion is a unified system of values and practices related to the "sacred" and often links a community to an organization or church where people adhere to these values related to the "sacred." Other researchers explain that religiosity is often defined as practices and beliefs of individuals as related to a religious affiliation or a certain divine power (Pargament, 1997; Malony & Shafranske, 1990). However, Wilkes et al. (1986) suggests it may not be practical to define religion in general terms for research purposes. In research, defining religiosity is only useful if the definition includes measurable constructs while remaining as inclusive as possible to different religions. For example, if religiosity were defined as "belief in God," other religions that say nothing about a God would be excluded. Additionally, only having one view of religion would function to categorize others without this specific view as "nonreligious" rather than as having a different religious affiliation.

Spirituality is often defined in more personal and ambiguous terms in which

spirituality references a set of behaviors and attitudes concerning meaning of life, finding purpose, or having a connection with a realm outside of self or larger than self (Kiesling et al., 2008; Piedmont, 1999, 2001; Sinnott, 2002; Smith, 2004). "Spiritual transcendence" is often used as a term to describe the concept of spirituality and does not always refer to a divine power, God, or a sacred (Piedmont, 1999, 2001). More and more, these two concepts are being used synonymously with authors implying the strong overlap and connection between spirituality and religiosity (Zinnbauer et al., 1997). Religion often is rooted in spiritual rituals and teachings with the primary purpose of transcending the individual to point to a reality that is greater than the individual. More simply, religion is a community where search for the "sacred" or "divine" is encouraged (Dollahite, 1998). This concept of contextualizing spirituality within religious or faith communities is known as "religious spirituality" (Emmons, 1999). This integration of concepts is important because a person can feel God is an important factor to his/her life (i.e., spiritual factor) and never attend a church (i.e. a religious factor) or vice versa. For the purpose of this study, religiosity is operationalized and defined with these combined dimensions of religiosity and spirituality. This study explored how depressive symptoms and suicide behaviors in young adults are related to religiosity in our study sample. A more detailed description of these terminologies is provided in the literature review.

A great deal of research has focused on the relationship between religion and health (Koenig, 2001; Miller, 2003; Chida, 2009; & Mueller, 2010). More specifically, over the last decade, research has targeted the relationship between religiosity and the psychological well-being of individuals (Hall, 2004; Koenig, 2001; McWhirter, 2002;

& Miller, 2003). A review of the literature reveals a variety of conclusions and findings related to associations between religion and mental health. These finding are often inconsistent, with positive, neutral, and negative associations identified in different studies.

A vast proportion of the research has demonstrated direct relationships between mental health and religiosity. However, there is a small portion of research that has reported no link or inverse relationships between religiosity and mental health. In a systematic review, Koenig (2011) reported no association between religiosity and depression in 22% (60/339) of included studies and in 6% (24/74) of studies that investigated the relationship between religiosity and suicide. A direct association between religiosity and depression was reported in 8% (3/339) of studies and in 6% (4/74) of studies that investigated the relationship between religiosity and suicide behaviors (Koenig, 2001). Koenig suggested that a direct relationship between religiosity and depression and suicide was more likely among participants who have strict denominational beliefs and religious experience that is authoritarian in nature or who were blindly obedient, or ridden with conflict. Koenig explains that psychological conflicts can be induced where religious doctrines encourage conformity to specific behaviors and values that are inconsistent with societal norms or beliefs. For example, one conflicting viewpoint is the accuracy of evolution versus creation doctrines. Young people are commonly taught Charles Darwin's evolutionary theory in public schools across the US. However, many religious denominations argue that evolution is contradictory to an all-powerful God and teach principles of an intelligent design from a biblical perspective. Difficulty in adjusting to these conflicting and/or strict beliefs has

been shown to cause negative mental health outcomes including depression (Ellison et al., 2001; Schnittker, 2001).

Despite these few studies with no or direct correlations between mental health and religiosity, most research points to beneficial associations between religion and mental health. In general, most studies concluded that religion provides psychological and social resources that appear to improve mental health outcomes (Koenig, 2011; Miller, 2003; Hackney, 2003; Ellison, 1998). In addition, positive effects of religiosity on mental health are based on the assumption that religiosity in individuals has been a positive and healthy experience (Seybold, 2001). When reviewing a meta-analysis of 34 studies, Hackney & Sanders (2003) offered empirical evidence supporting an inverse relationship (i.e., high religiosity scores associated with low depression score) between religiosity and mental health parameters in the studies that included constructs of religiosity. Other constructs including spirituality, moral reasoning, and mysticism were omitted in the meta-analysis even though positive relationships were noted but not considered a main focus of the meta-analysis.

In another review by Dew et al (2008), 92% of 115 studies established at least one statistically significant relationship between better mental health and higher levels of religiosity. Some of the improved mental health outcomes included lower rates of depression, anxiety, substance abuse, delinquency, and suicidality. Consequently, current research is focusing less on whether there are associations between religiosity and better mental health and more on the mechanisms that produce these associations (Nooney & Woodrum, 2002). Much research has focused on associations between mental health and religiosity in adults and older adults, and fewer studies have explored

this relationship in the young adult population (18-25 years old). This is particularly true for mental health outcomes such as depression and suicide in young adults.

The emerging adult population is between the ages of 18 - 25 years old, which can be classified as a period of life that spans between adolescence and fully mature adulthood. Originally suggested by Jeffrey Arnett (2000), he theorized that this distinct time period includes both older adolescence and young adulthood, the period when individuals become more independent and begin to explore self-identity, intimate relationships, career opportunities, college life, and other life possibilities. Emerging adults experience feelings of being "in-betweenness" because some may still live with parents and financially depend on parents while others begin careers and start to move out on their own (Arnett, 2000). Additionally, emerging adults often report conflicting views on adulthood. Some report that they have already reached adulthood while others report having not yet achieved adulthood or experienced the anxieties related to this transitional time period (Nelson et al., 2013). Many national longitudinal studies lump the age group of 18 – 25 years old into adulthood, but according to Arnett, this period of life represents a unique demographic due to this population's similarities in life patterns, biological changes, and cognitive development (Arnett, 2000).

Emerging adulthood also is a time when parent-child relationships are being reevaluated in terms of young adult autonomy. Close relationships between parent and young adult are still important; however, acknowledgement from parents that their children have become fellow adults is significant as family dynamics change (Bartle-Haring, 2002). Research focuses on the "social connectedness" or closeness of families, especially in families of southwestern regions or "the bible belt" of the United

States, where religion and family are firmly interconnected institutions. In these families, religion is often foundationally infused into their norms and behaviors. Also, religious institutions often offer access to needed resources and care for the family, thereby creating a stronger social network supporting the family (Bartkowski, Xu, & Levin, 2008). Current research on religion and the family often focuses on family outcomes, such as marital satisfaction and duration (Hirschberger, 2009), specific parenting strategies, and parenting dependability (Wilcox, 1998; Wilcox, 2004). These studies report compelling findings that parent-youth religious agreement (i.e. religious concordance) is important in maintaining productive relationships between parents and their young adult children and in developing better intergenerational relationships. However, to our knowledge, no research has investigated whether concordance or discordance in religious beliefs and practices between parent and young adult is associated with better mental health outcomes during emerging adulthood.

Over time, researchers and practitioners have found that promotion of asset building in youth can act as a protective factor and prevent initiation of adverse behaviors (Atkins, 2002; Vesely et al., 2004; Aspy et al., 2004; Oman et al., 2004; Aspy et al., 2012) during adolescence and carried through young adulthood. Examples of youth assets that are beneficial for overall health include healthy relationships, family support, and a strong sense of self-esteem (Catalano, 2002). These youth assets provide positive experiences and equip young people to handle difficult situations and, hopefully, to carry important life skills into a productive adulthood. This study utilized two youth assets (relationship with mom; relationship with dad) that have been shown

to be effective in protecting against health risk behaviors in youth and emerging adults (Oman, 2009).

This dissertation reports finding from 3 different studies. The first study investigated associations between self-reported religiosity and mental health outcomes of depressive symptoms and suicide ideation in young adult participants. Two specific youth assets were included to examine their potential mechanistic influence in the potential relationships between religiosity and depression and suicide-related behaviors and the influence of assets in young adult participants. As mentioned earlier, assets to be included in analyses are young adults' relationships with mom and dad. In addition, the 2nd and 3rd study determined whether parent/young adult discordance/concordance in self-reported religiosity are associated with self-reported depressive symptoms and suicide ideation among young adult respondents. Religiosity was measured using the Duke University Religion Index (DUREL), which is a five-item scale. Depressive symptoms were measured using a 6-item depression scale called Kutcher's Adolescent Depressive Scale (KADS – 6). Suicide ideation and attempts was measured using an item from The National Longitudinal Study of Adolescent to Adult Health (Add Health) Survey. Both scales and the suicide item from Add Health survey have been validated and shown to be useful in assessment of mental health outcomes among adolescents and young adults (Koenig, Kutcher, & Harris, 2013). More information on these tools is provided in detail in the methods section. Having a better understanding of the influence of religiosity on young adult-parent relationships and mental health outcomes will provide researchers and practitioners with a clearer picture of the complex

influence of religiosity practices and beliefs if integrated into mental health programming and intervention

Purpose of Study

This dissertation included three related studies. The specific purpose of Study 1 was to determine the associations between specific beliefs and practices that are reflective of religiosity (i.e., religious service attendance, prayer time, and importance in believing in God) and depressive symptoms and suicide ideation in young adults. The specific purpose of Study 2 was to investigate the relationship between religiosity discordance/concordance between parent and child and self-reported depressive symptoms among those young adults. Finally, the specific purpose of Study 3 was to investigate the relationship between religiosity discordance/concordance between parent and young adult child and self-reported suicide ideations among those young adults. In addition, parent relationship assets were assessed in each study to determine their influence on these relationships. The research questions for the three studies include:

Research Questions for Study 1:

RQ1a: Are measures of individual religiosity beliefs and practices (3 religiosity subscales) in young adults associated with self-reported depressive symptoms in young adults? Do young adult assets (i.e., relationship with mom and relationship with dad assets) influence this relationship?

RQ1b: Are measures of individual religiosity beliefs and practices (3 religiosity scales) in young adults associated with self-reported suicide ideation in young

adults? Do young adult assets (i.e., relationship with mom and relationship with dad assets) influence this relationship?

Research Questions for Study 2:

RQ2: Is the concordance/discordance between young adults and parent pairs on measures of religiosity associated with self-reported depressive symptoms in young adults? Do youth assets (i.e., relationship with mom and relationship with dad assets) influence this relationship?

Research Questions for Study 3:

RQ3: Is the concordance/discordance between young adult and parent pairs on measures of religiosity associated with self-reported suicide behaviors in young adults? Do youth assets (i.e., relationship with mom and relationship with dad assets) influence this relationship?

Significance of Study

Understanding possible influences of religiosity on mental health outcomes (depressive symptoms and suicide ideation) among young adults can improve future efforts to create strategies and programs to promote overall mental health in this population. Incorporation of religious and spiritual dimensions within counseling and/or health promotion interventions for clientele with higher religiosity may prove to be beneficial to health outcomes. Examining religiosity variables and their mental health associations may identify specific religiosity beliefs and practices that are associated with healthier young adult outlooks. This study is a foundational assessment

of the association between parent-young adult child religiosity discordance/concordance and young adult depressive symptoms and suicide ideation. Better understanding of this influence also can guide inclusion of programming components that maximize the potential benefits or minimize the potential adverse impact of this spectrum of influence. Targeting the relationship between parent and young adults and its effect on mental health behaviors will advance future research and inform early youth and youth risk prevention programs.

Delimitations

Delimitations for this study include:

- Data for this study were analyzed to investigate associations between religiosity variables of parents and young adults, youth assets, and young adult mental health outcomes.
- Analysis of data from this study was conducted during spring and summer of 2017.
- Participants include young adults between the ages of 18 - 24 years of age. A corresponding parent or guardian also was included.
- Participants were recruited from colleges and universities in a southwestern state.
- Data were collected at one point in time in 2017.

Limitations

Limitations of this study include:

- Data presented in this study cannot disprove or prove a causal relationship between the variables.

- The sample represents young adult aged individuals from one geographical location, and therefore, cannot be generalized to other age groups or areas.
- Religiosity and mental health variables were measured using self-report methodology and, therefore, response bias is possible if participants were not completely honest when answering the survey questions.

Assumptions

Assumptions for this study include:

- Participants understood survey questions and instructions.
- Participants answered questions with accuracy and honesty.

Operational Definitions

Concordance – For this study, concordance refers to the degree to which responses provided by a parent and her/his young adult child were in agreement (Merriam-Webster.com, 2016).

Depression - Depression is a subset of a larger group of diseases classified as *depressive disorders.* Depression can be referred to as having a consistent presence of sadness, emptiness, and/or frequent irritable dispositions. *Depressive symptoms* include feeling sad, hopeless, and pessimistic. Depression also causes decreased pleasure in activities that a person would normally enjoy, low self-esteem, fatigue, sleep disturbances, and inability to concentrate (APA, 2013).

Discordance – For this study, discordance refers to the degree to which responses provided by a parent and her/his young adult child were different or in disagreement (Merriam-Webster.com, 2016)

Religion – Religion is a multidimensional construct that includes beliefs, behaviors, rituals, and ceremonies that may be held or practiced in private or public settings, but are in some way derived from established traditions that developed over time within a community. Religion is a system (a) to enable attachment to the transcendent, and (b) to promote an understanding of altruism or sense of responsibility to others working together in a community (Koenig, 2008).

Religiosity – Religiosity definition is operationalized in this study as the participation in some form of religious social structure or activity (e.g., participation in church and/or religious groups, and/or prayer time) (Koenig, 2009). In addition, this definition includes a spirituality component which is defined as a multifaceted entity broadly defined as a personal journey for understanding answers to critical and final questions about one's own existence, one's relationship with the transcendent or sacred, and meaning which may or may not lead to the creation and advancement of religious rituals and community building (Koenig, 2008).

Suicide – Death brought about from self-directed harmful behavior with intent to die as an outcome of the behavior. From the Add Health survey, the suicide item states, "During the past 12 months, did you ever seriously think about committing suicide?" Responses range from "no serious thoughts" to "4 or more attempts" (Shneidman, 1977).

Suicide attempt –Suicide attempt is an unsuccessful action with the intent on killing oneself (Shneidman, 1977).

Suicide ideation – Suicide ideation is consideration, planning and/or thoughts directed towards killing oneself (Shneidman, 1977).

Youth assets – Youth assets is a set of skills, strategies, opportunities, relationships, and/or behaviors that help youth build better competencies to overcome life challenges and help youth successfully transition from stages of adolescent development into adulthood. (Oman et al., 2010; Oman et al., 2013).

CHAPTER 2

Literature Review

This review describes the current literature available regarding the topics of depression in young adults, suicide in young adults, religiosity, the correlations between religiosity and health, and more specifically the associations between religiosity and depression and suicide in young adults. The review also addresses current literature on young adult development and the influence of the parent/young adult child relationship on positive outcomes related to depression and suicide in young adults.

Depression in Young Adults

Depression is characterized as an affective disorder that can be described as a despondent or sad mood. Often symptoms include withdrawal from activities that would normally interest the individual, excessive fatigue, inability to concentrate, weight gain or loss, inappropriate guilt, and recurrent thoughts of death (CDC, 2013). Depression should not be confused with simply having a "bad day." According to the American Psychiatric Association, the criteria for diagnosing depression includes that the individual must have five or more depressive symptoms (i.e., feeling sad, hopelessness, fatigue, inability to concentrate, etc.) that last continuously for at least two weeks (APA, 2013). This diagnosis is significant because having one depressive episode increases the risk of experiencing another by 50%, (NIMH, 1985). Unfortunately, depression often goes untreated and unrecognized in young people despite the documented effectiveness of psychotherapy and medications. Untreated depression often leads to more severe consequences, such as impaired performance at

school and work, poor interpersonal relationships, and suicide. The Centers for Disease Control and Prevention has labeled depression as a chronic disease and indicates that depression is related to behaviors such as smoking, physical inactivity, alcohol consumption, and conditions such as sleep disturbances (CDC, 2013).

The National Alliance on Mental Illness (NAMI) reported that young adults ages 18 – 25 have an 18 – 25% higher likelihood of experiencing depressive symptoms compared to adults 50 years and older. (NAMI, 2015). Another study from the National Survey of Drug Use and Health indicated that 8% of college student attending school full time had experienced at least one bout of major depressive episode (NSDUH, 2012). Major depressive disorder (MDD) is a related debilitating disease in which one episode of MDD was reported in about 18% of adolescents in U.S. (Fergusson et al., 2002; Lewinsohn et al., 1999). Research suggests that once one episode occurs in childhood, repeated episodes often follow throughout an individual's life (Mueller et al., 1999). Further, after the onset of depression in adolescence, there is a 45-66% chance for MDD to occur repeatedly by the age of 24 years old. There is even some evidence to suggest that MDD is still likely to happen again even after successful intervention is provided (Mueller et al., 1999). MDD has been shown to have negative health consequences in emerging adults that include decreased academic performance in college and job performance. MDD has been associated with increased college drop-outs rates due to related symptoms of poor sleep patterns, loss of interest, lowered concentration levels, and generalized fatigue (Svanum & Zody, 2001; Sheets et al., 2013). Short and long-term outcomes of depression can involve psychological and social impairment, suicide, substance abuse, and future depressive episodes (Thapar et

al., 2012).

Suicide in Young Adults

When describing the difference between suicide and suicide ideation, Durkheim suggested that suicide attempts and suicide are an extreme form of coping with negative thoughts (Durkheim, 1951). Consistent with Durkheim's statement, this study supports that suicidal ideation and suicidal attempts are similar in nature rather than distinct behaviors. Suicide ideation refers to thoughts and plans to kill oneself, whereas a suicide attempt is an unsuccessful action taken with the intent to kill oneself. We also propose that suicide ideation, even though a precursor to suicide attempts, is lower on the continuum of suicidal behaviors and a less violent behavior than suicide attempts.

According to the CDC, suicide is the third leading cause of death in adolescents and young adults 10 - 24 years old. This mortality rate translates to 4,600 deaths per year in this age group (CDC, 2015). Research suggests that those young people that survive suicide attempts are more likely to attempt suicide again, incur repeated injuries from non-suicidal violent behaviors such as fighting, and/or suffer other emotional issues including depression (CDC, 2014). In the US, 16 percent of high school youth reported having thoughts of suicide or suicide ideation and 8 percent reported attempting suicide at least once during high school (CDC, 2014). More than 157,000 young people per year report receiving emergency medical care in the US for self-inflicted injuries and other self-harming behaviors (CDC, 2014).

The literature suggests that the hope of obtaining relief from severe mental hardships, such as emotional trauma or persistent depression, is a prime motivation for

suicidal behaviors (i.e., suicide attempts and ideation) (Pompili, 2010). Suicide ideation (i.e., thoughts of and planning to kill oneself) and suicide attempts are often attributed to extreme psychological pain and emotional imbalance, separate from specific causal difficulties in peer and family relationships (Shneidman, 1998). Psychological pain and distress, whether internally or externally invoked, typically are manifestations of depression. These depressive events that often have their origin in the social environment can occur repeatedly over a period of time. This means that these causal factors are often not acute, but may be a persistent, tormenting problem for the individual (Shneidman,1998). Some examples of internal psychological stressors that are triggered from the social environment include, but are not limited to, hopelessness, feelings of abandonment, low self-esteem, loneliness, and shame (Olie et al., 2010; Troister and Holden, 2010).

Psychological distress, including depression beginning in early childhood, can often worsen over time. However, improved social and parental support may mitigate the pain, even into adulthood (Shneidman, 1996). Conversely, for some individuals, the effects of psychological injuries and repetitive psychological offenses (e.g. continuing emotional abuse or neglect) often lead to more instability and difficulty in social environments, resulting in perhaps even less support from salient social relationships including peers, romantic partners, and parents, which can create further isolation and worsening distress. Consequently, in young adults that are depressed and psychologically injured, attempting suicide may be viewed as a way to find relief from this persistent and severe pain (Shneidman, 1996).

For emerging adults (ages 18 – 25 years old), this time period is described as a

period of self-actualization when young adults are at increased risk for unhealthy behaviors, including alcohol and drug use, smoking, unsafe sexual practices, as well as suicide attempts (Arnett, 2000; Kessler et al., 2005). There are few studies that address suicide behaviors in young adult populations. However, Kisch et al. (2000) examined the National College Health Assessment Survey data collected between 1999-2000 and found that 1/10 of college students reported serious contemplation of committing suicide during the previous school year (Kisch et al., 2000). College students also were more likely (11%) to contemplate committing suicide compared to people that were 25 years or older (8%) (Kisch et al., 2000). Another study also reported that 53% of college students reported depressive symptoms since they had started college and 9% of college students had contemplated suicide since they had started college (Furr et al., 2001). By contrast, Furr et al. (2001) indicated that smaller religious-based colleges may provide opportunities for service, fellowship, and spiritual growth for students, and that suicide may be perceived as less acceptable in this environment (Furr et al., 2001). Based on these findings, researchers and practitioners should consider addressing emotional health outcomes as a priority health issue for young adults. This study explored the association between religiosity and suicidal thoughts and behaviors in order to better understand possible mechanisms that may contribute to or protect against this mental health concern in young adults.

Definition of Spirituality and Religiosity

There has been a great deal of controversy over the definition of spirituality and religiosity terminologies despite the amount of research that has addressed or referenced

these two terms. Many authors have their own specific definition of religiosity. Because of this, solidifying a working definition has become increasingly difficult, especially in the US where diversity of ethnicity and culture are widespread (Hackney, 2003; Koenig, 2008; Koenig, 2009). Consequently, researchers have begun to use a broader religiosity/spirituality perspective that is meaningful to a larger audience and can capture a wide range of subjective experiences in a diverse group (Hill, 2000; Hill & Pargament, 2003; Koenig, 2008). The broad religiosity/spirituality term is defined in a more individualistic perspective that encompasses experiences that are related to the human spirit or soul as opposed to physical or material factors such as physical health, or a building, or monetary wealth (Oxford dictionaries, n.d.). Some definitions of spirituality include positive psychological components that are reflected in terms like connectedness, well-being, life meaning, happiness, and purpose-driven (Benson, 2003). In the past, spirituality was grounded in the historical traditions of religion and religious practices. Now, this concept is often extended beyond religion to more subjective and self-defining experiences in terms of personal life fulfillment. So the statement, "I'm spiritual, not religious" is indicative of a personal concept of spirituality that does not depend on inclusion of religious traditions and practices (Koenig, 2008).

In order to perform research, it is vital to have clear and concise definitions that can be used to quantify, examine, and describe the components of spirituality. In Koenig's book, *Medicine, Religion, and Health: Where Science and Spirituality Meet*, the author suggests that spirituality can be operationalized in two ways that include: 1) a broader definition for clinical application in order to be more inclusive for the general population and 2) a more precise definition in order to offer measureable factors or

attributes that could be used effectively in empirical research. For this study, we used the definition Koenig described that is relevant to research. He described spirituality as

> *…the personal quest for understanding answers to ultimate questions about life, about meaning, and about relationship to the sacred or transcendent which may or may not lead to or arise from the development of religious rituals and the formation of community*. (Koenig et al., 2001, pg. 18).

Religion is often grounded in a system of practices and beliefs that is adopted and observed by the family, passed down from generation to generation, and often supported by community. Religion can be viewed as a set of morals of conduct that are adhered to in a group, as well as a set of scriptures and teachings that designate purpose and meaning of the world, sense of duty that people have to one another, or intangible concepts such as life after death (Koenig, 2008). Religious practices are often driven by "intrinsic" or "extrinsic" motivations, where persons may see value in religion as a means to an end (i.e., intrinsic) or may participate in religious activities as a means of gaining social power or position and/or financial advantage (i.e., extrinsic) (Koenig, 2008). A definition of religion also should incorporate public (e.g., church organizations) and private (e.g., prayer time) components, as well as organizational and non-organizational activities. Examples of organizational activities include behaviors such as attending synagogue, temple, mass, or church, while non-organizational activities include behaviors such as prayer, meditation, watching or listening to religious broadcasts, wearing clothing or jewelry with religious symbols, and participation in many other private rituals (Koenig, 2008). Therefore, the working

definition that encompasses the above mentioned facets includes:

> an "*organized system of beliefs, practices, rituals, and symbols designed to (a) facilitate closeness to the sacred or transcendent (God, higher power, or ultimate truth/reality) and (b) to foster an understanding of one's relationship and responsibility to others in living together in a community"* (Koenig, 2001).

Religiosity and Mental Health

Over the past several decades, an extensive amount of research has been conducted in order to better understand the relationship between religiosity and psychological well-being, primarily in adult and older adult populations. Research findings have shown inconsistencies in associations between religiosity and mental health (Hackney, 2003; Koenig, 2001; Yonker, 2012). In Koenig's reviews of primary research, some findings support an inverse link between religion and mental health and even fewer report no link (Koenig, 2001).

Two studies related to the youth population report a detrimental association between religiosity and mental health and suggested that this detrimental association may be linked to rigid denominational beliefs of participants. In some cases, individual beliefs in rigid religious doctrines can differ greatly from societal norms, and conflict is created between the religious and societal pressures. These conflicting pressures to conform can potentially cause distress and problems adjusting in youth, and may increase the likelihood of developing depression and carry out into adulthood (Ellison et al., 2001; Schnittker, 2001). However, the majority of the research supports a beneficial

relationship between religiosity and mental health. In general, religiosity may provide psychological and social resources that improve health outcomes and reduce risk for poor mental health outcomes, such as depression and suicidal behaviors in adult life. In Koenig's review of 724 quantitative studies, 476 reported statistical significant beneficial associations between religion and mental health (Koenig, 2001 & Koenig, 2009). This systematic review examined five mental health outcomes including depression, suicide, substance abuse, anxiety, and psychotic disorders. Two-thirds of 93 observational studies found a statistically significant inverse correlation between religiosity and depression or depressive symptoms, with high religiosity scores correlating with low depression/depressive symptom scores. Four of the remaining 34 studies found a significant positive correlation, with high religiosity scores correlating with high depressive disorder scores (Koenig, 2001b). In another review, 22 longitudinal studies were examined. Fifteen of these found that higher religiousness at baseline was associated with fewer symptoms of depression and quicker remission from depression when tested at follow-up (Koenig, 2009). Of the 8 randomized control trials examined by Koenig, 5 showed significant improvements in depressive symptom relief in response to a psychological intervention with a religious-based approach as compared to the control intervention that used a secular-based or standard care approach (Koenig, 2009).

There are a number of questions that remain unanswered despite the large number of studies (over 1200) published on the topic of health and religion. Clinical trials are especially important because they provide a scientific framework for examining the effectiveness of interventions. Research also can determine whether

these interventions are successful in a clinical setting, whether they improve quality of life, or if a treatment plan is being followed properly. However, clinical trials are limited by a lack of generalizability. Therefore, larger populations used in prospective studies are needed as well (Koenig, 2001).

When examining literature that reports associations between religiosity and suicide, most studies found that higher rates of religiousness were associated with lower rates of suicide attempts. In a systematic review conducted prior to 2000, there were a total of 68 studies included that studied the relationship between suicide and religious beliefs and practices. In this review, 84% (57/68) of studies reported that higher religiousness was associated with lower rates of suicide, lower rates of suicide ideation, and negative attitudes towards suicide. The remainder (9 studies) reported no link between religiosity and suicidal behaviors (Koenig, 2009). Generally, religious doctrine and scripture document the prohibition of suicide and many denominations teach that suicidal behaviors lead to an afterlife of turmoil or eternal exclusion from heaven (Van Tubergen et al., 2005). This direct prohibition of suicide may help explain the inverse relationship between suicidal behaviors and religiosity. One study reported that religiosity provides protection to the individual by way of surrounding the person with support and a caring group or community to help (Dervic et al., 2004).

Relationship between Religiosity, Depression, and Suicidal Behaviors in Young Adults

There are equivocal research findings related to the relationship between religiosity and suicidal behavior in adolescents. Osman et al., (1996) reported a

negative relationship between depression and moral objection to suicide that was grounded in religion among inpatient psychiatric adolescents. Interestingly, another study involving juvenile delinquents undergoing psychiatric treatment reported no relationship between depression and moral objections toward suicide (Cole, 1989). A number of factors may contribute to the inconsistency in findings related to this association. There are fewer prospective studies than cross-sectional studies that have investigated adolescent depression. The small number of longitudinal studies and great variability in results in previous studies also complicates recommendations for practical use (Dew et al., 2010).

One confounding issue was the utilization of homogeneous samples, specifically Caucasian American Christians (Dew et al., 2010). Another problem is the varied definitions and measurements of religion, where some categorize religiousness as the number of church services attended and others categorize it as an amount of time involved in devotion and prayer (Koenig, 2001). Finally, there is other literature to support associations between high levels of negative religious coping, religious conflict, and doubt with matters of God and faith and depression (Pargament, 1997). The consensus appears to be that those individuals who feel rejected by God or abandoned by the church or other religious group have greater rates of depression (McConnell et al., 2006). Other inconsistencies that may create confusion in terms of research results involve poor use of multivariate analyses. Most studies control for demographics, but other variables, such as psychosocial factors are not mentioned. Dew et al. (2010) recommend controlling for other factors including family closeness and substance abuse as these can be mediating factors that influence the relationship between religion and

depression in youth (Dew et al., 2010). This current study addresses some of these inconsistencies (e.g. controlling for family closeness), while utilizing a general population rather than only youth diagnosed with a psychological disorder.

One recent prospective study by Carpenter, Laney, & Mezulis (2012) examined the relationship between stress, depressive symptoms, and religious coping in 111 adolescents and young adults (Females = 80), ages 14 – 20 years old in a northwestern U.S. community. Religious coping was defined as certain spiritual and religious cognitive, interpersonal, and behavioral responses that can have both protective and negative effects on mental health. These coping strategies are called positive and negative religious coping (Pargament et al., 1998). Carpenter et al. (2012) hypothesized that both positive and negative religious coping moderate the link between stress and depressive events. Thus, positive religious coping may be associated with a decrease in the effects of stress on depressive symptoms and negative religious coping would be associated with magnified effects of stress on depressive symptoms. They also hypothesized that religious commitment may be a moderator of religious coping. Activities including the use of prayer and participation in religious services are considered activities related to religious commitment. Researchers discuss that negative life events or stress in youth are associated with depressive symptoms and the initial occurrence of depressive episodes. The onset of depression and depressive symptoms can vary in different individuals depending on the severity, frequency, and type of negative event. There are several factors that can influence development of depression and perception of stress, religious coping being one of these.

Carpenter et al. (2012) is the first prospective study to examine the relationship

between stress and depression using religious coping as a moderator. This 12-week prospective study used self-reported questionnaires to measure stress, depressive symptoms, and positive/negative religious coping. Questionnaires were completed at baseline, once/week for 8 weeks, and again at follow-up (12 weeks). Hierarchical linear modeling was used to analyze data and showed that only negative religious coping was a significant moderator for stress and depressive symptoms in adolescents/young adults. So those adolescents/young adults with higher negative religious coping and high stress occurrences had higher depressive symptoms. The association between stress and depressive symptoms with positive religious coping as a moderator was marginal and headed in the direction of significance at follow-up. However, after 12 weeks, the relationship remained non-significant. Those adolescents/young adults with high religious commitment had more of a main effect on the relationship between stress and depressive symptoms than those with higher negative religious coping. One limitation to the Carpenter et al. (2012) study was the utilization of a solely adolescent/young adult sample. Being able to evaluate the religious coping in the parents of these adolescents/young adults would be useful in determining depressive symptoms and religious coping patterns that are similar to parental patterns. Our study used parent and youth concordance/discordance in religiosity to predict young adult depressive behaviors while using youth assets as a moderator. By examining these specific variables, we hope to add to the body of knowledge as it pertains to young adult mental health.

A national longitudinal study by Nkansah-Amankra et al. (2011) investigated the relationships between religiosity, psychosocial factors, and suicidal behaviors in

youth/young adults over a 14-year period during which the participants aged from adolescence to early adulthood. The study utilized data from the U.S. National Longitudinal Study of Adolescent Health (Add Health) that included 9412 participants that were interviewed in four waves from 1994 to 2008. Participants began the study while in grades 7-12 during the 1994-1995 school year, and were 26-34 years of age at Wave 4. Data analysis utilized a Generalized Estimating Equations (GEE) procedure within SUDAAN 10.02 software to fit models for the dependent variable (suicidal behaviors) and the religiosity and psychosocial predictor variables, accounting for the correlated structure of the datasets over the four waves. The primary analysis in this study investigated the relationship of religiosity at baseline with suicidal behaviors reported in the subsequent waves. Other variables were included representing demographic and psychosocial factors. The following variables were sequentially added to the model: age, gender, race, religiosity, self-esteem, general support, and CES-D score (representing a measured level of depression). In order to assess suicidal thoughts during the interviews, participants were asked whether they had seriously considered committing suicide in the past 12 months (yes or no). They then were asked how many times they had attempted suicide in the past 12 months (none, once, twice, 3 or 4, >5). Religiosity was measured in terms of public religiosity (attendance in church service or church activities) and private religiosity (individual importance of religiosity and frequency of prayer). Each variable was categorized on a 3-point scale. Social support was measured with an 8-item questionnaire on a 5-point scale that yielded an overall index number for the perceived level of social support from peers, parents, teachers, and other adults. Parental support was measured by a questionnaire with a 5-

point scale addressing (1) the adolescent's closeness to each of his/her parent, (2) the perceived level of care from each parent, and (3) the perceived level of demonstrated affection from each parent. Self-esteem was measured by a modification of the Rosenberg Self Esteem (RSE) questionnaire, where participants responded on a 5-point scale describing their level of agreement with statements about self-perception. Depressive symptoms were measured by a modified version of the Center for Epidemiologic Studies Depression Scale (CES-D), which assesses the participants' feelings in the past week on a 4-point scale.

The results of the analysis showed that, in adjusted models, weekly church attendance (a score of 2 on the public religiosity item) was associated with reduction of suicide ideation at Wave 3. The study also showed that females had a higher risk of suicidal behaviors, but the risk was reduced as the youth grew into adulthood. Across all waves, low paternal support was shown to be significantly associated with suicidal behaviors in both genders. The study showed statistically significant declining levels of religiosity and also a declining incidence of suicidal behavior as the participants aged from Wave 1 to Wave 4. The researchers focused their discussion on the importance of development of social supports, improved self-esteem, and better paternal and maternal support. The authors indicate that the risk of future suicidal behavior is not substantially different for individuals with high religiosity levels versus for those who had little church attendance at Wave 1. However, the article noted that obtaining an accurate measurement of religiosity is psychometrically challenging. The findings related to the importance of paternal and maternal support provide a rationale for exploring Religiosity concordance/discordance between parent and child as a potential

predictor of subsequent suicidal behaviors.

Overall, religiosity in youth/young adults is believed to be beneficial as a protective mechanism in prevention of depression and suicidal behaviors. Researchers have indicated the importance of identifying specific factors related to religiosity (e.g. social network support, avoiding drug use, coping strategies, etc.) that may be significantly associated with mental health disorders such as depression and suicidal behaviors among youth/young adults (Nkansah-Amankra, 2012). One aim of this study is to explore religiosity and spirituality factors in a diverse sample of young adults so that we can better identify mechanisms that will be most beneficial in prevention of suicidal behaviors and depression.

Parent-Young Adult Religiosity Concordance

One significant factor in the life-success of young adults is the quality of their relationship with their parents (Armsden, 1986; Cotterell, 1992; Van Wel et al., 2000). A number of studies have found that stronger bonds between parents and young people are linked to greater autonomy (Peterson & Bush, 1999), healthier relationships with peers (Birkeland et al., 2014), increased self-esteem (Bulanda et al., 2009), psychological well-being and life satisfaction (Jiang et al., 2013). In fact, one study suggests that positive relationships between parent and child are often a better predictor of overall quality of life and well-being of the child than family structure (Demo, 1992). In terms of the psychological well-being of young people, many studies have determined an inverse relationship between the quality of relationship between parent-youth and psychological distress and depression levels among youth (Falci, 2006; Armsden et al., 1990; Lau and Kwok, 2000; & Tolan et al., 1997). In James Coleman's

Theory of Social Capital (Coleman, 1988; Coleman, 1990), he stressed the importance of the family dynamic of social connectedness. More specifically, Coleman emphasized the importance of closeness between parents and their children and the interconnected social network of this relationship, which he called "intergenerational closure" or social network closure. These closure relationships have been shown to contribute to the development of children's competencies and can help them gain life skills that benefit children through adolescent and adult years (Coleman 1988; Coleman, 1990).

One factor in the family dynamic regarding closeness or connectedness of parent and child is the issue of concordance or discordance in religiosity values and practices (e.g., participation in religious activity, prayer time, church attendance). The current study investigated the relationship between parent/young adult concordance or discordance in religious values and practices. Exploring specific aspects of religious views in both parent and young adults hopefully will provide much needed insight into how religiosity concordance or discordance may play a role in mental health outcomes in young adults. Religion and family are closely related institutions in the United States. Religion permeates the traditions of family events, often having sacred significance. Social psychologists have found compelling evidence suggesting that religious agreement is a critical factor in relations between parents and their adult children (Myers, 2004; Pearce & Axinn, 1998).

Perceptions of higher quality intergenerational relationships have been documented in self-report surveys when adult children reported similar religious beliefs as their parents (Stokes & Regnerus, 2009). One study by Stokes & Regnerus (2009)

utilized data from the National Longitudinal Study of Adolescent Health to research religious discordance between parents and their adolescent children and the effects this had on family relations. The study collected three key types of data on religion: religious affiliation, religious salience, and attendance patterns. These measurement categories are consistent with other sociological research concerning religiosity, recognizing that religion is a multidimensional construct (Pargament,1997). The study (Stokes & Regnerus, 2009) measured parent-adolescent religious discordance by assessing responses related to (1) religious affiliation (e.g. Mainstream Protestant vs. Evangelical Protestant, etc.), (2) religious salience (i.e. how important religion is to the individual), and (3) religious attendance (i.e. how often attending services, etc.). Parent-child relationship quality was measured by a five-measure questionnaire completed by the adolescent concerning the relationship with the responding parent. Overall, the findings indicate that religious discordance predicts lower quality relationships between parents and teenage youth. The researchers indicated that these findings are consistent with the solidarity paradigm (Silverstein & Bengston, 1997), which suggests that higher consensus in religious topics measured between parent and child is associated with higher affection (Stokes & Regnerus, 2009). The type of discordance that appears most harmful to parent-child relationship quality is religious salience, with affiliation and attendance being less damaging. Parent/child relationship quality was shown to be significantly lower when the child viewed religion as less important than his/her parent. The researchers also found that intergenerational relationships were not adversely affected when the youth is the participant who values religion more highly than the parent.

The Stokes & Regnerus (2009) study also found that discordance in religious salience (i.e. where the parent places higher importance on religion than the child) tends to be associated with poor relationships when the parent and youth have the same religious affiliation and the parent reports being an Evangelical Protestant. The study categorized the respondents into one of four groups (Evangelical Protestants, Black Protestants, Mainstream Protestants, and Catholics). Findings suggest the possibility that Evangelical Protestants may be uniquely more likely to experience significant conflict due to religious discord because of the deeply held value of religious congruency (e.g. both attend the same church/denomination consistently) and close family relationships. This means that many Evangelical Protestant families put high emphasis on religion as a core family focus and having discord concerning religious views could lead to conflict over religious differences. Recent political and cultural influences regarding family structure also could create additional stress in families of Evangelical Protestant families because of the on-going struggle to maintain the traditional family structure (Stokes & Regnerus, 2009).

A study by Kim-Spoon and McCullough (2012) explored the connection between parents' religiousness and their child or children's psychological adjustment later in life. The study also looked at how the religiousness of the parents moderates or mediates processes that influence the adjustment of the child. The mediating processes of interest were (1) the adolescent's religiousness and (2) the quality of the relationship (attachment) between the parent and child. Adolescent religiousness was primarily viewed as a result of the process of intergenerational transmission of the parent's religious views and practices (e.g., church attendance and time spent at religious

activities) to the child. The researchers made a differentiation between organizational religiousness (e.g. religious service attendance) and personal religiousness (e.g. meaning and importance of beliefs to the individual). The study used data from 322 adolescents (mean age = 12.63 yrs., 45% female, 84% Caucasian) and their respective parents. The results suggest that parent organizational religiousness is significantly directly related with boys' organizational religiousness. Differences in organizational religiousness between parents and corresponding boy/girl adolescents were associated with increases in internal and external psychological behaviors. Interestingly, for both boys and girls, there was a significant direct (detrimental) relationship between parental personal religiousness and adolescent internalizing symptoms (e.g. withdrawal or depression), but only where the parent-child attachment was low. Parent-child attachment score was assessed using a self-report questionnaire that has a 12-item survey called the Inventory of Parent Attachment. The association was not evident when the parent-child attachment was found to be high. The researchers suggest that the relationship between parent and child in terms of communication, trust, and closeness may be a more relevant predictor of internalized (e.g. withdrawal, depression, etc.) and externalized symptoms (e.g. aggressive or delinquent behaviors) than either parent or adolescent religiousness. Although this study reported beneficial relationships between teen psychological well-being and religious concordance between young teens (ages 12 – 15 years old) and parents, no research has been conducted to investigate the relationship between psychological well-being in young adults and religious concordance in parent-young adult child.

A study by Barry et al. (2010) reviewed recent research findings regarding religiosity and spirituality in young adults as they transition to adulthood. The authors noted the difficulty in developing a clear and concise definition of religiosity and spirituality. However, they defined religiosity in terms according to Miller and Thoresen (2003), which bases the concept on religious practices and beliefs. Spirituality, in contrast, encompasses transcendent and personal factors that are not necessarily translated into religious practices or doctrines (Miller & Thoresen, 2003).

Miller & Thoreson discuss the psychosocial, cognitive, and biological development of emerging adults and suggest that during this time the brain is developing capabilities for advanced reasoning about complex and abstract topics such as spirituality and religiosity. Puberty is complete by age, so the body functions fully as an adult. The individual is perceived by others as an adult, which fosters a focus on identity development for the young person. Identity development is theorized to promote social development and intimacy in close relationships (Erikson, 1968). As young people transition into adulthood, their thought processes become more abstract and principled, so that they may begin to emphasize the importance of beliefs over religious practices (Elkind, 1970). Elkind's theory of religious development describes the role of parents as a significant factor in supporting the development of beliefs and reasoning regarding religion and spirituality (Elkind, 1970). In America, research has suggested that the frequency of religious practices tend to decline during emerging adulthood (Koenig et al., 2008), when religious beliefs tend to be steady or to increase slightly (Astin & Astin, 2003; De Haan & Schulengerb, 1997, & Lefkowitz, 2005). The Koenig (2012) acknowledges some positive outcomes that appear to be related to

religiosity and spirituality, such as healthy behaviors and attitudes, high self-esteem, academic achievement, and personal-emotional adjustment. Studies have found conflicting results regarding the connections between religious activities during one's youth and the religiosity of the emerging adults, but emotional attachment to parents appears to support the tendency for an emerging adult to maintain the religious beliefs of the parents (Koenig, 2012). Other factors influence emerging adults in regards to religiosity and spirituality such as peers, adults (other than parents), and the media. Culture, religious community, and gender are also factors that affect the variability of religious and spiritual development in emerging adults (Arnett, 2004; Barry et al., 2010; Brown, 2006).

Positive Youth Development

The Positive Youth Development (PYD) theory and framework is a recent approach to addressing youth behavior by enhancing the skills, abilities, and interests of young people (Catalano et al., 2002). The PYD approach was created as an alternative to prior methods that focused on the problems encountered by teens as they grow into adulthood. The former approaches, by focusing on problems, often shaped the impression that the teenage years are a perilous and difficult period, and that young people require harsh correction and strict discipline in order to prevent undesirable behaviors. Some children experience specific problems (e.g., attention deficit disorder, parental abuse, learning disabilities, antisocial conduct, substance abuse, violence, delinquency) that merit particular assistance from parents, teachers, counselors, etc. The PYD approach assumes that the vast majority of young people do not suffer from deep emotional or physical wounds that inhibit their ability to learn and develop

effectively, and are able to engage and contribute to society in an important way (Damon, 2004). An important fundamental perspective of PYD is that "problem-free is not fully prepared" (Catalano et al., 2002), meaning that the absence of problems does not ensure a successful progression into adulthood. The approach recognizes that all youth are somewhat resilient and must experience some challenges in order to grow and develop fully into adulthood. The PYD theory supports the concept that youth benefit substantially from establishing and building assets and/or skills that protect against negative influences that may promote unhealthy behaviors and is seen as beneficial if these assets are carried into adulthood (Catalano et al., 2002). Some risk behaviors that have been researched that could potentially be mitigated by the development of these skills and abilities are drug and alcohol use and premature sexual activity (Oman et al., 2004; Haegerich et al., 2016; Aspy et al., 2014; Oman et al., 2013).

Youth Assets

The purpose of the Youth Asset Study (YAS) was to identify factors that serve as protectors/facilitate a decrease in risk behaviors among young people. The study also provides useful tools for the development of programs to improve youth skills as a means to increase positive youth health outcomes. Another framework or theory related to youth assets is called Positive Youth Development (PYD). As mentioned earlier, PYD incorporates beneficial assets to build youth skill sets, abilities, and interests in order to foster healthy behaviors that can be continued through adulthood. Individuals possessing youth assets or positive youth development assets have a reduced likelihood of engaging in certain risk behaviors (Catalano, 2002). The period during which teens transition to adulthood is considered critical because youth begin to develop a deeper

sense of self and begin to make important choices that carry forward into the adult life. This critical time also can be confusing and challenging to youth, especially without sufficient guidance or skills to navigate the many problems that may arise (Lenz, 2001). Health Promotion practitioners often use assets-based approaches to help build protective factors within the individual and the social environment. This is done to reduce the occurrence of health risk behaviors and to encourage the adoption of positive and successful choices during the youth transition into adulthood (Oman et al., 2004; Aspy et al., 2014; Oman et al., 2013; Cheney et al., 2015). As youth acquire assets, they begin to build life skills, relationships, and personal competencies that encourage the implementation of healthier behaviors in individuals (Lerner, 2005). Overall, youth who have acquired these assets are considered to be more likely to participate in healthy activities and choices, and are somewhat less likely to engage in risk behaviors. Existing studies have explored the relationship between youth assets and participation in risk behavior, such as premature sexual activity, alcohol and drug use, and adolescent violence (Oman, 2013; Haegerich, 2014; Aspy et al., 2014; & Cheney et al., 2015). For example the YAS study (Oman et al., 2013), which was a longitudinal study that involved collection of data over 4 years (5 waves) from adolescents and their parents/guardians, found that several assets at baseline (Wave 1) were significantly associated with lower risk at Waves 2-5 of initiation of sexual intercourse, lack of birth control use at last sex, and pregnancy. Also, Cheney et al. (2015) found that the baseline assets relationship with mom, responsible choices, parental monitoring, family communication, and aspirations for the future were associated with lower odds of youth tobacco use in later adolescence. One asset measured in the YAS that is related to

religiosity has been associated with reduction of risk behaviors (i.e. use of time [Religion]). Oman et al. (2004) found that spending time participating in religious activities was associated with reduced consumption of alcohol by female youth. Aspy et al. (2004) found that religious involvement was associated with not carrying a weapon. Similarly, Vesely et al. (2004) found that use of time in religious activities was significantly associated with not having engaged in sexual intercourse.

Data were analyzed for potential interactions between specific young adult assets and religiosity/spirituality and health outcome variables. Based on a literature search, the following 2 assets have established validity and reliability in the research published related to many health outcomes, including sexual behaviors, drug & alcohol use, fighting, and others) (Aspy et al., 2014; Kegler et al., 2005; Oman et al., 2004; Tamara et al., 2013). The asset, relationship with mom is backed with research suggesting that closeness and strong bond between the mother and child can play a protective role against many negative health outcomes (Aspy et al., 2014; Kegler et al., 2005; Oman et al., 2004; Tamara et al., 2013). The mother has much influence in teaching strong interpersonal skills (e.g., better social and communication skills, interpersonal problem solving), in which increased interpersonal skills have also been linked to improved mental health (Gunlicks-Stoessel, 2010; Mufson, 2004; Oman et al., 2004). The second asset, relationship with father, has research supporting that closeness and strong bond with the father may be protective against many negative health outcomes (Aspy et al., 2014; Kegler et al., 2005; Oman et al., 2004; Tamara et al., 2013). The father also has influence over building strong interpersonal skills in the child, this improved interpersonal skill set (e.g., better social and communication skills,

interpersonal problem solving) within youth and young adults has been linked to improved mental health outcomes (Gunlicks-Stoessel, 2010; Mufson, 2004; Oman, 2004).

CHAPTER 3

Methodology

This study utilized a cross-sectional design to examine the associations between young adult religiosity and depression and suicide ideation/suicide attempts as well as between parent-young adult religiosity comparisons (i.e. religiosity concordance or discordance) and mental health outcomes in young adults. Self-report data was collected from college students aged 18 – 24 years old and a parent counterpart during Spring 2017. An approximately 15 minute, computer-based survey was administered to young adult and parent pairs in the state of Oklahoma. Recruitment was conducted on college and university campuses and by distribution through a professional list serve. G-power calculations determined that a sample size of approximately 568 youth/parent pairs (1136 total participants) was necessary to assure adequate power for analysis. The recruitment involved convenience sampling and snowball sampling based on recommendations from college administrators/professors/instructors, organization (i.e., clubs, sororities, fraternities) representatives, web listings (i.e., Facebook and organizational web pages), face-to-face contact with students in class, mass email to students, or participant referral by sharing the study flyer. Potential participants were given additional information about the study and the link to survey via email, text, phone calls or face-to-face in the classroom per permission of instructor/professor and approval of college/university IRB. Upon approval by the University of Oklahoma IRB and each university/college site, recruitment began. Because of limited access to language translations, the survey was an English version only. Prior to survey access, informed consent was provided via online survey by each participant. Once data

collection was completed, statistical analysis was performed using password-protected computer. All data was anonymous.

Participants

The study participants included male and female college students or young adults, ages 18 – 24 years old and their parent/guardian counterpart from a variety of college and universities a southwestern state.

Inclusion criteria for this study include:

1. Young adults/college students between the age of 18 – 24 years old and one parent or guardian for each young adult in Oklahoma City, OK and surrounding counties.
2. Primary language of the household must be in English

Exclusion criteria for this study include:

1. Individuals under the age of 18 and over the age of 24.

Instrumentation

The 40-item young adult survey consists of four parts including mental health, religiosity, youth assets, and demographics. The 21-item parent survey consists of 2 parts including religiosity and demographics. Overall, the questionnaire is written at no more than a 6th grade reading level and took approximately 15 minutes for completion.

Rationale for Use of the Kutcher's Adolescent Depression Scale (*KADS-6)*

The purpose of the Kutcher's Adolescent Depression Scale – 6 items (KADS – 6) is to assist in identifying depression and depressive symptoms in youth/young adults ages 12 – 22. This instrument was developed by pediatricians, health researchers, and health professionals. Originally, it was used to assess students attending high schools and youth subjects that were being diagnosed and treated for Major Depressive Disorder in clinical care settings. There are three different versions of the KADS (i.e., 6, 11, and 16 item versions). The 6-item version is often used in clinical facilities where the scale is used for screening for depression as well as for evaluating the effectiveness of certain interventions in adolescents with depression who are under the care of a physician. The KADS – 6 also has been used by a variety of professionals including social workers, school psychologists, primary care physicians, nurses, counselors, and researchers. It also has been used in other settings, such as schools and hospitals. In these settings, KADS is used to assess depressive behaviors in youth that may be at risk for depression or have been recognized as exhibiting symptoms of a depressive disorder.

KADS-6 is a self-report instrument with a reading level of sixth grade, which is very useful in the diagnosis of depression in youth at younger ages (APA, 2013). Participants are able to complete this survey independently. The KADS – 6 is shorter than many other assessment instruments, has been validated in many countries, and has been recommended by experts over many other depression scales (Chehil & Kutcher 2012). KADS – 6 uses a four point Likert scale to score each item, with scores ranging from 0 – 3. Total scale scores can range from 0 – 18, where scores between 0 – 5 are interpreted as "probably not depressed" and scores ranging from 6 – 18 are interpreted

as “possible depression, more thorough assessment needed.” Response options include 0 as “hardly ever” to 3 – “all of the time.” Further, item #6 allows health practitioners to examine risks for suicide ideation, where the item assesses whether or not the participant has had any thoughts, plans, or actions about committing suicide or causing self-harm.

LeBlanc et al. (2002) performed a validation study by comparing the accuracy of the diagnosis of the KADS-16, 11, and 6 (long and short versions) to other previously validated diagnosis tools, which included the well-known Beck Depression Inventory (BDI) (Beck, Ward, Mendelson, Mock, & Erbaugh, 1961) and an interview evaluation instrument called the International Neuropsychiatric Interview (MINI) version 4.4 (Lucrubier et. al., 1997). Three hundred nine of 1,712 students in 7^{th} – 12^{th} grades that scored higher than 15 on the BDI were invited back to complete the KADS-16, KADS-11, KADS-6, and the BDI again. The MINI interview was also used to confirm the accuracy of the tools in diagnosis of major depressive episodes (MDE) in the students. A total of 161 of 309 students completed this second round of assessment. Once students completed the depressions scores, a receiver operating characteristic (ROC) analysis was implemented to establish the accuracy of 16 items used in the KADS. The curve analysis of the ROC indicated 6 specific items of the 16 that were most effective in identifying MDE in participants. The analysis also determined that these 6 items were just as effective as the BDI and exceeded the diagnostic effectiveness of the full 16 item scale. Futher KADS-6 reached a sensitivity score of 92% and specificity rate of 71%, which has not been attained by other similar instruments. LaBlanc et al. determined that the KADS-6 is effective as a means of

determining MDE in adolescents.

In 2003, Kutcher performed psychometric analyses of the KADS and determined good internal consistency reliability for the KADS-6, 11, and 16 (i.e., Cronbach's α 0.80, 0.84, 0.82 respectively), thereby demonstrating appropriate psychometric properties of the KADS-6 for diagnosis and treatment efficacy outcomes in clinical settings. Additionally, the KADS-6 has been used in a variety of populations, clinical samples, and across the care continuum making it a beneficial instrument that can be used as a part of the diagnostic assessment process. KADS-6 is also an appropriate measurement tool for evaluation of interventions related to depression in youth/young adults ages 12 – 22 years old (Kutcher, 2003).

The current study utilized the KADS-6 to identify depressive patterns in a young adult/college student population. KADS-6 scores were produced indicating a level of depression for each youth participant and were utilized as a dependent variable in the analysis. Depression scores were converted 2 ways depending on analysis method. For linear regression analysis, depressive symptom scores were recorded as a continuous variable with scores ranging from 0 - 18. For logistic regression analysis, depressive symptom scores were converted into dichotomous variables where 0 (i.e., scores ranging 0 – 5) indicated that the participant did not report depressive symptoms and 1 (scores ranging 6 -18) indicated that the participant did report depressive symptoms.

Rationale for Use of Suicide Item from Add Health Survey

Suicide behaviors were assessed using 2 items from the first wave of The National Longitudinal Study of Adolescent Health (Add Health) (Bearman et al., 1997) which was an in-home interview utilizing laptop computers related to sensitive topics

(e.g., sexual activity and substance use). The audio computer-assisted (ACASI) survey instrument was also utilized as another way to ensure privacy concerning sensitive topics (Hallfors et al., 2000) once parental consent and youth assent were given from the participants. One reason the Add Health was selected over other important national survey is because it brings unique strengths. For example, compared to the YRBS which measures students 9 – 12th grade, Add Health offers a larger national representative of 7th – 12th grades. In addition, the YRBS only offered suicide risks item options, where the Add Health was able to utilize both suicide ideation and attempts through their Wave 1 data collection. Suicidal ideation is assessed with a dichotomous response of "yes" or "no." Only those participants answering "yes" to the first item will be able to answer the second item that uses categorical responses of the number of suicide attempts ranging from 0 – 4 or more times.

Rationale for Use of the Duke University Religion Index (*DUREL)*

The 5-item religiosity measure is a short, convenient scale intended for epidemiological studies, both cross-sectional and prospective, to investigate relationships between health outcomes and religion in a variety of populations. The DUREL has been utilized in more than 100 published research studies that have been conducted worldwide in 10 different languages and was intended to measure religiosity in Western religions, such as Christianity, Judaism, as well as Islam. Therefore, measurements of religiosity may be less accurate in individuals practicing Eastern religions including Buddhism or Hinduism. Further adaptations and validations of the DUREL would need to be made in order to measure religiosity in individuals of

Eastern-type religions.

The DUREL was selected for this study based on previous research recommendations to incorporate 3 dimensions of religiosity. Empirical evidence suggests that there are 5 dimensions of religiosity, however, only 3 dimensions are important in health related research (Larson, 1986; Hoge, 1972; Koenig, 1997). These three dimensions include organizational religiosity, non-organization religiosity, and subjective or intrinsic religiosity. Organizational religiosity describes activities in a public or community settings such as a church or mosque, where participants attend religious services or other religious group activities (e.g., bible study group or prayer group). The first item of the DUREL describes this first dimension of religiosity. This item asks about frequency of religious service participation. The non-organizational religiosity component describes behaviors or activities that are outside the community of organized religion or activities and are performed in private (e.g., reading of scripture or prayer, meditation, watching religious television shows, etc.) The second item on the DUREL captures the non-organizational religiosity dimension. The item asks for frequency of religious activities performed privately. The final dimension of intrinsic religiosity describes an individual's personal beliefs, feelings, or motivation that involve practices of religion that reflect a major commitment in someone's life (Koenig, 1997). Allport and Ross give another similar definition of intrinsic religiosity. They state,

> *"Persons with this orientation find their master motive in religion. Other needs, strong as they may be, are regarded as of less ultimate significance, and they are, so far as possible, brought into harmony with religious beliefs and prescriptions. Having embraced a creed, the*

individual endeavors to internalize it and follow it fully. It is in this sense that he lives his religion" (Allport, 1967).

The last three items of the DUREL describe this third dimension of religiosity where the items specifically assess intrinsic religiosity.

Rationale for Use of Items from the Youth Assets Survey (*YAS)*

The YAS team devoted 2 years of preliminary work from the time the youth assets were conceptualized to when the items were established to measure assets. Preliminary studies consisted of meetings and interviews with key informants and focus groups (Kegler, 1998). Based on these activities, the research team identified common themes of potential assets. A literature search was executed in order to identify appropriate items to measure each asset. Initially, a total of nine assets were proposed and two pilot studies were conducted to help evaluate and refine the items used to measure these assets. These nine assets are as follows: family communication, peer role models, future aspirations, responsible choices, community involvement, cultural respect, good health practices (exercise/nutrition), use of time (sports/groups/religion), non-parental adult role models (Oman, 2002b). Factor analysis and reliability testing were performed to determine the psychometric properties of the Youth Assets Survey. Results from factor analysis suggested that the construct measurements of the youth assets were reliable and valid. All subscales had Cronbach alphas of .60 or higher and all factor loading scores were .40 or higher (Oman et al., 2002b). Later, the scale was expanded to a 17-asset scale using factor analysis and test-retest analysis producing correlations. Final results established Spearman and interclass correlations that ranged

from .60-.82 and .58-.87 respectively (Oman et al., 2010). Assets selected for inclusion in this study include aspirations for future, positive peer role model, relationship with mom, relationship with dad, and non-parental adult role models.

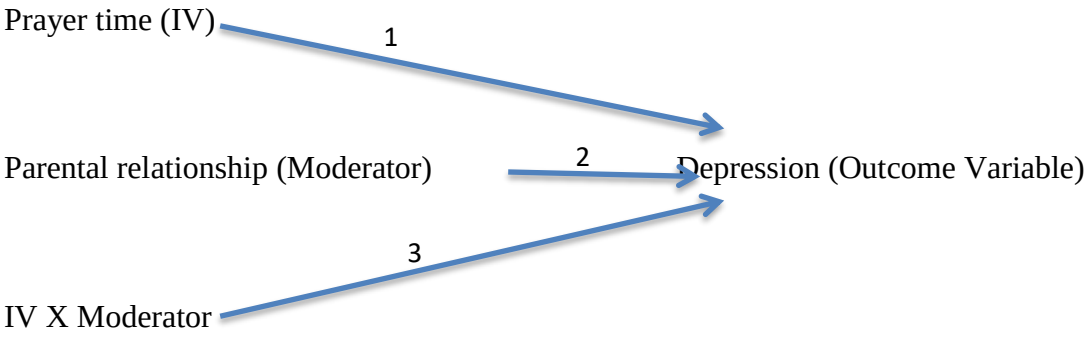
Youth Assets

Assets were selected based on their documented associations with potential mental health outcomes related to the PYD framework for young people (Aspy et al., 2014; Kegler et al., 2005; Oman et al., 2004). For this study, our 2 specific assets were selected based on a literature search, the following 2 assets have established validity and reliability and in the research published related to many health outcomes, including sexual behaviors, drug & alcohol use, fighting, and others) (Aspy et al., 2014; Kegler et al., 2005; Oman et al., 2004). Research suggests that closeness and strong bonds or important relationships between young people and key individuals (e.g., relationship with mom and dad) can play a protective role against many negative health outcomes (Aspy et al., 2014; Kegler et al., 2005; Oman et al., 2004; Tamara et al., 2013). Often these important individuals with strong relationships with the adolescent has much influence in teaching strong interpersonal skills, such as better social and communication skills, interpersonal problem solving, in which increased interpersonal skills have also been linked to improved mental health (Gunlicks-Stoessel, 2010; Mufson, 2004; & Rodriguez, 2015).

Assets were analyzed to determine if they are moderators between the independent and dependent variables. To explain the role of a moderator further, Baron & Kenny (1986) define and describe the function of a moderator variable. They suggest

that there are certain properties of variables that make the variable a moderator. Specifically, they indicate that a moderator variable's function is to act independently from the independent variable, but very well may impact the strength of the relationship between the independent and dependent variable. Figure 1 represents an example of the three causal paths (e.g. 1, 2, & 3) between the independent variable (IV) of prayer time and the outcome variable of depression, and any interaction that may be produced by the youth asset moderator (e.g., parental relationship asset). In this study, we explored all three paths; however, the moderator hypothesis was assessed in order to identify a significant interaction (Path 3).

Figure 1: Sample Moderator Model



Measures

Control variables:

Five demographic variables were included in the analyses as control variables: young adults reported gender, age, race/ethnicity, family structure, and parent education. Family structure was assessed with the question, “How many parents do you live with?” For parent education, participating parents were asked for the highest education level of both parents. Potential responses were: 1) both parents had less than a high school education, 2) at least one parent had completed high school, GED, or some college, and 3) at least one parent had a bachelor’s degree or higher. In previous research, these same demographics were use as control variables and shown to have influence on other outcome variables (e.g. alcohol and drug use) (Oman et al., 2004; Oman et al., 2009).

Religious Fundamentalism Scale

The Revised Religious Fundamentalism Scale (Rev-RFS) was used to measure religious fundamentalism. Religious fundamentalism is operationally defined as "the belief that there is one set of religious teachings that clearly contain the fundamental, basic, intrinsic, essential truth about humanity and diety" (Altemeyer & Hunsberger, 1992). Specifically, we were interested in knowing if people view their beliefs as "unchangeable practices" (Altemeyer & Hunsberger, 1992). This religious fundamentalism score was used as a control variable because of the possibility that these beliefs may have some influence on the relationship between religiosity and mental health outcomes. Total scores range from 9 – 108, higher scores indicating more

fundamentalism, and lower scores indicating lower fundamentalism. Reverse coding was needed for some of the items (i.e., 2, 4, 7, 9, 10, and 12) with opposite responses.

Research Questions for Study 1:

RQ1a: Are measures of individual religiosity beliefs and practices (3 religiosity scales) in young adults associated with self-reported depressive symptoms in young adults? Do young adult assets (i.e., relationship with mom and relationship with dad assets) influence this relationship?

RQ1b: Are measures of individual religiosity beliefs and practices (3 religiosity scales) in young adults associated with self-reported suicide ideation in young adults? Do young adult assets (i.e., relationship with mom and relationship with dad assets) influence this relationship?

Data Analysis - Research Question 1:

SAS 9.4 software was used to perform this analysis using an alpha at 0.05. Descriptive statistics were utilized to examine study variables. Chi square associations were performed to examine the association between each religiosity variable and outcome variables of depression and suicide. A logistic regression analysis was then utilized to examine possible associations between religiosity variables and depression and suicide ideation while controlling for age, ethnicity, gender, parent education, family structure, and religious fundamentalism. Two-way interactions between control variables and assets were examined for interactions and added individually to create the fully adjusted model.

- Frequencies were produced for the study variables.

- Chi square associations tested the association between religiosity variables and other study variables
- Logistic regression was used to test the associations between depression and suicide.
- Initial model reported unadjusted association between religiosity variables and suicide and depression
- Final model reported adjusted association using age, gender, ethnicity, parent education, family structure, and religious fundamentalism were assessed
- Interactions were tested
- Each asset was added individually to the fully adjusted model, and then tested for interaction of religiosity variables and assets.

Research Questions for Study 2:

RQ2: Is the concordance/discordance between young adult and parent on measures of religiosity associated with self-reported depressive symptoms in young adults? Does young adult asset (i.e., parental relationship asset) influence this relationship?

Concordance/Discordance Score

Religiosity items (5 items) were utilized for both the participants and their parent/guardian to assess similarities (concordance) and differences (discordance) in religiosity scores between young adults and their parent/guardian counterparts. By computing the difference between the answers of the parent and young adults, variables of concordance/discordance were created for each new item.

For both research questions 2 and 3, a concordance/discordance (C/D) score was established as a continuous variable. The concordance/discordance scores for each item were calculated by subtracting the young adult score from the parent score (P_i-Y_i) for each parent/young adult pair. Negative values would indicate that the young adult response was higher than parent response. Positive values would indicate the lower response rate for the religiosity item. Higher scores (i.e., - 4 or 4) would indicate more religiosity discordance between parent/young adult pairs and conversely lower scores (0, -1, 1) indicate more religiosity concordance. This scoring method is intended to allow for comparison of concordance/discordance values.

Data Analysis - Research Question 2:

The analyses were performed utilizing SAS 9.4 software with alpha set at 0.05. Frequencies and descriptive statistics were produced for the study variables. A score for discordance/concordance was given for each religiosity item as well as an overall score.

A linear regression analysis was performed utilizing survey data. Chi square associations were tested to evaluate the association between religiosity variables and other study variables. Linear regression was performed for the concordance/discordance in religiosity variables, controlling for gender, age, race/ethnicity, family structure, and parent education in order to evaluate associations between religiosity concordance/discordance values with depression of the study. Two-way interactions between religiosity concordance/discordance and demographics were also evaluated.

Assets were tested for interactions as each asset was added individually to the fully-adjusted model. A cross-sectional analysis was performed to determine associations between religiosity concordance/discordance and health outcome variables. Gender, age, race, parent education level, and family structure were analyzed as control variables. The following bullet points briefly summarize the above mentioned analysis plan:

- Means and standard deviations were produced for the study variables and determination of discordance/concordance of religiosity in young adults and parents.
- Paired t-test was performed to determine significant comparisons between the young adult and parent religious scores.
- Pearson's correlations were performed to identify significant correlations between the mom and dad assets, religiosity variables, and religious fundamentalism in order to identify issues related to multicolinearity.
- Linear regression was used to test the associations between religiosity concordance/discordance variables depression.
- Unadjusted association between the religiosity concordance/discordance variables and depression were determined.
- Adjusted association using age, gender, ethnicity, parent education, and family structure were assessed.
- Interactions were tested
- Concordance/Discordance score was coded as a continuous variable where C/D difference score = $(P_i - Y_i)$

Research Questions for Study 3:

RQ3: Is the concordance/discordance between young adult and parent on measures of religiosity associated with self-reported suicide ideation in young adults? Do young adult assets (i.e., relationship with mom and relationship with dad assets) influence this relationship?

Similar to RQ2, the 5 religiosity items were utilized to assess concordance and discordance of religiosity characteristics in study participants. These concordance/discordance scores were compared between the parent and young adults, and a final concordance/discordance score was assigned to both participants and corresponding parents. Scores were compared again and young adult participants were assigned as either having religious agreement or disagreement. Just as with research question 2, linear regression was performed to further clarify the dimensions of the religiosity measured in the survey.

Data Analysis - Research Question 3:

Data Analysis

The concordance/discordance (C/D) in religiosity scores were computed for parent and young adult pairs. One C/D score was assigned to parent/young adult pairs, which ranged from -5 to 5 (i.e., ORA and NORA subscales) or -4 to 4 (IR subscale) for the DUREL. C/D scores were established as a continuous variable. The concordance/discordance score for each item were calculated by subtracting the young adult score from the parent score (P_i-Y_i) for each parent/young adult pair. Negative values indicate that the young adult response was higher (higher religiosity) than parent response. Positive values would indicate that the parent score was higher (higher

religiosity). Higher scores (i.e., - 4 or 4) would indicate more religiosity discordance between parent/young adult pairs and conversely lower scores (0, -1, 1) indicate more religiosity concordance. This scoring method is intended to allow for comparison of concordance/discordance values.

SAS 9.4 software was used to perform this analysis using an alpha at 0.05. Descriptive statistics were utilized to examine study variables. Chi square associations were performed to examine the association between each religiosity variable and outcome variables of depression and suicide. A logistic regression analysis was then utilized to examine possible associations between religiosity variables and depression and suicide ideation while controlling for age, ethnicity, gender, parent education, family structure, and religious fundamentalism. Two-way interactions between control variables and assets were then examined for interactions and added individually to create the fully adjusted model. The following bullet points briefly summarizes the above mention analysis plan:

- Frequencies were produced for the study variables.
- Chi square associations tested the association between religiosity variables and other study variables.
- Logistic regression was used to test the associations between religiosity variables and suicide.
- Initial model reported unadjusted association between religiosity variables and suicide and depression.
- Final model reported adjusted association using age, gender, ethnicity, parent education, family structure, and religious fundamentalism.

- Interactions were tested.

CHAPTER 4

Manuscript 1

Associations between Religiosity/Spirituality and Mental Health Behaviors in Young Adults

Abstract:

The purpose of this study was to evaluate the association between religiosity and mental health outcomes among young adults. Young adults (n=775) from colleges and universities in a southwestern state were surveyed to assess associations between young adult depressive symptoms and suicide ideation, religiosity beliefs, and protective assets of the relationships with dad and mom. Logistic regression, which produced odds ratios (ORs), was used to determine significant associations between religiosity and depression and suicide ideation. Findings indicated significant inverse associations between higher scores in higher levels of organizational religious activities (OR range = 0.208 - 0.555), higher levels of non-organizational religious activities (OR range = 0.282 - 0.399), and the most positive responses to the three items measuring intrinsic religiosity (OR range = 0.216 - 0.489) with young adult depressive symptoms during the last week. In addition, higher scores on the religiosity subscales were significantly associated with fewer reports of suicide ideation in the last 12 months. OR findings suggest that participants with higher scores in religiosity had less risk for development of depression and suicide ideation. Overall, religiosity beliefs and practices appear to be associated with fewer depressive symptoms and suicide ideation. Inclusion of religious/spirituality-oriented components may be important to include in mental health programming for those emerging adults that report having high religiosity.

Keywords: Young adults, emerging adults, suicide, depression, mental health, religiosity

Introduction/Background

Over the past few decades there have been conflicting reports regarding the role of religiosity/spirituality in the development of young adults' mental health. To operationalize religiosity, Koenig (2008) offered a conceptually useful definition of the terms religiosity and spirituality for research and clinical application. Religiosity was broadly defines as a belief system of rituals, practices, and values designed to encourage closeness to a higher power (e.g., God), and to encourage positive relationships and responsibilities to those living together within a community. On the other hand, spirituality can be defined as a personal journey to becoming more enlightened on questions about the meaning of life and about having a relationship with a higher power which can, but not always, lead to religious activities, and rituals (Koenig, 2008). For the purpose of this study, both religiosity and spirituality will be referred to as religiosity.

Research evaluating the relationships between individuals' religiosity and their psychological well-being have often been inconsistent (Koenig, 2008). However, a majority of research in this area supports a positive relationship between mental health and religiosity. Religiosity provides psychological and social resources, which appear to reduce depressive symptoms, suicidal risk behaviors, and improve overall mental health outcomes (Koenig, 2001; Koenig, 2008; Schnittker, 2001). In a 2008 review, researchers examined 115 articles on religion and spiritualty in young people, as it relates psychiatric symptoms (i.e., substance use, depression, anxiety, suicidality, and delinquency) (Dew et al., 2008). Ninety-two percent of the articles reported at least one significant relationship between positive mental health and religiosity (Hackney &

Sanders, 2003). Most research investigating the relationship between religious effects and mental health has been conducted with adults and older adults; little is known about this relationship in the emerging adult population (ages between 18 – 25 years old). Given this preponderance of support for the relationship, current calls are for research emphasizing the mechanisms that produce religious effects, rather than for research related to the existence of religious effects (Nooney & Woodrum, 2003).

Depression in Young Adults

Depression is an affective disorder that is characterized by a despondent or sad mood (CDC, 2013). Often symptoms include withdrawal from activities that would normally interest the individual, excessive fatigue, inability to concentrate, weight gain or loss, inappropriate guilt, and recurrent thoughts of death (CDC, 2013). According to the American Psychiatric Association, the criteria for diagnosing depression includes having five or more depression symptoms (i.e., feeling sad, hopelessness, fatigue, inability to concentrate, etc.) that last continuously for at least two weeks (APA, 2013). Depression often goes untreated and unrecognized in young people despite the documented effectiveness of psychotherapy and medications. Untreated depression often leads to more severe consequences, such as impaired performance at school and work, poor interpersonal relationships, and even suicide. The Centers for Disease Control and Prevention (CDC) has labeled depression as a chronic disease, and indicates that depression is related to behaviors such as smoking, physical inactivity, alcohol consumption, and conditions such as sleep disturbances (CDC, 2013).

The National Alliance on Mental Illness (NAMI) reported that young adults, 18 – 25 years old, have 18 – 25% more likelihood to experience depressive symptoms

compared to adults 50 years and older (NAMI, 2015). Another study from the National Survey of Drug Use and Health suggested that 8% of full time college students experienced at least one major depressive episode during 2010 (NSDUH, 2012). A major depressive episode (MDE) can be debilitating, and is characterized by a person experiencing depressed mood, loss of interests, or other depressive symptoms (e.g., changes in eating patterns, sleep patterns, or self-image) for at least 2 or more weeks (APA, 2013). Having one episode was reported in about 18% of adolescents in the U.S. (Lewinsohn et al., 2003). Research suggests that once an episode occurs in childhood, repeated episodes often follow throughout an individual's life (Mueller et al., 1999). Further, if a person experiences depression in adolescence, there is a 45-66% chance of occurrence of repeated episodes of MDE's by the age of 24 years. There is some evidence to suggest that MDE is still likely to reoccur even after successful intervention is provided (Mueller et al., 1999).

Depression disorders has been shown to have negative health consequences in emerging adults including decreased academic and job performance. In addition, depression has been shown to be associated with increased rates of drop-out from college due to associated symptoms such as poor sleep patterns, loss of interest, lowered concentration levels, and generalized fatigue (Svanum and Zody, 2001; Sheets et al., 2013). Short and long-term outcomes of depression can involve psychological and social impairment, suicide, substance abuse, and future depressive episodes (Thapar et al., 2012).

Suicidal Behaviors in Young Adults

Suicide is the third leading cause of death for young people ages 10 – 24 years, taking the lives of over 4600 youth every year (Hamilton, 2013). Young people that survive suicide attempts are at more risk for attempting suicide again, and often suffer from other emotional issues including depression, and other forms of self-violence (Suicide Prevention, 2014). Annually, more than 157,000 youth engage in self-harming behaviors that require emergency medical treatment. Data also indicate that 1 in 12 college students have experienced thoughts of suicide (suicide ideation) that sometimes involve detailed plans for carrying out the act (AAS, 2007). In 2002, the American College Health Association (ACHA) released its report, *Healthy Campus 2010,* which included an objective (Objective 18−1) to lower the rate of suicides and attempts on college campuses in the United States from 1.5% to 0.53%. ACHA issued this objective across all campuses and categorized suicide in college students as a serious public health crisis (ACHA, 2010).

Effects of Religiosity on Suicidal Behaviors and Depression

Research suggests that the need to find relief from mental hardship is a prime motive for suicide ideation and suicide attempt in adolescents (Pompili et al., 2009). Suicide ideation and suicide attempts are often attributed to severe psychological pain and emotional imbalance, separate from specific underlying family and peer relationship problems (Shneidman, 1998). The psychological distress and pain, typically expressed as depression, is due to repetitive or multiple offenses from the social environment such as shame, loneliness, abandonment, abuse, low self-esteem, and hopelessness (Olie et al, 2010; Troister, 2010). Psychological distress, including

depression from childhood, may worsen over time leading to additional adjustment difficulties as adolescent's transition into adulthood (Reinherz, et al. 2006). While depressed and psychologically injured individuals may see suicide as a way to find relief from the incessant severe pain of depression, increased parental or other social support may mitigate the pain even into adulthood (Mann et al., 2005).

Religiosity in young persons is thought be influential in their social lives as well as a protective mechanism against suicidal behaviors (Huguelet et al., 2007; Moreira-Almeida et al., 2006). Research has suggested the importance of exploring specific determinants of religiosity and spirituality that are associated with suicidal behaviors among young adults (Nkansah-Amankra et al., 2006).

Youth Assets

Youth assets are protective factors that decrease risk behaviors such as sexual activity, alcohol and drug use while increasing skills to ensure positive health outcomes in youth (Catalano, 2004; Oman et al., 2002a; Oman et al., 2002b; Lerner, 2005). The transition from childhood to adulthood is a time when teenagers begin to develop a stronger sense of self, as they reach maturity and begin to make important life choices. Often this transition can be challenging and confusing. Assets can help build life skills, personal competencies, and youth relationships that in turn impact the implementation of healthy behaviors and are hopefully carried into adulthood (Lerner, 2005). In general, young people with assets are less likely to participate in health risk behaviors (Oman et al., 2002a; Oman et al., 2002b). Current studies have investigated the relationship between youth assets and involvement in risk behavior, such as alcohol and drug use,

adolescent violence, and early sexual activity (Oman, 2013; Haegerich, 2014; Aspy et al., 2014; & Cheney et al., 2015).

Purpose of the Study

The overall purpose of this study was to explore associations between religiosity and depressive symptoms and suicide ideation in young adults. In addition, this study explored whether parental assets (i.e., relationship with mom and relationship with dad) from the Youth Asset Study (Oman et al., 2002a; Oman et al., 2002b) influence the relationship between religiosity and mental health outcomes in young adults.

Methods

This study evaluated young adults (n=775), mostly attending public and private colleges/universities in the Southwest. Data were collected Spring 2016 from students ranging from 18-24 years old. Participants were required to read and write in English, since the survey was only offered in one language. Following approval of this study from researcher's IRB, the questionnaires were administered via Qualtrics, an online survey provider. Recruitment methods included convenience and snowball sampling, where students were recruited by contact through organizations, word of mouth from other participants, in class recruitment, distribution of flyers, and administrator/ instructor recommendations. Data was collected anonymously and stored on a password-protected computer.

Instrumentation

The survey consisted of 40-items containing four sub-parts, including: 1) mental health, 2) religiosity, 3) parental relationships (assets), and 4) demographics. The survey used previously validated scales, which were all written at a 6^{th} grade level or

less. The survey took approximately 15 minutes to complete. Some of the items included somewhat sensitive topics, including those related to depression and suicide behaviors. Given the sensitive nature of these survey topics, an algorithm was used instead of recording participants' names, so that surveys would be non-identifiable and anonymous.

Measures

KADS-6. The Kutcher's Adolescent Depression Scale-6 items (KADS-6) was used to assess depressive behaviors in young people, as well as to assess young people ages 12 – 22 that may be at risk for depression or have exhibited symptoms of a depressive disorder. It has been used in a variety of settings (e.g., hospitals and schools), by different professionals (e.g., social workers, primary care physicians, researchers, school psychologists, and counselors), and is often used in clinical settings for diagnosis, and determining effective treatment outcomes (Kutcher, 2003; LaBlanc et al. (2002). Previous studies have noted the KADS-6 has good internal consistency reliability (Cronbach's $\alpha = 0.80$) (LaBlanc et al., 2002, Chehil & Kutcher, 2012). This survey has been validated in different countries, and is frequently recommended by professionals (Chehil & Kutcher, 2012). Item responses on the instrument ranged from 1-4, with total scores ranging from 6-24. Scores between 6-11 were interpreted as "probably not depressed" and scores of $\geq$12 were interpreted as "possible depression, more thorough assessment needed." (LaBlanc et al., 2002). For the purpose of this study, the KADS-6 was used to identify depressive symptoms (dependent variable) in a young adult population. For logistic regression analysis, KADS scores were converted to 0 (i.e., "probably not depressed" or 1 (i.e., "probably depressed.")

Suicide Items for Add Health Survey. Suicide ideation and suicide attempts were evaluated utilizing two items from The National Longitudinal Study of Adolescent Health (Bearman et al., 1997). Participants answered "yes" or "no" to this first item (what is the item?), and if they answered yes, the survey linked them to another item, which asked them to report the number of suicide attempts, which has response options of 0, 1, 2, 3, or 4 or more attempts.

Duke University Religion Index (DUREL). The DUREL is a 5-item self-report Likert scale that measures three dimensions of religiosity, including: 1) organizational religious activities (ORA), which measures participation in activities in a community setting such as religious service attendance, 2) non-organizational religious activities (NORA), which measures participation in religious activity in a private setting or performed in private such as prayer time or watching a religious television show, and 3) intrinsic religiosity (IR), which assesses the spiritual dimension of an individual, which includes a person's personal beliefs, motivation, or feelings related to involvement in religious practices that reflect deep commitment in a person's life (Koenig, 1997). The first DUREL item measures ORA and has a response range from 1 (never) – 6 (more than once per week). The second DUREL item measures NORA and has a response range from 1 (never) – 6 (more than once per day). The final three DUREL items measure IR and have responses that range from 1 (definitely not true) – 5 (definitely true for me).

Youth Assets Survey (YAS). A 4 year longitudinal study of youth assets was conducted that collected data from adolescents and their parents (n=1,117). The youth assets survey (YAS) examined health risk behavior in adolescents and other factors,

(e.g., community, family, and individual) that protect youth from the adoption of health risk behaviors or possible adoption of certain assets. Psychometric assessment found that the YAS was a valid and reliable instrument (Oman et al., 2002b). This study utilizes 2 assets from the YAS, the relationship with mom (mom asset) and relationship with dad (dad asset). Each question had a 4 point Likert scale and then dichotomized to "yes" or "no." If the young adult responded to "yes" to at least 2 out the 4 items, she was classified as having the asset (Oman et al., 2002b). Assets were used as moderator variables in the logistic regression to determine if there were interactions that influenced the relationship between the religiosity and mental health outcomes. In other words, to determine if the assets impact the relationship between the independent and dependent variable.

Control Variables. Demographic variables were statistically controlled. Young adults reported their gender, age, and race/ethnicity. In addition, family structure was assessed via the young adults with the item "How many parents do you live with?" Parent education was assessed as the highest education level of a parent.

Religious Fundamentalism. Religious fundamentalism also was evaluated as a control variable. The Revised Religious Fundamentalism Scale (Rev-RFS) is a self-reported 12 item scale (Altemeyer & Hunsberger, 1992). Religious fundamentalism can be defined operationally as an individual's belief in the absolute authority of the sacred or belief in a single set of religious text or teachings about basic truths of a diety or humanity (Altemeyer & Hunsberger, 1992). Items on the scale are intended to determine the degree to which young adults hold fast or are unwavering to their religious beliefs, and therefore, were controlled for the influencing effects they had on

the relationship between mental health outcomes and the religious constructs. RFS item responses ranged between 1 (very strongly disagree) – 9 (very strongly agree), with a score of 1-3 indicating low fundamentalism, 4-6 indicating medium fundamentalism, and 7-9 indicating high fundamentalism. Total scores for Rev-RFS ranged from 12 - 108 (Altemeyer & Hunsberger, 1992). Reverse coding was implemented for several items (i.e., 2, 4, 7, 9, 10, and 12) in order to standardize the direction of responses.

Data Analysis

Statistical Analysis System 9.43 software was utilized to perform analyses. Descriptive statistics are presented as means and standard deviations for continuous data, and percentages for categorical data. Chi square tests were used to evaluate the associations between religiosity variables and other study variables. Logistic regression was used to test the association between young adult religiosity variables and mental health outcomes (depression, suicide ideation, and suicide attempts), controlling for gender, age, ethnicity, family structure, parent education, and religious fundamentalism. Assets were then added to the model and tested for interactions between the independent variables and control variables.

Results

Frequency distributions for participant characteristics (n=755) are presented in Table 1.1. Overall, the sample was mostly non-Hispanic white (69.8%), and female (70%), almost half lived independently (49.1%), and had parents that held at least a bachelor's degree (58.5%). A higher percentage of females (36.5%) reported depressive symptoms than males (19.5%). Further, those young adults that reported living with a single parent (40%) reported higher depressive symptoms than young

adults living in a 2-parent family (24.8%) or living independently (35.3%). A higher percentage of young adults reported depressive symptoms when parents had less than high school education (47.4%) or a high school degree (37.9%) when compared to those students having parents with at least a Bachelor's degree (28.0%).

More females (18.5%) reported suicide ideation than males (11.1%). African Americans (20.6%) had the highest percentage of individuals reporting suicide ideation compared to other ethnicities. Young adults living independently (18.9%) reported higher suicide ideation than those living in a single parent home (17.1%) or those living in a 2-parent home (13.1%). There was a total of 18 young adults who reported at least one suicide attempt. Because of the small number of individuals (n=18) that reported suicide attempts, no analysis could be performed using this outcome variable.

For the assets, 84.4% of the young adults reported having the mom asset (i.e. positive relationship with mom) and 73.5% of the young adults reported having the dad asset.

INSERT TABLE 1.1 HERE

A total of 30.1% of individuals indicated that they attend church or other religious meetings (ORA) once or more a week and 26.1 % reported participating in non-organizational religious activities (NORA) such as prayer time daily or more often, These responses reflect a high level of religiosity. When reviewing the IR items, the responses "tends to be true" and "definitely is true for me" reflect high levels of religiosity. Interestingly, 55.1% of participants provided these responses to the statement "In my life, I experience the presence of the Divine", 49.2% provided these

responses to “My religious beliefs lie behind my whole life approach”, and 44.5% provided these response to “I try hard to carry my religion over into all other dealings in life.” Clearly, participants in this study expressed higher levels of religiosity in the domain of intrinsic religiosity as compared to participation in either organized or non-organized religious activities. See Table 1.2 for response frequencies for DUREL items.

INSERT TABLE 1.2 HERE

In general, respondents scored low on all items for the religious fundamentalism scale, with the exception of “’Satan’ is just the name people give to their own bad impulses. There is really no such thing as a diabolical “Prince of Darkness” who tempts us.” Of the participants, 29.3% were classified as having low fundamentalism and 44.5% were categorized as having high fundamentalism on this item. A total of 53.3% of the sample was classified as having low fundamentalism for the statement “To lead the best, most meaningful life, one must belong to the one, fundamentally true religion.” See Table 1.3 for classification of religious fundamentalism for each item of the Revised Religious Fundamentalism Scale.

The classification of participants based on total religious fundamentalism scores are shown in Table 1.4. The largest group of participants was categorized as having low religious fundamentalism beliefs (42.9%) and the smallest group was categorized as having high religious fundamentalism beliefs (26.4%).

INSERT TABLE 1.3 HERE

INSERT TABLE 1.4 HERE

Associations between depressive symptom scores and religiosity subscale scores (DUREL) are shown in Table 1.5 and are reported as odds ratios. Odds ratio (OR) values that are less than 1 indicate that listed responses for each item are likely to have a protective effect. For the first variable, organizational religious activities (ORA), odds ratios across all three models remain fairly consistent for young adults. In Model 2 (control variables added) and 3 (assets added), the ORA variable appears to be associated with lower levels of depressive symptoms when participant responses were "a few times a year" (OR=0.556), "once a week" (OR=0.399), and "more than once a week" (OR=0.250). These associations indicate that those participating in ORA have 0.216 - 0.556 times less odds of reporting depressive symptoms than those who reported "never" or "a few times a month". There was very little change in the odds ratios between the adjusted model (Model 2) and adjusted model with assets (Model 3), in which the relationship to mom and relationship to dad assets were added to the analysis, indicating that the risk of depressive symptoms remained fairly constant after addition of these assets.

For the non-organizational religious activities variable (NORA), significant inverse associations were reported in all three models. Once control variables were added in model 2, the responses for "daily" and "more than once a day" remain significant indicating 0.266 and 0.341 (respectively) times less odds of depressive symptoms when participants reported these higher scores of NORA engagement. Once assets were added in model 3, odds ratios are still statistically significant for these two responses indicating that after controlling for demographic variables and assets, risk of

reporting depressive symptoms remains low when participants responded with higher scores of NORA.

For Intrinsic religiosity (IR)-1, there was a significant inverse association with depressive symptoms across all three models for the last response, “definitely true of me”. After controlling for covariates (model 2) and adding assets (model 3), there was a significant inverse association between IR 1 (In my life, I experience the presence of the Divine [i.e. God].) and depressive symptoms when participants responded “definitely true for me”. In model 3, the odds ratio indicated that those who provided that response had 0.489 times less odds of reporting depressive symptoms when participants reported “definitely true of me” for IR 1. For IR-2 (“My religious beliefs are what lie behind my whole approach to life.”), there was a significant inverse association between high religiosity (“definitely true of me”) and depressive symptoms across all three models. The odds ratios for models 2 and 3 (OR=0.325, 0.373) indicate a protective effect with 0.325-0.373 times less odds of reporting depressive symptoms for those who responded “definitely true of me”. For IR-3 (“I try hard to carry my religion over into all other dealings of life”), there was a significant inverse association between higher scores of religiosity (i.e., “tends to be true” and “definitely true of me”) and depressions symptoms in all three models. Once controlling for covariates, odds ratios for these two responses indicate 0.271-0.359 times less odds of reporting depressive symptoms when the religious beliefs are integrated into a person’s whole life approach. Once assets were added in model three, the significant inverse associations remained similar for both responses. The significant associations between depressive symptoms and higher IR responses for all three IR items suggesting that the risk of

depressive symptoms are lower in individuals from this sample who reported higher scores in intrinsic religiosity.

Interactions were tested for Model 3. No significant interactions were found between the control variable and the relationship between religiosity variables (i.e., ORA, NORA, and IR-3-items) and depressive symptom scores. In addition, there were no significant interactions between the parent assets and the relationship between religiosity and depressive symptoms. However, significant inverse associations were found between depressive symptoms and assets ("Relationship with Mom" and "Relationship with Dad"), which indicates that when the asset was present in the young adult, fewer depressive symptoms were reported.

INSERT TABLE 1.5 HERE

Associations between the religiosity variables from the DUREL and suicide ideation over the past 12 months in young adults are presented in Table 1.6. There were significant inverse associations across all three models between suicide ideation in the past 12 months and reported participation in organized religious activities (ORA) (i.e., how frequently a person participates in public religious activities such as church attendance). In model 3, odds ratios were significant for reported participation in ORA "a few times a year" (OR=0.517), "a few times a month" (OR=0.505), "once a week" (OR=0.385), and "more than once a week" (OR=0.208). These odds ratios indicate that individuals that provided these responses had less odds of reporting suicide ideation than participants who did not, with lower odds reporting suicide ideation occurring with higher frequency of participation in ORA.

For non-organizational religious activities (NORA), which indicate how frequently a person participates religious activities in a private setting (e.g., prayer time, watching a religious television show), significant inverse associations were found across all three models when participants responded that they participated in NORA "two or more times per week" (OR=0.399), "daily" (OR=0.282), and "more than once a day" (OR=0.337). The odds ratios were fairly consistent between the three models, with data from Model 3 indicating that, after controlling for covariates and assets, young adults who provided these responses had 0.282 to 0.399 times less odds of reporting suicidal behaviors. This suggests that participating in NORA at least two or more times a week is associated with a protective effect against suicide ideation.

For Intrinsic religiosity (IR) variable 1 ("In my life, I experience the presence of the Divine [i.e., God]"), there was a significant inverse association across all three models when young adults respond "definitely true of me" with depressive symptoms. Odds ratios changed little between model 2 (OR=0.273) and model 3 (OR=0.295). Data from Model 3 indicated that, after controlling for covariates and assets, young adults who provided this response were 0.295 times less likely to report suicide ideation than those participants reporting other responses on IR-1. For the IR-2 item ("My religious beliefs are what lie behind my whole approach to life"), there was a statistically significant inverse association between the last response "definitely true of me" (OR range: 0.207 - 0.221) and suicide ideation in all three models indicating that participants who provided this response were 0.207 - 0.221 times less likely to report suicide ideation with or without controlling for demographic variables or the assets. There was a significant association between the IR-3 item ("I try to carry my religion over into all

dealings in life") and suicide ideation across all three models for responses "tends to be true" and "definitely true of me". Again, this indicates a protective effect against suicide ideation for those young adults reporting these responses on the IR-3 item. The odds ratios remained consistent from the unadjusted model (Model 1), the model adjusted for demographic control variables (Model 2), and the assets adjusted model (Model 3). Data from Model 3 indicated that, after controlling for covariates and assets, young adults who provided this response were 0.322 times less likely to report suicide ideation than those participants reporting other responses on IR-3.

Interactions were examined and one significant interaction was found between the organizational religious activities (ORA) variable and the young adults possessing the dad asset ($p= 0.04$). Stratified analysis (see Table 1.7) was run in order to examine associations among those young adults that had the dad asset versus those that did not. Results show that there is no significant association between organizational religious activity (e.g., church attendance) and suicide ideation among those young adults without the dad asset. However, There was a significant inverse association between those responding that they participated in at least some (i.e., "a few times a year) organized religious activities and suicide ideation for those young adults with the dad asset. Therefore, the young adults that reported some participation of religious activities reported suicide ideation less often when they also had the dad asset. This significant finding indicates that when the young adult possesses the dad asset, there was lowered risk of suicide ideation where the presence of the dad asset strengthened (moderated) the relationship between suicide ideation and religiosity.

INSERT TABLE 1.6 HERE

INSERT TABLE 1.7 HERE

Discussion

Overall, there are significant inverse associations between religiosity variables and both mental health outcomes of depressive symptoms and suicide ideation.

Religiosity & Depression

The Organizational Religious Activities (e.g., church attendance) item was significantly inversely associated to depressive symptoms when the participant answered "A few times a year" or higher, with the exception of "a few times a month" in the fully adjusted model 3. This indicates decreased risk of depressive symptoms when participants had higher scores on this religiosity variable. Interestingly, the answer "never" had no significant associations with depression. It may be that those individuals who are not participating in religious activities are dealing with depressive symptoms such as isolation, withdrawal, or fatigue, which would inhibit them from socializing as often, thereby promoting a more unstable social support network. Perhaps individuals with a strong commitment to organizational religious activity have a stronger social network due to relationships fostered in religious settings within their community. Having a greater sense of belonging to a group may contribute to lower risks of depressive symptoms. Finding strong connections through church activities or even in groups with high moral standards outside of religious organizations can provide positive experiences that increase social support and may shield against depression (Seaward, 2017). One study by Le and Tov (2007) found that religious involvement was related to less depressive symptoms in youth. They determined that internal religiousness (e.g., How important is religion to you?) as well as external religion (e.g.,

Participation in religious activities) were significantly and inversely associated with depression in US youth sample (Tov, 2007).

Non-organizational religious activities produced a significant inverse association with depressive symptoms when young adults reported prayer time as "daily" or "more than once a day" (higher religiosity). This association was consistent across all three models. This association may be an indication of a coping mechanism related to the offset of stressful situations in the young adult life. Possibly, activities such as prayer are used as coping mechanisms because of the security and inner peace brought about by a confidence that there is hope even in the worst circumstances. Although our findings report on young adults, another study on middle-aged women found that prayer used as a coping mechanism was beneficial (Wachholze, 2013). This same study reported improvements in the depressive symptoms of participants when regular prayer was incorporated in their lives (Wachholze, 2013). In another study, caregivers of individuals with Alzheimer's disease used prayer as a coping mechanism during caregiving situations, which proved to be beneficial in managing stress levels in the caregivers (Stolley et al., 1999).

For Intrinsic Religiosity, significant associations were identified for each item and across each model. Once again, higher reported levels of IR in areas of "experiencing the presence of the Divine," "religious beliefs lie behind my whole life approach," and "carry religion in all dealings of life" were associated with lower risks of depressive symptoms in this sample. Lower IR scores may indicate possible inner conflict caused by dissonance between religious teachings taught to them as a child and current views or struggles related to God or a higher power. Such conflict may

contribute to depression. Research suggests that during this period of emerging adulthood young people often experience uncertainty in their belief systems. They may be exploring their self- concept of personal morality and worldviews, which may or may not conflict with their teachings from childhood (Arnett, 2000; Schwartz et al., 2005). Further research would be necessary to determine contributing factors related to why young adults that are uncertain or waver in their religiosity beliefs may be more inclined to have depression than other young adults with a stronger, firm religious belief system.

In the fully adjusted model (model 3), analysis was adjusted to include both assets to determine the effects of the included assets. The "Relationship with Mom" and "Relationship with Dad" assets both produced significant associations when added to the model for religiosity variables and depressive symptoms. Because the significant association remained after the assets were added, there may some importance of the parental roles in avoiding depression during the transitional years of emerging adulthood. This finding is supported in other research that found that when there is a history of poor quality relationships between parents and child, the risk of depression increases (Kane, 2004). This relationship was especially true when mothers are depressed (Kane, 2004). However, the current study did not analyze depression in mothers.

Religiosity & Suicide

Responses to the question "How often do you attend church or other religious meetings?" (ORA item) were significantly and inversely associated with suicide ideation when individuals answered "A few times a year" and greater. The findings suggest that when individuals report more frequent organized religious activity such as

church attendance, the risk for depressive symptoms decreases. Perhaps the participants acquire a more substantial social support system through common beliefs with others (Seaward, 2017). When the assets "Relationship with Mom" and "Relationship with Dad" were added to model 3 for this item, the significant association between higher scores of religiosity and lower reported suicide ideation for all five religiosity items remained significant. It may be important to have strong ties with parents in the lives of young adults in order to decease risks of suicidal thoughts and/or involvement in suicide attempts. There is a great deal of literature to support the influence of quality of parent/child relationship on increased life-success (Armsden, 1986; Cotterell, 1992; Van Wel et al., 2000), as well as other outcomes including greater autonomy (Peterson & Bush, 1999), improved peer relationships (Birkeland et al., 2014), and psychological well-being (Jiang et al., 2013). This idea would support the inclusion of relationship building with parents in suicide prevention programs.

One significant interaction was found between the dad asset ($p=0.04$) and the relationship between the ORA variable and suicide ideation. A stratified analysis was performed in which significant associations were found between ORA and number of depressive symptoms reported by young adults with the dad asset. These associations were not significant for those not possessing the dad asset. Having a strong relationship with the father was shown to moderate or strengthen the relationship between religiosity and organizational religiosity. Father's provide a unique contribution to the development of a child and much research suggests stronger ties with dad can provide greater life satisfaction, better problem solving skills, and abilities to adjust in new situations (Arnato, 1994; & Arnato & Gilbreth, 1999). Future studies should address

how the role of the father may influence the relationship between young adult church attendance and suicide ideation.

Several responses to the NORA item (i.e., "How do you spend time in private religious activities, such as prayer, meditation, or Bible study?") produced significant inverse associations with suicide ideation. The responses producing a significant association across all three models were "Two or more times a week," "daily," and "more than once a day", which indicate high religiosity. The analysis suggests that frequent participation in private religious activities may facilitate a decrease in future suicidal thoughts. This association may indicate that prayer/meditation activities can be used as a coping mechanism because of the reassurance and hope brought about by a confidence that there is hopefulness even in the worst of situations. Perhaps those youth with more firm belief in the value of prayer/mediation time may have more confidence in the validity of their belief system and, therefore, experience more benefit to their mental health outlook. Having this confidence in the validity of their belief system may lead to development of other mechanisms of coping, which would provide protection against suicide behaviors. This finding is also consistent with another study on Positive Youth Development that reported youth with more coherent conceptions of spiritual beliefs were more likely to have higher scores on positive development (James & Fine, 2015). This study also reported that young people who have more solidified spiritual beliefs were more likely to possess positive development skills (James & Fine, 2015), while individuals with more ambiguous belief systems scored much lower (Oman et al., 2010). However, this study is unable to clarify if this relationship holds over time. Future studies using longitudinal analyses would be beneficial in exploring

this relationship. Since the "Relationship with Mom" and "Relationship with Father" assets are significant, this supports the need for relationship building between parents and adolescents who are at risk for suicide behaviors.

Three intrinsic religiosity items showed significant association with suicide ideation: "experiencing the presence of the divine," "religious beliefs lie behind my whole life approach," and "carry religion in all dealings of life." There was a significant inverse association between the response "definitely true of me," and suicide ideation for all three IR items across all three models. The association may indicate some mediating effect on suicide ideation from higher levels of intrinsic religiosity in young adults. Factors such as embracing a strong religious faith, strong personal commitment to deity, and incorporating religious doctrine in all facets of day-to-day life may likely contribute to the mediation of suicidal behavior. Future research could be performed to explain the causal relationships between intrinsic religiosity and suicide ideation. In the fully adjusted model with assets added to the analysis, "Relationship with Mom" and "Relationship with Dad" were both significant in the association. In addition to the significant relationship between religiosity and suicide ideation, results suggest that the presence of the mom and dad asset is also significantly associated suicide ideation.

Based on the findings of this study, future intervention designs may want to focus on the inclusion of religiosity and spiritual practice as a beneficial addition to existing mental health programming in young adults experiencing depressive symptoms and suicide ideation. The researchers of this study are not advocating for mental health interventions to be religious, rather using religiosity as an added resource for interventions for those individuals that use religion in everyday life. The current study

has shown a statistical significance association between high levels of religiosity and decreased risk of developing depressive symptoms and suicide ideation. Working with faith-based organizations and religious leaders in the community to create and evaluate suicide prevention programs that use spiritual and religious components, especially in areas of the three dimensions of religiosity (i.e., ORA, NORA, IR), could be beneficial. Programs promoting mental health for those emerging adults could involve religious coping techniques, religious teachings to assist in handling personal problems, and therapeutic religious activities designed to act as risk reduction strategies in suicide and depression prevention. Further research is needed in order to identify specific religious components to incorporate in programming. However, practitioners should be sensitive to inclusion of practices that may be in conflict with the beliefs of the client.

Limitations

There are limitations to this study that warrant consideration. One limitation is that the cross-sectional study only examines responses at one point in time and no causal inferences should be made. Another limitation of this study was the failure to measure other assets that also may have been useful predictors in this study. Other assets, such as resiliency and ability to interact with other peers are two assets that may have influenced the association between religiosity and mental health outcomes. Future studies should address the role that other assets may have in these associations. In addition, the ORA and NORA dimensions of religiosity measured different levels of participation in organized or non-organized religious activity. One may expect lower levels of social activity related to the social isolation process experienced by individuals who are depressed and/or people having suicide ideation. Because depression could

have influenced the likelihood of participating in religious and other types of social activity in some participants, there may be a possible confounder concerning this issue. The sample was recruited from one geographical location; therefore, we are unable to generalize to other populations. Finally, the number of young adults reporting that they did not have the mom and dad asset was small. Having less variability in the involved variables may influence the power and consequently the results of this study.

Conclusion:

Understanding possible associations to mental health outcomes can improve future efforts to develop effective strategies/programs to promote mental and overall health in young adults. Based on a better understanding of the associations between religiosity and mental health variables, it may be important to incorporate religious or spiritual dimensions within counseling and/or health promotion programs for those clientele that have a higher affinity for religion and spirituality. This study provides a foundational assessment that identifies possible associations between religiosity and young adult health outcomes and potential mechanisms that contribute to these associations that can be targeted in future research related to the efficacy of risk prevention programs targeting emerging adult populations.

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Chapter 4: Manuscript 1 - Appendix

Table 1.1 Characteristics of Depression Symptoms and Suicide Behaviors

Characteristics	All (n=755)	By depression, suicide ideation scores					
	Frequency (%)	Depression symptoms		Suicidal thoughts		Suicide attempts	
		Yes (%)	No	Yes (%)	No	Yes (%)	No
Gender							
Male	226 (29.9)	44(19.5)	182	25(11.1)	201	4(1.8)	222
Female	529 (70.1)	193(36.5)	336	98(18.5)	431	14(2.6)	515
Age							
18-19	240 (31.8)	72(30.0)	168	43(17.9)	197	10(4.2)	230
20-21	316 (41.9)	96(30.4)	220	50(15.8)	266	5(1.6)	311
22-24	197 (26.1)	68(34.5)	129	29(14.7)	168	3(1.5)	196
Ethnicity							
American Indian	63 (8.34)	28(44.4)	35	12(19.0)	51	1(1.6)	62
NH white	527 (69.8)	160(30.4)	367	82(15.6)	445	13(2.5)	514
NH African American	34 (4.5)	10(29.4)	24	7(20.6)	27	2(5.9)	32
Hispanic	59 (7.8)	18(30.5)	41	9(15.3)	50	1(1.7)	58
Asian	45 (6.0)	12(26.7)	33	8(17.8)	37	0	45
Other	32 (4.2)	10(31.3)	22	5(15.6)	27	1(3.1)	31
Young Adult Education							
12th grade or below	14 (1.9)	4(28.6)	10	2(14.3)	12	1(7.1)	13
Freshman	170 (22.5)	54(31.8)	116	32(18.8)	138	8(4.7)	162
Sophomore	177 (23.4)	51(28.8)	126	25(14.1)	152	3(1.7)	173
Junior	187 (21.7)	58(31.0)	129	28(15.0)	159	3(1.6)	185
Senior	196 (26)	66(33.7)	130	35(17.9)	161	3(1.5)	193
Graduate student	10 (1.3)	4(40.0)	6	1(10.0)	9	0	10
Family Structure							
2-parent family	314 (41.6)	78(24.8)	236	41(13.1)	273	6(1.9)	308
1-parent family	70 (9.3)	28(40.0)	42	12(17.1)	58	1(1.4)	69
Independent	371 (49.1)	131(35.3)	240	70(18.9)	301	11(3.0)	360
Parent Education							
Less than HS	19 (2.5)	9(47.4)	10	3(15.8)	16	0	19
HS degree, GED, or some college	219 (29.1)	83(37.9)	136	33(15.1)	186	9(4.1)	210
Bachelor degree or higher	517 (58.5)	145(28.0)	372	87(16.8)	430	9(1.7)	508

Table 1.2: Young Adult Religiosity (DUREL) Responses

Variable	Responses	Frequency (%)
1. ORA: How often do you attend church or other religious meetings?	Never	205 (27.2)
	Once a year or less	82 (10.9)
	A few times a year	139 (18.4)
	A few times a month	102 (13.5)
	Once a week	127 (16.8)
	More than once a week	100 (13.3)
2. NORA: How often do you spend time in private religious activities, such as prayer, meditation or Bible study?	Rarely or never	348 (46.2)
	A few times a month	72 (9.6)
	Once a week	47 (6.2)
	Two or more times a week	90 (11.9)
	Daily	132 (17.5)
	More than once a day	65 (8.6)
3. IR: In my life, I experience the presence of the Divine (i.e., God).	Definitely not true	189 (25.1)
	Tends not to be true	57 (7.6)
	Unsure	92 (12.2)
	Tends to be true	127 (16.8)
	Definitely true of me	289 (38.3)
4. IR: My religious beliefs are what really lie behind my whole approach to life.	Definitely not true	232 (30.7)
	Tends not to be true	71 (9.4)
	Unsure	80 (10.6)
	Tends to be true	158 (20.9)
	Definitely true of me	214 (28.3)
5. IR: I try hard to carry my religion over into all other dealings in life.	Definitely not true	257 (34.0)
	Tends not to be true	86 (11.4)
	Unsure	76 (10.1)
	Tends to be true	148 (19.6)
	Definitely true of me	188 (24.9)

Table 1.3: Responses of Religious Fundamentalism in Young Adults

Variables	Responses	Frequency (%)
1. God has given humanity, a complete unfailing guide to happiness and salvation, which must be totally followed.	Low (score range 1-3)	285 (37.7)
	Medium (score range 4-6)	154 (20.4)
	High (score range 7-9)	316 (41.9)
2. No single book of religious teachings contains all the intrinsic, fundamental truths about life	Low (score range 1-3)	368 (48.7)
	Medium (score range 4-6)	144 (19.1)
	High (score range 7-9)	243 (32.2)
3. The basic cause of evil in this world is Satan, who is still constantly and ferociously fighting against God.	Low (score range 1-3)	327 (43.3)
	Medium (score range 4-6)	143 (18.9)
	High (score range 7-9)	285 (37.8)
4. It is more important to be a good person than to believe in God and the right religion.	Low (score range 1-3)	375 (49.7)
	Medium (score range 4-6)	158 (20.9)
	High (score range 7-9)	222 (29.4)
5. There is a particular set of religious teachings in this world that are so true, you can't go any "deeper" because they are the basic, bedrock message God has given humanity.	Low (score range 1-3)	340 (45.0)
	Medium (score range 4-6)	253 (33.5)
	High (score range 7-9)	162 (21.5)
6. When you get right down to it, there are basically two kinds of people in the world: the righteous who will be rewarded by God; and the rest who will not.	Low (score range 1-3)	422 (55.9)
	Medium (score range 4-6)	163 (21.6)
	High (score range 7-9)	170 (22.5)
7. Scriptures may contain general truths, but they should NOT be considered completely, literally true from beginning to end.	Low (score range 1-3)	373 (49.4)
	Medium (score range 4-6)	197 (26.1)
	High (score range 7-9)	185 (24.5)
8. To lead the best, most meaningful life, one must belong to the one, fundamentally true religion.	Low (score range 1-3)	402 (53.3)
	Medium (score range 4-6)	168 (22.2)
	High (score range 7-9)	185 (24.5)
9. "Satan" is just the name people give to their own bad impulses. There is really no such thing as a diabolical "Prince of Darkness" who tempts us.	Low (score range 1-3)	221 (29.3)
	Medium (score range 4-6)	198 (26.2)
	High (score range 7-9)	336 (44.5)
10. Whenever science and sacred scripture conflict, science is probably right.	Low (score range 1-3)	305 (40.4)
	Medium (score range 4-6)	218 (28.9)
	High (score range 7-9)	232 (30.7)
11. The fundamentals of God's religion should never be tampered with, or compromised with others' beliefs.	Low (score range 1-3)	274 (39.3)
	Medium (score range 4-6)	242 (32.0)
	High (score range 7-9)	239 (31.7)
12. All of the religions in the world have flaws and wrong teachings. There is no perfectly true and right religion.	Low (score range 1-3)	386 (51.1)
	Medium (score range 4-6)	169 (22.4)
	High (score range 7-9)	200 (26.5)

Responses:
Very strongly disagree = 1
Strongly disagree = 2
Moderately disagree = 3
Slightly disagree = 4
Slightly agree = 6
Moderately agree = 7
Strongly agree = 8
Very strongly agree =

Table 1.4: Frequency of Religious Fundamentalism Classification in Young Adult Sample (n=755)

Variable	Frequency (%)
Low Fundamentalism (score range: 1-3)	324 (42.9)
Medium Fundamentalism (score range: 4-6)	232 (30.7)
High Fundamentalism (score range: 7-9)	199 (26.4)

Table 1.5: Associations between Religion Variables and Depressive Symptoms (Yes or No) in the Past Week

Questions	Model 1 Odds Ratio (95% CI) †	Model 2 Odds Ratio (95% CI)	Model 3 Odds Ratio (95% CI)
Organizational Religious Activities (e.g. church attendance)			
Never	1(reference)	1(reference)	1(reference)
Once a year or less	1.025 (0.611, 1.721)	1.019 (0.588, 1.766)	1.117 (0.633, 1.969)
A few times a year	**0.548 (0.346, 0.868)***	**0.546 (0.337, 0.885)**	**0.556 (0.339, 0.912)**
A few times a month	**0.599 (0.362, 0.990)**	**0.600 (0.355, 1.013)**	0.721 (0.420, 1.239)
Once a week	**0.324 (0.193, 0.545)**	**0.343 (0.199, 0.589)**	**0.399 (0.228, 0.697)**
More than once a week	**0.216 (0.115, 0.405)**	**0.229 (0.120, 0.436)**	**0.250 (0.129, 0.483)**
Non-Organizational Religious Activities (e.g. prayer time)			
Rarely or never	1(reference)	1(reference)	1(reference)
A few times a month	0.978 (0.581, 1.646)	1.052 (0.610 1.816)	1.213 (0.694, 2.119)
Once a week	0.720 (0.376, 1.380)	0.651 (0.334 1.271)	0.592 (0.296, 1.181)
Two or more times a week	**0.591 (0.355, 0.984)**	0.602 (0.354 1.022)	0.647 (0.376, 1.114)
Daily	**0.279 (0.166, 0.471)**	**0.266 (0.154 0.458)**	**0.295 (0.169, 0.515)**
More than once a day	**0.285 (0.140, 0.578)**	**0.341 (0.164 0.706)**	**0.395 (0.188, 0.829)**
Intrinsic Religiosity 1 (I experience the presence of the divine)			
Definitely not true	1(reference)	1(reference)	1(reference)
Tends not to be true	1.539 (0.841, 2.817)	1.407 (0.745, 2.656)	1.543 (0.802, 2.970)
Unsure	1.307 (0.784, 2.178)	1.185 (0.690, 2.035)	1.193 (0.684, 2.082)
Tends to be true	0.987 (0.616, 1.581)	0.912 (0.551, 1.507)	1.063 (0.633, 1.784)
Definitely true of me	**0.438 (0.289, 0.665)**	**0.415 (0.268, 0.644)**	**0.489 (0.312, 0.769)**
Intrinsic Religiosity 2 (Religious beliefs lie behind my whole life approach)			
Definitely not true	1(reference)	1(reference)	1(reference)
Tends not to be true	**1.698 (0.993, 2.905)**	1.627 (0.926, 2.858)	1.608 (0.900, 2.873)
Unsure	1.248 (0.742, 2.098)	1.266 (0.729, 2.199)	1.322 (0.752, 2.326)
Tends to be true	**0.617 (0.397, 0.960)**	**0.562 (0.353, 0.896)**	0.652 (0.405, 1.052)
Definitely true of me	**0.336 (0.215, 0.525)**	**0.325 (0.204, 0.517)**	**0.373 (0.232, 0.600)**
Intrinsic Religiosity 3 (Carry religion in all dealings of life)			
Definitely not true	1(reference)	1(reference)	1(reference)
Tends not to be true	1.246 (0.762, 2.038)	1.301 (0.773, 2.189)	1.291 (0.757, 2.201)
Unsure	0.884 (0.522, 1.496)	0.795 (0.454, 1.394)	0.903 (0.510, 1.599)
Tends to be true	**0.380 (0.238, 0.606)**	**0.359 (0.219, 0.588)**	**0.414 (0.249, 0.686)**
Definitely true of me	**0.287 (0.181, 0.454)**	**0.271 (0.168, 0.437)**	**0.314 (0.192, 0.513)**

*Bolded number indicates statistical significance as compared to the reference group.

Model 1: Univariate model

Model 2: adjusted for age, gender, ethnicity, family structure, parent education, and religious fundamentalism

Model 3: adjusted for covariates in model 2 + mom and dad asset

† CI indicates confidence interval

Table 1.6: Associations between Religion Variables and Suicide Ideation in the Past 12 months

Questions	Model 1	Model 2	Model 3
	Odds Ratio (95% CI)	Odds Ratio (95% CI)	Odds Ratio (95% CI)
Organizational Religious Activities (e.g. church attendance)			
Never	1(reference)	1(reference)	1(reference)
Once a year or less	0.872 (0.472, 1.612)	0.913 (0.482, 1.727)	1.000 (0.525, 1.906)
A few times a year	**0.552 (0.314, 0.971)***	**0.513 (0.285, 0.921)**	**0.517 (0.286, 0.935)**
A few times a month	0.494 (0.258, 0.945)	**0.463 (0.237, 0.902)**	**0.505 (0.257, 0.993)**
Once a week	**0.357 (0.185, 0.689)**	**0.348 (0.177, 0.686)**	**0.385 (0.194, 0.765)**
More than once a week	**0.200 (0.083, 0.485)**	**0.197 (0.080, 0.484)**	**0.208 (0.084, 0.513)**
Non-Organizational Religious Activities (e.g. prayer time)			
Rarely or never	1(reference)	1(reference)	1(reference)
A few times a month	0.931 (0.499, 1.737)	0.895 (0.473, 1.695)	0.937 (0.490, 1.790)
Once a week	0.619 (0.267, 1.438)	0.563 (0.239, 1.323)	0.561 (0.237, 1.329)
Two or more times a week	**0.393 (0.189, 0.820)**	**0.385 (0.183, 0.811)**	**0.399 (0.188, 0.844)**
Daily	**0.263 (0.128, 0.543)**	**0.268 (0.128, 0.559)**	**0.282 (0.135, 0.592)**
More than once a day	**0.300 (0.116, 0.774)**	**0.320 (0.122, 0.836)**	**0.337 (0.128, 0.888)**
Intrinsic Religiosity Item 1 (I experience the presence of the divine)			
Definitely not true	1(reference)	1(reference)	1(reference)
Tends not to be true	1.103 (0.541, 2.249)	1.048 (0.504, 2.179)	1.073 (0.512, 2.249)
Unsure	1.014 (0.553, 1.859)	0.981 (0.521, 1.847)	0.995 (0.526, 1.884)
Tends to be true	0.995 (0.574, 1.727)	1.001 (0.562, 1.783)	1.102 (0.613, 1.980)
Definitely true of me	**0.287 (0.163, 0.505)**	**0.273 (0.152, 0.487)**	**0.295 (0.164, 0.531)**
Intrinsic Religiosity Item 2 (Religious beliefs lie behind my whole life approach)			
Definitely not true	1(reference)	1(reference)	1(reference)
Tends not to be true	1.708 (0.933, 3.128)	1.632 (0.874, 3.047)	1.539 (0.816, 2.902)
Unsure	1.379 (0.754, 2.519)	1.398 (0.747, 2.616)	1.464 (0.779, 2.752)
Tends to be true	0.728 (0.423, 1.254)	0.718 (0.411, 1.256)	0.784 (0.444, 1.382)
Definitely true of me	**0.221 (0.111, 0.441)**	**0.207 (0.103, 0.418)**	**0.216 (0.107, 0.439)**
Intrinsic Religiosity Item 3 (Carry religion in all dealings of life)			
Definitely not true	1(reference)	1(reference)	1(reference)
Tends not to be true	1.191 (0.669, 2.119)	1.226 (0.675, 2.228)	1.278 (0.706, 2.313)
Unsure	0.906 (0.478, 1.718)	0.872 (0.449, 1.696)	0.979 (0.505, 1.896)
Tends to be true	**0.510 (0.286, 0.909)**	**0.514 (0.284, 0.933)**	0.601 (0.332, 1.088)
Definitely true of me	**0.277 (0.146, 0.525)**	**0.496 (0.137, 0.505)**	**0.322 (0.172, 0.602)**

*Bolded number indicates statistical significance as compared to the reference group.
Model 1: Univariate model
Model 2: adjusted for age, gender, ethnicity, family structure, parent education, and religious fundamentalism
Model 3: adjusted for covariates in model 2 + mom and dad asset

Table 1.7: Interactions between Religiosity and Suicide Ideation by Dad Assets (Yes or No)

Questions	By Dad Asset = No	By Dad Asset = Yes*
	Odds Ratio (95% CI) †	Odds Ratio (95% CI)
Organizational Religious Activities (e.g. church attendance)	1(reference)	1(reference)
Never	0.421 (0.106, 1.676)	1.544 (0.714, 3.341)
Once a year or less	1.017 (0.390, 2.653)	**0.347 (0.158, 0.761)****
A few times a year	0.778 (0.215, 2.815)	**0.407 (0.178, 0.932)**
A few times a month	0.716 (0.211, 2.432)	**0.284 (0.120, 0.674)**
Once a week	0.216 (0.026, 1.812)	**0.218 (0.079, 0.600)**
More than once a week		

*Dad Asset (Yes) p-value= 0.04

**Bolded number indicates statistical significance as compared to the reference group.

†CI indicates confidence interval

Manuscript 2

Relationships between Depression in Young Adults and Religious Discord with Their Parents

Abstract:

The relationship that emerging adults have with their parents is a factor of interest in recent studies regarding mental health and young adult development. This cross-sectional study analyzed the relationships between depressive symptoms in emerging adults (ages 18-24) and religious concordance or discordance with their parents (n=161 matched pairs). This studied utilized an instrument that was composed of previously validated tools to survey young adults from colleges and universities and their parent counterparts in a southwestern state. An online software tool (Qualtrics) was used to distribute surveys to young adults who also were asked to email one parent the parent survey to complete. The surveys assessed religiosity, religious fundamentalism, depressive symptoms (only on the young adult survey), and demographics. Concordance/discordance of religiosity was computed by taking the difference between parent and young adult religiosity scores. Concordance/discordance for non-organizational religiosity (e.g. private prayer time, Bible study, or meditation) was significantly inversely associated ($p=0.0083$) with reported depressive symptoms in young adults. Females ($p=0.0034$) were more likely to report depressive symptoms than males. Young adults that reported having parental relationship with one and both parents ($p=0.0005$ and $p < 0.0001$ respectively) reported significantly lower scores of depressive symptoms. Recommendations are discussed.

Keywords: Young adults, emerging adults, depression, mental health, religiosity, concordance, discordance, assets, parental relationship

Introduction/Background

Depression in Young Adults

A serious and often overlooked public health problem in the United States is mental health disorders in young adults. Depression is an increasingly common mental health disorder among young adults, and can often go untreated during childhood and adolescence, which can lead to complications in early adulthood (Ward et al., 2016; WHO, 2016). Depression is characterized by major depressive episodes (MDE) that interfere with an individual's normal life. A major depressive episode is often defined as an event lasting 2 or more weeks, during which the individual experiences a depressed mood, loses interest in his/her normally enjoyable activities, and displays at least four symptoms that indicate a change in the person's normal function (e.g. changes in self-image, diet, energy levels, or sleep patterns) (APA, 2013). The National Survey on Drug Use and Health indicated that from 2008 - 2010, 8% of emerging adults aged 18 - 24 reported at least one MDE per year (NSDUH, 2013). Approximately 8.7% of young adults aged 18 – 25 are affected by depression and 5.4% reported experiencing at least one MDE that resulted in severe impairment (Mojtabai, 2016).

Young adults who reported symptoms of depression are also more likely to report thoughts of committing suicide, which is referred to in this study as suicide ideation (Pullen, Modrcin-McCarthy, & Graf, 2000). Through psychiatric evaluation, depression can be diagnosed, after which a treatment plan can be implemented. Recent research has focused on identifying factors/assets that may act as protectors/buffers against depressive disorders. Once identified, strategies that are designed to enhance these assets can be incorporated into programs and treatment plans designed to reduce

the risk of depression in young adults. This study utilized one asset called *parental relationship asset* in which the relationships between the young adult and their mom and dad were assessed. This asset was operationally defined as the young adult feeling close to either one or both parents, how satisfied they are with their relationships with either one or both parents, and how well they feel they communicate with either one or both parent.

Religiosity and Spirituality

A factor that has been studied and identified as affecting young adult mental health outcomes is religiosity. Recent studies and polls show that most Americans (77%) believe in God, and a significant majority consider religion to be important in their lives (79%) (Newport, 2011). In the adolescent years, young people tend to adopt the religious beliefs and practices of their parents, but as they mature into adulthood and become more independent, their beliefs may diverge from those of their parents (Gallup, 2002). The tendency is for individuals to rely more on religious beliefs and values as they mature and take on new roles in life (e.g. marriage, parenthood, etc.) and this continues into their later years of life (Gallup, 2002).

In order to the study relationship between mental health disorders and religiosity and spirituality, the terms must be defined in a measurable way. There is no consensus on definitions for spirituality and religiosity, and many definitions are offered in recent literature. Though the terms are conceptually separate, measurement of these factors has been addressed through validated tools exploring both concepts (Hill et al., 2000). Religiosity can be broadly defined as an "organized system of beliefs, practices, rituals, and symbols designed to: (a) facilitate closeness to the sacred or transcendent (God,

higher power, or ultimate truth/reality); and (b) foster an understanding of one's relationship and responsibility to others living together in a community" (Koenig, 2008). Spirituality can be defined as "the personal quest for understanding answers to ultimate questions about life, about meaning, and about relationship to the sacred or transcendent which may or may not lead to or arise from the development of religious rituals and the formation of community" (Koenig, 2008). In this study, both religiosity and spirituality are referred to with the single term, "religiosity".

Religiosity/Spirituality and Mental Health

The relationships between religiosity and health have been studied extensively over recent years (Koenig, 2001; Miller, 2003; Chida et al., 2009; Mueller, 2010). Much of the research has focused on the relationship between individual psychological well-being and religiosity (Hall et al., 2004; Koenig, 2001; McWhirter, 2002; Miller, 2003). Many studies have demonstrated direct relationships between mental health and religiosity. However, there is a small subset of research that found an inverse relationship or no link between religiosity and mental health. A potential explanation for an inverse relationship between religiosity and mental health is that conflict may be induced when an individual believes in, or is taught, strict religious doctrines or practices that are contrary to societal norms or beliefs (i.e. snake handling) (Koenig, 2011; Ellison et al., 2001; Schnittker, 2001). Even with some studies showing inverse or no correlations, most studies found direct associations between mental health and religion, where religion is believed to provide social and psychological resources that appear to improve mental health outcomes (Koenig, 2011; Miller, 2003; Hackney, 2003; Ellison, 1998). Lower rates of depression have been identified as one of many

potential mental health outcomes among individuals with higher levels of religiosity (Dew et al., 2010).

Relationship between Emerging Adults and Parents

Emerging adulthood is considered to be the age range of 18 – 25 years, a period characterized by completion of adolescence and maturation into full adulthood. People in this transitional age group are typically developing a deeper sense of self-identity as they explore new life experiences such as careers, college, families, and exploration of personal morality and worldview (Arnett, 2000). The relationship between young adults and their parents tend to go through changes as young adults experience more autonomy and independence. Parent-young adult relationships have been shown to be important factors in the development of young adults (Bartle-Haring, 2002). Some studies suggest that parent-youth religious agreement (i.e. religious concordance) is important in maintaining productive relationships between young adults and their parents, and developing strong relationships (Hirschberger et al., 2009; Wilcox, 1998; Wilcox, 2004). No known research has studied whether concordance in religious beliefs and practices between young adults and their parent is related to depression during emerging adulthood. This study explored the relationship between concordance/discordance or similarities/differences in religiosity between young adult and parent pairs and depressive symptoms in young adults.

Young Adult Protective Assets

Young adult assets are protective factors that may be associated with a decrease in the adoption of certain health risk behaviors such as early sexual initiation and alcohol and drug use. Young adult assets also involve enhancing personal skill sets and

behaviors that can lead to positive health outcomes in young people (Oman et al., 2013; Haegerich et al., 2014; Aspy et al., 2014; Cheney et al., 2015). Because of this, health practitioners may utilize an assets-based approach to develop protective factors in young people and their social environments as a means to reduce risky behaviors. In addition to investigating associations between religious concordance/discordance (C/D) with young adult depression, this study also examined potential interactions between depression and the young adult's relationship with his/her mom and dad. In this study, the relationship with parents is being tested as a protective asset for emerging adults. High quality relationships with mom and dad have been suggested to provide protective benefits for young people in preventing initiation of health risk behaviors (Oman, 2013).

Methods

A cross-sectional design was used to analyze the associations between parent and young adult religious concordance with depressive symptoms in young adults. During Spring 2017, survey data was collected from young adult college students aged 18 – 24 years and one parent counterpart. Recruiting was accomplished through mass emails, flyers, newsletters, word-of-mouth marketing, web listings (i.e., Facebook, organizational web pages), and in-class recruitment. With appropriate permissions from professors and institutions, prospective participants were given the link to the on-line survey via email, text, phone calls, or face-to-face in the classroom. Once students accessed the on-line survey, she/he was directed to forward the link to the parent survey to one parent via text, email, phone call or face-to-face. Due to the sensitive nature of

items related to metal health, an algorithm was developed to match parent/young adult dyad's data. Students under the age of 18 years and over 24 years were excluded, and the primary language for the family was restricted to English due to questionnaire limitations.

Instrumentation

The young adult survey included 40-items organized in four sections that measured mental health, religiosity, parental relationship asset, and demographics. The parent survey included 21-items organized into 2 sections that measured religiosity and demographics. The survey included previously validated tools addressing the mental health, parental relationship asset, and religiosity variables.

Kutcher's Adolescent Depression Scale – 6 (KAD-6). Depressive symptoms were measured using the Kutcher's Adolescent Depression Scale - 6 items (KADS-6). The purpose of the KADS – 6 is to assist in identifying depression and depressive symptoms in youth/young adults ages 12 – 22. The KADS – 6 is short, convenient, written at a 6th grade reading level, has been validated in many countries, and has been recommended over many other depression scales by experts (Kutcher & Chehil, 2007). KADS-6 has good internal consistency reliability (i.e., Cronbach's α 0.80), thereby demonstrating appropriate psychometric properties of the KADS-6 for diagnosis and treatment efficacy outcomes in clinical settings (Kutcher & Chehil, 2007). KADS – 6 uses a four point Likert scale ranging from 1 – 4 to score each item. Total scale scores can range from 6 – 24. Scores between 6 – 11 are interpreted as "probably not depressed" and scores ≥12 are interpreted as "possible depression, more thorough

assessment needed." In this study, KADS-6 continuous scores were used to indicate level of depressive symptoms for each young adult participant and this continuous score was utilized as a dependent variable in the analysis.

Duke University Religion Index (DUREL). Five items from the Duke University Religion Index (DUREL) were used to measure religiosity in both the parent and young adult surveys. The 5-item DUREL is a short scale intended for epidemiological studies designed to investigate relationships between religion and health outcomes in a variety of populations. The DUREL incorporates 3 dimensions of religiosity including participation in organizational religious activities (ORA) such as church attendance, participation in non-organizational religious activities (NORA) such as prayer time, and intrinsic religiosity (IR), which assesses personal beliefs or feelings about the importance/commitment to religion in an individual's life. Intrinsic religiosity was initially scored as the sum of the three-items in the subscale. Each item also was treated as an independent variable in some analyses individually. The ORA item was a Likert-scale with response options ranging from 1 (never) – 6 (more than once a week). The NORA item was a Likert-scale with response options ranging from 1 (never) – 6 (more than once a day). The IR items also were Likert-scales with response options ranging from 1 (definitely not true) – 5 (definitely true for me). Items for this scale are found in Table 2.3.

For the young adult survey, two items from the Youth Assets Survey (YAS) (Aspy et al., 2014; Kegler et al., 2005; Oman et al., 2004) were used to measure parental relationships with young adults. Youth Assets Survey (YAS) was a 5-wave, 4-year longitudinal study that collected data from adolescents and parent counterparts

(n=1,117). The purpose of YAS was to examine adolescent health risk behaviors and other factors, (e.g., family, community, and individual) that tend to protect youth from the adoption of health risk behaviors. The construct measurements of the youth assets including all subscales were shown to be reliable and valid having Cronbach alphas of at least .60 and factor loadings scores for all subscales over .40. The study results reported 17-assets with acceptable Spearman (.60-.82) and interclass correlations (.58-.87) (Oman et al., 2004). This study combined 2 assets from the YAS study into a single parental relationship asset, which included relationship with mom and relationship with dad (See Table 2.5). Each item included a 4-point Likert scale and answers were recoded into one parental relationship asset. The parental relationship asset score ranged from 0 – 2. Those young adults that had a 0 did not have a close relationship with either parent. Those young adults that scored a 1 had a close relationship with one parent. Those young adults that scored a 2 had a close relationship with both mom and dad. The parental relationship asset was included in analysis to determine if potential influencing factors exist or if the assets impact the relationship between the C/D variable and depressive symptoms.

Control Variables

The analysis includes five demographic variables that were used as control variables: young adults' gender, age, race/ethnicity, family structure, and parental education level. The family structure of the young adult was assessed with the question, "How many parents do you live with?" Parental education level was reported by participating parents who were asked to report his/her highest education level. Religious fundamentalism was initially intended to be used as a control variable in

order to identify any effects that may be attributed to the level of fundamentalism. However, a Pearson's correlation was performed to analyze possible correlations between the religiosity variables from the DUREL and those from the Revised Religious Fundamentalism Scale (Rev-RFS), which was used in this study. Significant correlations ($p<0.0001$) were determined between the religiosity domains of the DUREL scale and Rev-RFS. Because of these significant, the Rev-RFS was not used as a control variable, in order to prevent introduction of multicolinearity to the analysis.

Concordance/Discordance Score

The religiosity (DUREL – 5 items) items were included for both the young adult participants and their parent/guardians to determine similarities (concordance) and differences (discordance) in religiosity between parent and young adult pairs. A religiosity concordance/ discordance (C/D) score was established as a continuous variable by subtracting the young adult score from the parent score (P_i-Y_i) for each pair. For example, for organizational religiosity activities (Item 1), participants can report a score between 1 – 6. If a parent scored a 6 (Response option: "definitely true of me") and her/his young adult child reported a 1 (Response option: "definitely not true of me"), the C/D score would be 5 (6 -1). This positive value would indicate that the parent reported higher values of religiosity than the young adult and conversely negative values would indicate that the young adult reported higher values of religiosity than the parent. Concordance/discordance score ranges for both ORA and NORA item are -5 to 5. The concordance/discordance score range for the IR subscale (combined 3 items) is -12 to 12.

Study Design and Analysis

The analyses were performed using SAS 9.4 software. Alpha was set at 0.05 for all analyses. Descriptive statistics are presented as frequencies for categorical data and mean, median, and standard deviation for continuous variables. C/D scores were calculated for each parent/young adult pair. Linear regression analysis was used to identify variables that were significantly associated with depressive symptoms in young adults. Chi-squares analysis was used to evaluate the relationships between the religiosity variables and other study variables. Linear regression was performed using the C/D variables as predictors of depressive symptom scores, controlling for age, gender, family structure, race/ethnicity, and parent education in order to identify associations between religiosity C/D values and young adult depressive symptom scores. The analysis also included evaluation of Spearman correlations between religiosity C/D and demographics. The parental relationship asset was tested for associations by adding the asset to the fully-adjusted model (Model 3).

Results

The sample included n=161 parent/young adult pairs. Young adults (74.5%) and parents (75.8%) were mostly female. A large portion of respondents were non-Hispanic white (75.8% of young adults and 87.0% of parents). Ages for young adults ranged fairly evenly over the range from 18 to 24 years, while the majority of parents reported their age to be between 40 - 49 years (45%) or 50 - 59 (46.9%). Most young adults (93.8%) were undergraduate college students in their Freshman through Senior years, and most parents (65.2%) reported their own educational level at a bachelor's

degree or higher. Most young adults reported that they live independently (47.2%), as opposed to living with one parent (43.5%), or two parents (9.3%) (see Table 2.1).

INSERT TABLE 2.1 HERE

Table 2.2 reports the frequencies for depressive symptoms by demographic category. Fifty-one young adults (31.7%) reported depressive symptoms over the past week. Of the 120 young adult female participants, 41 (37.5%) reported depressive symptoms, while only 6 of the 41 male subjects (14.6%) reported depressive symptoms. The largest group of participants reporting depressive symptoms were in the age range of 20-21 years old (35.8%). The participants with depressive symptoms were fairly evenly distributed between Freshmen (26.2%), Sophomores (35.3%), Juniors (38.2%), and Seniors (36.6%). With regards to family structure, more participants in 1-parent households (40%) and living independently (39.5%) reported depressive symptoms than did those living in 2-parent households (21.4%). A higher percentage of participants reported depressive symptoms when parents had less than a high school education (50%) or less than a college degree (38.9%) as compared to those with a college degree or higher (27.6%).

INSERT TABLE 2.2 HERE

Responses to the five religiosity questions (see Table 2.3) show mean and median scores consistently higher among parents than among these emerging adults. Young adult mean scores ranged from 2.74 – 3.40 and median scores ranged from 2 – 4, whereas parental mean scores ranged from 3.67 – 4.19 and median scores ranged from 4 – 5. Standard deviations for all items show higher variability among young adult

responses than among parents for this sample. Independent t-tests were used to identify significant between group differences for young adult and parent religiosity responses. All comparisons with significant (all p-values < .001) indicating that this sample of parents was somewhat more religious than our young adult participants.

With regard to the concordance/discordance between parent and young adult (see Table 2.4), the parent/young adult pairs generally appear to report similar values since the median C/D values are zero for ORA and NORA, and zero for IR items 1 and 2, and 1 for IR item 3. Although the IR subscale has the highest mean C/D score (2.38), this subscale includes 3 items while the other subscales only include 1 item. The means for each IR item in this subscale are 0.80, 0.73, and 0.84 for IR items 1, 2, and 3 respectively. The average score for IR items is 0.79, which is comparable to the ORA and NORA religiosity subscales. Thus, even though higher subscale mean scores are reported for IR, values still fall in line with the degree of religiosity concordance found for ORA and NORA.

For responses regarding the parental relationship asset of the young adult's relationship with mom and dad (see Table 2.5), the lowest mean response was for the item "You are satisfied with the way your father and you communicate with each other" with a mean of 2.89 on a scale from 1= "strongly disagree" and 4= "strongly agree". The highest mean response was for "How close do you feel to your mother?" with a mean of 3.63 on the same 1-4 scale. On average, young adults appeared to report that they had positive relationships with their mothers and fathers, thus having the parent relationship asset.

INSERT TABLES 2.3 THRU 2.5 HERE

In the regression analysis for variables related to depressive symptoms in emerging adults (see Table 2.6), significant inverse associations were found with the following variables: Concordance/Discordance (C/D) of Non-Organizational Religiosity ($p=0.0083$), the presence of the parental relationship asset of one parent ($p=0.0005$), and parental relationship asset with both parents ($p<0.0001$). Gender ($p=0.0034$) also was significantly associated with depressive symptoms in that female were more likely to report depressive symptoms when compared to males. The adjusted R^2 value of 0.38 indicates that 38% of variance in depressive symptoms in this sample of emerging adults is explained by the NORA C/D scores of the religiosity variables (DUREL), gender, and possessing the parental relationship asset in the model. Spearman correlations were run on the independent variables and assets (see Table 2.7). The C/D scores for the three religiosity dimensions (DUREL) are, understandably, significantly related to each other. The parental relationship asset was significantly inversely related to the Intrinsic Religiosity dimension ($p=0.004$).

INSERT TABLES 2.6 & 2.7 HERE

Discussion

The current study was designed to evaluate potential associations between parent and young adult religious concordance with depressive symptoms in young adults. Independent sample t-test showed significant differences in religiosity responses between the young adult and parent groups indicating that parents were somewhat more religious that the young adults in this sample. This finding is consistent with other research on parent and young adult religiosity. We typically see a decline in religiosity in emerging adults while the religiosity of their parents remains the same (Arnett,

2000). However, after computing religious C/D, the values indicate religious similarities between parent and young adult child based on positive C/D mean scores (mean range: 0.53 – 0.80), which also indicates slightly higher parent scores across all religiosity dimensions.

In the sample of 161 pairs of parents and emerging adult participants, Concordance/ Discordance (C/D) in Non-Organizational Religiosity between parent and young adult was significantly and inversely associated with reported depressive symptoms ($p=0.0083$). Concordance/Discordance in Non-Organizational Religiosity is the difference between parent and emerging adult in practice of activities such as prayer/meditation and Bible study. This construct was measured for both the young adult and parent by response to the question "How often do you spend time in private religious activities, such as prayer, meditation or Bible study?" The results indicate that participants who report greater discordance (i.e., lower religiosity) from their parents in the area of non-organizational religious activities also report higher scores for symptoms of depression. These results are consistent with other findings in an adolescent sample that found that adolescents who report poorer quality parent-youth relationships are more likely to report episodes of depression (Lewinsohn, 2003). The finding that discordance in non-organizational religious activities is associated with higher levels of depressive symptoms in young adults identifies a particular religious dimension that may be valuable in addressing parent-child relationships in treatment of depression in youth/young adults. One would expect non-organizational religious activities to be an indicator of the individual's private actions related to their beliefs such as prayer time, meditation alone, or reading scripture privately rather than actions

that may be influenced by ties, commitments, or pressures with the religious organization. In other words, possibly NORA is a better reflection of core beliefs that are less influenced by external social pressures and expectations. Concordance in this area of religiosity may be a unique factor that reflects the similarities of the intergenerational belief systems between parent and young adult. However, the broad range of actions that individuals could regard as non-organizational religiosity may make identification of specific target actions difficult.

Previous literature supports the benefits of close relationships between parent and young adults. Studies report that strong bonds between parents and young people are linked to improved autonomy (Peterson & Bush, 1999), more meaningful relationships with peers (Birkeland et al., 2014), improved life satisfaction and psychological well-being (Jiang et al., 2013), and greater self-esteem (Bulanda et al., 2009) in young adults. Religious concordance may be one indication of a close relationship between emerging adults and their parents that potentially safeguards against risk of development of depressive symptoms in young adults.

Other variables that were significantly associated with depressive symptoms are gender ($p=0.0035$), the parental relationship asset with one parent ($p=0.0005$) and the parental relation relationship asset with both parents ($p<0.0001$). Females generally indicated more depressive symptoms than males, which is consistent with national survey data (US Census, 2010). Closer relationships with mom and dad both showed significant inverse association with depressive symptoms. The adjusted R^2 value for the model indicated that 23% of the variance in reported depressive symptoms in emerging adults is explained by C/D of Non-organizational religiosity, gender, and possession of

the parental relationship asset. This adjusted R^2 is even higher than a study regarding emerging adults and parental relationships where the constructs (i.e., self-worth, mother's attachment) of the model explained 21% of the variance in depressive symptoms (Kenny et al., 2006).

Limitations of the Study

Some limitations to the current study exist and warrant discussion. The study is based on self-report data, the quality of which is dependent on the accuracy and completeness of individual responses. The sample was largely limited to participants from a state in the southwestern United States, and the majority of the participants were white (87.0%) and female (74.5%). According to the 2010 US Census, the general population of this state is 72.2% white and 49.5% of those are male, so generalizability of this sample to the population of this state may be inappropriate. For the most part, there was religious concordance between the matched pairs that participated in this study (median range for C/D ORA, NORA, and IR range from 0 – 1). Having a more religiously diverse parent-young adult sample would produce a wider range of concordance/discordance in religiosity and likely yield a more representative sample. The study does not address cause-and-effect relationships involved in the associations. Both parent and young adult respondents were primarily female, so the study is heavily weighted by input from mothers and daughters. Thus, relationships involving fathers and sons were underrepresented. In addition, depression levels of parents were not measured and could have created some confounding issues without controlling for this factor.

Future Recommendations

This study provides a limited view of the religious factors that may influence depression among young adults. For example, when asked about participation in non-organizational religiosity activities, prayer and meditation time were given as possible examples. There may be other specific activities (e.g., listening to religious music, religious chanting) that may facilitate to more accurate responses for this religious dimension depending on the participant and the religious affiliation of that participant. Given the findings of this study, future empirical studies should focus on the specific mechanisms involved in the relationships between these factors and depressive symptoms. Future studies should also evaluate the efficacy of interventions that may mitigate negative impacts of religious discord with parents or enhance the benefits of existing religious concordance. In order to better understand the specific actions of non-organizational religiosity, future qualitative studies are recommended to identify and explore the specific actions within this religiosity construct that individuals participate in across multiple religions. Better understanding of specific components of non-organizational religious activities across different religions may provide insight into the mechanisms that contribute to a protective effect against depressive symptoms in emerging adults.

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Chapter 4: Manuscript 2 - Appendix

Table 2.1 Characteristics of Young Adults and Their Parents

Young adult Characteristics, n=161 Frequency (%)		Parents Characteristics, n=161 Frequency (%)	
Gender		**Gender**	
Female	120(74.5)	Female	122(75.8)
Male	41(25.5)	Male	39(24.2)
Age		**Age**	
18-19	56(34.8)	30 - 39	4(2.5)
20-21	67(41.6)	40 – 49	73(45.6)
22-24	38(26.6)	50 - 59	75(46.9)
		60 - 69	8(5.0)
Ethnicity		**Ethnicity**	
American Indian	18(11.2)	American Indian	10(6.2)
NH white	122(75.8)	NH white	140(87.0)
NH African American	4(2.5)	NH African American	3(1.9)
Hispanic	9(5.6)	Hispanic	4(2.5)
Asian	6(3.7)	Asian	3(1.9)
Other	2(1.2)	Other	1(0.6)
Family Structure			
2-parent family	70(43.5)		
1-parent family	15(9.3)		
Independent	76(47.2)		
Education		**Education**	
12^{th} grade or below	6(3.7)	Less than high school	2(1.2)
Freshman	42(26.1)	HS degree, GED, or some college	54(33.5)
Sophomore	34(21.1)	Bachelor degree or higher	105(65.2)
Junior	34(21.1)		
Senior	41(25.5)		
Graduate student	4(2.5)		

Table 2.2: Prevalence of Depressive Symptoms (yes or no)

Subcategories of Participant (total n=161)	**Presence of Depressive Symptoms over the last week Frequency (%*)**
Gender	
Female (n=120)	45 (37.5)
Male (n=41)	6 (14.6)
Age	
18-19 (n=56)	13 (23.2)
20-21 (n=67)	24 (35.8)
22-24 (n=38)	14 (36.8)
Young Adult Education	
12th grade or below (n=6)	0 (0.0)
Freshman (n=42)	11 (26.2)
Sophomore (n=34)	12 (35.3)
Junior (n=34)	13 (38.2)
Senior (n=41)	15 (36.6)
Graduate student (n=4)	0 (0.0)
Family Structure	
2-parent family (n=70)	15 (21.4)
1-parent family (n=15)	6 (40)
Independent (n=76)	30 (39.5)
Parent Education	
Less than high school (n=2)	1 (50)
HS degree, GED, or some college (n=54)	21 (38.9)
Bachelor degree or higher (n=105)	29 (27.6)

*A percentage of young adults with depressive symptoms in each subcategory.

Table 2.3: Descriptive Statistics for Young Adults and Parents Religiosity Responses

Questions	Young Adults						Parents					
	N	Min	Max	Mean	SD	Median	N	Min	Max	Mean	SD	Median
1. ORA: How often do you attend church or other religious meetings?[1]	161	1	6	3.39	1.80	3	161	1	6	4.00	1.75	5
2. NORA: How often do you spend time in private religious activities, such as prayer, meditation or Bible study?[2]	161	1	6	2.74	1.89	2	161	1	6	3.67	1.84	4
3. IR: In my life, I experience the presence of the Divine (i.e., God).[3]	161	1	5	3.40	1.62	4	161	1	5	4.19	1.22	5
4. IR: My religious beliefs are what really lie behind my whole approach to life.[3]	161	1	5	3.11	1.65	3	160	1	5	3.83	1.35	4
5. IR: I try hard to carry my religion over into all other dealings in life.[3]	161	1	5	3.01	1.67	3	161	1	5	3.86	1.36	4

[1] 1=Never
2= Once a year or less
3= A few times a year
4= A few times a month
5= Once a week
6= More than once a week

[2] 1= Rarely or never
2= A few times a month
3= Once a week
4= 2 or more times a week
5= Daily
6= More than once a day

[3] 1= Definitely not true
2= Tends not to be true
3= Unsure
4= Tends to be true
5= Definitely true of me

Table 2.4: Descriptive Statistics for Parent and Young Adult Concordance-Discordance (C/D) Religiosity Scores (DUREL) for each Sub-scale*

Variable	N	Min	Max	Median	Mean	SD
C/D Score for Organizational Religious Activities (ORA)	161	-4	5	0	0.57	1.68
C/D Score for Non-organizational Religious Activities (NORA)	161	-5	5	0	0.93	2.00
C/D Score for Instrinsic Religiosity (IR)	161	-4	5	0	0.80	1.70
Item 1	161	-4	4	0	0.73	1.66
C/D Score for IR item 2	161	-4	4	1	0.84	1.74
C/D Score for IR item 3						
C/D Score for IR Scale**	160	-12	12	1.00	2.38	4.75

*Parent/young adult concordance/discordance religiosity scores were reported as parent scores minus young adult religiosity scores.
**Values are based on a 3-item scale

Table 2.5: Young Adult Asset Descriptive Statistics

Assets	Questionnaire Items	N	Min	Max	Median	Mean	SD
Relationship with Mom	How close do you feel to your mother? [3]	161	1	4	4	3.63	0.68
	Most of the time, your mother is warm and loving toward you. [2]	161	1	4	4	3.50	0.70
	You are satisfied with the way your mother and you communicate with each other. [2]	161	1	4	3	3.19	0.83
	Overall, you are satisfied with your relationship with your mother. [2]	161	1	4	4	3.38	0.78
Relationship with Dad	How close do you feel to your father? [3]	161	1	4	4	3.21	0.96
	Most of the time, your father is warm and loving toward you. [2]	161	1	4	3	3.18	0.97
	You are satisfied with the way your father and you communicate with each other. [2]	161	1	4	3	2.89	0.99
	Overall, you are satisfied with your relationship with your father. [2]	161	1	4	3	3.09	1.01

[1] 1=almost never
2=some of the time
3=usually
4=almost always

[2] 1=strongly disagree
2=disagree
3=agree
4=strongly agree

[3] 1=not at all
2=very little
3=somewhat
4=quite a bit

Table 2.6: Regression analysis for Variables Associated to Depressive Symptoms in Young Adults (N=161) (Adjusted R^2 = .38)*

Source	Estimate Coefficient	Standard Error	t	p-value	Partial r value
Constant	21.84	3.29	6.65	<0.0001	0.002
C/D of ORA in parent and young adult pairs	-0.119	0.246	-0.49	0.63	0.00
C/D of NORA in parent and young adult pairs	0.545	0.204	2.68	**0.0083***	0.080
C/D of IR Item 1 in parent and young adult pairs	-0.023	0.293	-0.08	0.94	0.00
C/D or IR Item 2 in parent and young adult pairs	-0.200	0.37	0.53	0.594	0.00
C/D or IR Item 3 in parent and young adult pairs	-0.106	0.349	-0.30	0.761	0.00
Gender					
Male	ref	ref	ref	ref	0.053
Female	1.90	0.640	2.98	**0.0034**	
Age					
18-19	ref	ref	ref	ref	
20-21	1.37	0.802	1.69	0.10	0.00
22-24	-0.104	0.676	-0.15	0.878	
Parent Education					
Less than high school	ref	ref	ref	ref	
HS degree, GED, or some college	-4.21	2.69	-1.57	0.12	0.02
Bachelor degree or higher	-5.43	2.66	-2.04	0.10	
Family Structure					
1-parent family	ref	ref	ref	ref	
2-parent family	-0.405	1.058	-0.3	0.702	0.02
Independent	0.551	1.501	0.52	0.60	
Parental Relationship**					
0 = no relationship w/ mom or dad	ref	ref	ref	ref	
1 = either relationship w/ one parent	-4.29	1.317	-3.26	**0.0005**	0.065
2 = relationship w/both parents	-5.97	1.27	-4.71	<0.0001	

*Concordance/Discordance = C/D
Organizational religious activities = ORA
Non-organizational religious activities = NORA
Intrinsic Religiosity = IR
**Interactions are analyzed parental relationship assets for the association between depressive symptoms and Concordance/Discordance of Non-organizational Religiosity (NORA) in parent and young adult pairs. No interactions were found to be statistically significant. Parental relationship asset*NORA variable: p=0.80

Table 2.7: Spearman Correlation Coefficients and P-values for Independent Variables and Assets (N=161) (alpha=0.05)

Source		Concordance/Discordance (C/D) of Organizational Religiosity	C/D of Non-Organizational Religiosity	C/D of Intrinsic Religiosity	Parental Relationship Asset
C/D of Organizational Religiosity	Coefficient P-Value	---	**0.57** **<.0001**	**0.64** **<.0001**	-0.12 0.111
C/D of Non-organizational Religiosity in Parent and Young adult pairs	Coefficient P-Value	---	---	**0.60** **<.0001**	-0.08 0.301
C/D of Intrinsic Religiosity	Coefficient P-Value	---	---	---	-0.23 0.004
Parental Relationship Asset	Coefficient P-Value	---	---	---	---

Manuscript 3

Associations between Suicide Ideation in Young Adults and Religious Discord with Their Parents

Abstract:

The relationship between young adults and their parents has been studied as a potential factor associated with the quality of mental health and young adult development. In this cross-sectional study, the relationships between suicide ideation in young adults (ages 18-24) and religious concordance or discordance (C/D) with their parents (n=161 matched pairs) were investigated. No significant associations were found between suicide ideation and C/D for the three measured dimensions of religiosity (i.e., Organizational religious activities, Non-organizational religious activities, and Intrinsic Religiosity). Discussion and recommendations are provided for future studies regarding suicide ideation analysis, sample recruitment, and sample size.

Keywords: Young adults, depression, religiosity, concordance, discordance, relationship with dad, relationship with mom

Introduction/Background

Mental health disorders in young adults are a serious public health problem in the United States that often can be overlooked. Mental health issues often manifest during childhood and early adolescence, and early treatment is vital in order to ensure no long-term complications that adversely affect quality of life into adulthood (WHO, 2016). One serious mental health risk is suicidal behaviors. Suicide is the third leading cause of death in adolescents and young adults 10 - 24 years old. This mortality rate translates to 4,600 deaths per year in this age group. (CDC, 2015). Research suggests that the hope of obtaining relief from severe mental hardships such as emotional trauma or persistent depression is a prime motivation for suicidal behaviors (i.e., suicide attempts) and suicide ideation (thoughts of committing suicide) (Pompili, 2010). Furthermore, young people that survive suicide attempts are more likely to attempt suicide again, incur repeated injuries from non-suicidal violent behaviors such as fighting, and/or suffer other emotional issues including depression (CDC, 2013). In other research, data indicates that 1 in 12 college students have had thoughts of suicide (i.e., suicide ideations) including development of a detailed plan (AAS, 2007). *Healthy Campus, 2010* has issued a goal (Objective 18−1) to reduce the rate of suicide attempts and completed suicides on college campuses in the United States due to this serious public health crisis (ACHA, 2010).

Relationship between Suicide and Religiosity in Young Adults

Religiosity has been associated with a decrease risk of suicide behaviors (Koenig, 2008; Schnittker, 2001; Osman et al., 1996). Research related to the relationship between religiosity and suicidal behavior in adolescents is equivocal.

Osman et al., (1996) reported a negative relationship between depression and moral objection to suicide that was grounded in religion among inpatient psychiatric adolescents. Interestingly, another study involving juvenile delinquents undergoing psychiatric treatment reported no relationship between depression and moral objections to suicide (Cole, 1989). A number of factors may contribute to the inconsistency in findings related to this relationship. One confounding issue is the varied definitions and measurements of religiousness. Some measure religiousness as the number of church services attended, while others measure it as an amount of time involved in devotion and prayer (Koenig, 2001). Koenig suggests that religiosity be measured utilizing at least three subscales (i.e., dimensions) of religion. These dimensions are organizational (e.g., church attendance) religious activities, non-organizational religious activities (e.g., prayer time), and intrinsic religiosity (i.e., individual spirituality or personal beliefs, feelings, or motivation that involve practices of religion that reflect a major commitment in someone's life). Religiosity/Spirituality is operationalized in this study as the participation in some form of religious social structure or activity (e.g., participation in church and/or religious groups, and/or prayer time) (Koenig, 2009). In addition, Koenig's definition includes a spirituality component that is broadly defined as a personal journey for understanding answers to critical and final questions about one's own existence, one's relationship with the transcendent or sacred, and meaning that may or may not lead to the creation and advancement of religious rituals and community building (Koenig, 2008).

One longitudinal study (Nkansah-Amankra, 2012) investigated the relationships between religiosity, psychosocial factors, and suicidal behaviors in youth/young adults

over a 14-year period during which the participants aged from adolescence to early adulthood. The study utilized data from the U.S. National Longitudinal Study of Adolescent Health (Add Health) that included 9412 participants that were interviewed in four waves from 1994 to 2008. Participants began the study while in grades 7-12 during the 1994-1995 school year, and were 26-34 years of age at Wave 4. The primary analysis in this study investigated the relationship of religiosity at baseline with suicidal behaviors reported in the subsequent waves. Other variables were included representing demographic and psychosocial factors. The results of the analysis showed that, in adjusted models, weekly church attendance (a score of 2 on the public religiosity item) was associated with reduction of suicide ideation at Wave 3. The study also showed that females had a higher risk of suicidal behaviors, but the risk was reduced as they grew into adulthood (Nkansah-Amankra, 2012). Most studies control for demographics, but other variables, such as psychosocial factors are not controlled for. Dew et al. (2010) recommend controlling for other factors including family closeness and substance abuse as these can be mediating factors that influence the relationship between religion and depression in youth (Dew et al., 2010). The current study used a 3 dimensional measure of religiosity and controlled for family structure as recommended. However, this study recruited young adults from the general population rather than sampling only adolescents diagnosed with a psychological disorder.

Parent-Young Adult Religiosity Concordance/Discordance

One significant factor in the life-success of young adults is the quality of their relationship with their parents (Armsden, 1986; Cotterell, 1992; Van Wel et al., 2000). A number of studies have found that stronger bonds between parents and young people

are linked to greater autonomy (Peterson & Bush, 1999), healthier relationships with peers (Birkeland et al., 2014), increased self-esteem (Bulanda et al., 2009), and psychological well-being and life satisfaction (Jiang et al., 2013). One factor in the relationship is religious concordance between parent and child. Religious beliefs and perceptions are often passed from parent to child (Glass, 1986) and some research suggests that parent-child religious concordance is associated with closer relationships (Myers, 2004). Because of this, one may suspect that possible religious discordance between parent and young person may be associated with adverse effects. This study investigates this relationship between religiosity discordance/concordance between parent and young adult child and self-reported suicide ideations and attempts reported by those young adults.

A study by Kim-Spoon and McCullough (2012) explored the connection between parents' religiousness and their child or children's psychological adjustment later in life. The study looked at how the religiousness of the parents' moderates or mediates processes that influence the adjustment of the child. The study used data from 322 adolescents (mean age = 12.63 yrs., 45% female, 84% Caucasian) and their respective parents. The results suggest that parent organizational religiousness is significantly and directly related with boys' organizational religiousness. Differences in organizational religiousness between parents and corresponding boy/girl adolescents were associated with increases in internal (e.g., depression, withdrawal, anxiety, and physical complaints) and external (e.g., delinquency and aggressive behaviors) psychological behaviors. Interestingly, for both boys and girls, there was a significant direct (detrimental) relationship between parental personal religiousness and adolescent

internalizing symptoms (e.g. withdrawal or depression), but only when parent-child attachment was low. Parent-child attachment score was assessed using a 12-item self-report survey called the Inventory of Parent Attachment. The association was not evident when the parent-child attachment was found to be high. The researchers suggest that the relationship between parent and child in terms of communication, trust, and closeness may be a more relevant predictor of internalized (e.g. withdrawal, depression, etc.) and externalized symptoms (e.g. aggressive or delinquent behaviors) than either parent or adolescent religiousness. Although this study has reported beneficial relationships between teen psychological well-being and religious concordance between young teens (ages 12 – 15 years old) and parents, we do not know the relationship between psychological well-being in young adults and religious concordance between parent and young adult child. This study aims to explore the associations between parent/young adult concordance/discordance in self-reported religiosity and suicide ideation in young adults. In addition, this study also investigates the influence of the presences of young adult assets of closeness to mom and dad relationship. These assets are measured to assess how strong the young adult's relationship is to his/her parents.

Young Adult Assets

The period during which teens transition to adulthood is considered critical because youth begin to develop a deeper sense of self and begin to make important choices that carry forward into the adult life. This critical time also can be confusing and challenging to youth, especially without sufficient guidance or the skills to navigate the many problems that may arise (Lenz, 2001). Health Promotion practitioners often

use research-based approach for developing practical programming to help build protective factors within the individual and the social environment. This is done to reduce the occurrence of health risk behaviors and to encourage the adoption of positive and successful choices during the youth transition into adulthood (Oman et al., 2004; Aspy et al., 2014; Oman et al., 2013; Cheney et al., 2015). As youth acquire assets, they begin to build life skills, relationships, and personal competencies that encourage the implementation of healthier behaviors in individuals (Lerner, 2005). Overall, youth who have acquired these assets are considered to be more likely to participate in healthy activities and choices, and are somewhat less likely to engage in risk behaviors. Existing studies have explored the relationship between youth assets and participation in risk behavior, such as premature sexual activity, alcohol and drug use, and adolescent violence (Oman, 2013; Haegerich, 2014; Aspy, 2014; & Cheney, 2015).

This study analyzed the data for potential interactions between specific young adult assets (see Table 3.7) and measures of religiosity/spirituality and suicide ideation. The two assets this study utilized are the relationships with mom and dad. These two assets have established validity and reliability in the research published related to many health outcomes, including sexual behaviors, drug & alcohol use, fighting, and others (Aspy et al., 2014; Kegler et al., 2005; Oman et al., 2004; Tamara et al., 2013). Research suggests that closeness and a strong bond between the mother and child as well as father and child can play a protective role against many negative health outcomes (Aspy et al., 2014; Kegler et al., 2005; Oman et al., 2004; Tamara et al., 2013). The mother and father have much influence in teaching strong interpersonal skills (e.g., better social and communication skills, interpersonal problem solving),

which also been linked to improved mental health (Gunlicks-Stoessel, 2010; Mufson, 2004; Oman et al., 2004).

Methodology

This study utilized a cross-sectional design to examine the associations between concordance-discordance in religiosity between young adults and a parent counterpart and suicide ideation after controlling for key demographic characteristics and relationship with mom and dad. Self-report data was collected from college students aged 18 – 24 years old and a parent counterpart during Spring 2017. An approximately 15 minute, computer-based survey was administered to young adults and parent pairs in the southwestern United States. Upon approval by the University of Oklahoma IRB and each university/college site, recruitment began with the intention of recruiting racially/ethnically and economically diverse participants in order to improve representativeness of the sample. Recruitment primarily was conducted on college and university campuses. The recruitment method used convenience and snow ball sampling. The investigator contacted college administrations/professors/instructors, organizational (i.e., clubs, sororities, fraternities) representatives, made face-to-face contact with students in-class, distributed a mass email to students, web listings (i.e., Facebook, organizational web pages), and distributed study flyers to multiple sites. Potential participants also were asked to share the study announcement with others that qualified to participate.

After initial contact, potential participants were given additional information about the study and the link to survey via email, text, phone calls or face-to-face in the classroom per permission of instructor/professor and approval of college/university IRB

approval. The PI provided the link to the student to complete the survey and then the student was asked to forward the parent survey link to one of their parents via email, text, phone call or face-to-face so that the parent could complete the survey. Prior to survey access, informed consent was provided via online survey by each participant. All stored data was anonymous and statistical analysis was performed on a password-protected computer.

Instrumentation

The 40-item young adult survey was organized into four sections that measured mental health, religiosity, youth assets, and demographics. The 21-item parent survey consists of 2 sections measuring religiosity and demographic. The questionnaire is written at a 6th grade reading level and required approximately 15 minutes for completion. Previously validated scales were utilized in both parent and young adult surveys.

Measures

Suicide Item from Add Health Survey

Suicide behaviors were assessed using 2 items from the first wave of The National Longitudinal Study of Adolescent Health (Add Health) (Bearman et al., 1997), which was an in-home interview related to sensitive topics (e.g., sexual activity and substance use) with data collected using laptop computers. Suicidal ideation was assessed by 2 questions. The first asked whether the participant had had considered suicide within the past 12 months and included a dichotomous response of "yes" or "no." Only those participants answering "yes" to the first item were able to answer the second item that addressed the number of suicide attempts.

Duke University Religion Index (*DUREL)*

The 5-item DUREL religiosity measure is a short, convenient scale intended for epidemiological studies, both cross-sectional and prospective, that investigate relationships between health outcomes and religion in a variety of populations. The DUREL has been utilized in more than 100 published research studies that were conducted worldwide in 10 different languages. It was intended to measure religiosity in Western religions, such as Christianity, Judaism, and Islam. Psychometric properties demonstrate high internal consistency (Cronbach's alpha's = 0.78–0.91) for the scale, good test-retest reliability (intra-class correlation = 0.91), and good convergent validity compared to other measures of religiosity (r's = 0.71–0.86) (Koenig & Bussig, 2010). The DUREL was selected for this study based on previous research recommendations to incorporate 3 dimensions of religiosity. Empirical evidence suggests that there are 5 dimensions of religiosity; however, only 3 dimensions appear to be important in health related research (Larson, 1986; Hoge, 1972; Koenig, 1997, 2001). These three dimensions include organizational religious activities, non-organization religious activities, and subjective or intrinsic religiosity. Organizational religious activities describe participant attendance at religious services or other religious group activities (e.g., bible study group or prayer group) in public or community settings such as a church or mosque. The first item of the DUREL measures organizational religious activities. This item asks about frequency of religious service participation. The non-organizational religious activities component describes behaviors or activities that are outside the community of organized religion or activities that are performed in private (e.g., reading of scripture or prayer, meditation, watching religious television shows,

etc.) The second item on the DUREL captures the non-organizational religious activity dimension. The item asks for frequency of religious activities performed privately. The final dimension of intrinsic religiosity describes an individual's personal beliefs, feelings, or motivation that involve practices of religion that reflect a major commitment in someone's life (Koenig, 1997). The last three items of the DUREL describe this third dimension of religiosity where the items specifically assess intrinsic religiosity (see Table 3.3).

ORA item was a Likert-scale with response options ranging from 1 (never) – 6 (more than once a week). The NORA item was a Likert-scale with response options ranging from 1 (never) – 6 (more than once a day). The IR items also were Likert-scales with response options ranging from 1 (definitely not true) – 5 (definitely true for me).

Youth Assets Survey (*YAS)*

The Youth Asset Survey (YAS) was a 5-wave longitudinal study that involved collection of data over 4 years from adolescents/young adults and their parents/guardians. YAS was designed to assess health risk behaviors in adolescents as well as to examine the individual, family, and community factors that protect youth from adoption of health risk behaviors. YAS sampled 1117 youth-parent pairs from diverse areas in Oklahoma County, OK. Results from factor analysis suggested that the construct measurements of the youth assets were reliable and valid. All subscales had Cronbach alphas of .60 or higher and all factor loading scores were .40 or higher (Oman, 2002b). Later, the scale was expanded to a 17-asset scale using factor analysis and test-retest analysis producing correlations. Final results established Spearman and interclass correlations that ranged from .60-.82 and .58-.87 respectively (Oman et al.,

2010). Assets selected for inclusion in this study included the relationship with mom and the relationship with dad. Assets were analyzed to determine if they are moderators between the independent and dependent variables.

Control variables:

Five demographic variables were included in the analyses as control variables: young adults reported gender, age, race/ethnicity, family structure, and parent education. Family structure was assessed with the question, "How many parents do you live with?" For parent education, participating parents were asked for the highest education level of both parents. In previous research, these same demographics were use as control variables and were shown to have influence on other outcome variables (e.g. alcohol and drug use) (Oman, 2004; Oman, 2009).

Religious Fundamentalism Scale

The Revised Religious Fundamentalism Scale (Rev-RFS) was used to measure religious fundamentalism. Religious fundamentalism is operationally defined as the unwavering or unchangeable belief system that an individual has to one set of religious views or teachings. These teachings include basic and fundamental truths about God and humanity. Specifically, this study measured whether people view their beliefs as "unchangeable practices." (Altemeyer & Hunsberger, 1992). This religious fundamentalism score was used as a control variable in order to assess the potential influence of religious fundamentalism on the relationship between religiosity and suicide ideation and suicide attempts.

Overall this study utilized these previously validated scales to determine any associations between parent-young adult religious concordance/discordance and suicide

ideation in young adults. In addition, this study assessed parent relationship assets as possible influencing factors in this relationship.

Data Analysis

Concordance/discordance scores were computed for each parent and young adult pair. A concordance/discordance (C/D) score was established as a categorical variable in the regression analysis. The concordance/discordance scores for each item were calculated by subtracting the young adult score from the parent score (P – Y) for each parent/young adult pair. Negative values would indicate that the young adult response was higher than parent response. Positive values would indicate the lower response rate for the religiosity item. Higher scores (i.e., - 5 or 5) would indicate more religiosity discordance between parent/young adult pairs and conversely lower scores (0, -1, 1) indicate more religiosity concordance. Once scores were computed, young adult participants were categorized as either having religious concordance or discordance with her/his parent. This scoring method is intended to demonstrate religious concordance/discordance values between young adult and parent pairs for DUREL and Religious Fundamentalism Scale items.

SAS 9.4 software was used to perform this analysis using an alpha at 0.05. Descriptive statistics are presented as frequencies for categorical data and mean, median, and standard deviation for continuous variables. Chi square analyses were performed to examine the association between each religiosity variable and outcome variables of suicide ideation. A logistic regression analysis was then utilized to examine possible associations between religiosity variables and suicide ideation while controlling for age, ethnicity, gender, parent education, family structure, and religious

fundamentalism. Two-way interactions between control variables and assets were then examined for interactions and added individually to create the fully adjusted model.

Results

The sample involved n=161 parent/young adult pairs. Of the paired participants, the majority was mostly female, with 75.8% of parent and 74.5% of young adult respondents being women. A large percentage of the paired participants reported their race to be non-Hispanic white (87.0% of parents and 75.8% of young adults). Frequencies for young adult ages ranged fairly evenly over the entire group from 18 to 24 years. The majority of parents described their age range to be 40 - 49 years (45%) or 50 -59 (46.9%). Overall, the majority of parents' education level was above a bachelor degree or higher (65.2%), and the 93.8% of college students were undergraduates in their freshman through senior years. The majority of young adults reported that they lived independently (47.2%) as opposed to living with one parent (43.5%) or two parents (9.3%)(see Table 3.1).

INSERT TABLE 3.1 HERE

Frequencies for suicide ideation among young adults across multiple categories are described in Table 3.2. Thirty young adult (18.6%) of the total number of participants (n=161) reported suicide ideation over the past 12 months. More females (23.3%) reported suicide ideation than males (4.9%), with 28 of the 120 females and 2 of the 41 males reporting suicide ideation. Most young adults reporting suicide ideation were in the 20-21 age range (22.4%). The participants with suicide ideation primarily reported being Juniors (32.4%) in college with Seniors (22.0%) having the second

highest percentage reporting suicide ideation. With regards to family structure, a majority of the young adults that reported suicide ideation lived independently (25.0%), while fewer reporting suicide ideation lived in 1-parent (13.3%) and 2-parents (12.9%) households. Finally, there were only two young adults who reported a parent had less than a high school education and both of these participants also reported suicide ideation. Fewer participants that reported suicide ideation also reported parent with a high school degree or some college (18.5%) and a parent with a college degree or higher (17.1%).

INSERT TABLE 3.2 HERE

Table 3.3 shows mean and median scores for the five religiosity questions, which are consistently higher among parents than among emerging adults. The mean scores for young adults ranged from 2.74 – 3.40 and their median scores ranged from 2 – 4, while mean scores for parents ranged from 3.67 – 4.19 and their median scores ranged from 4 – 5. Young adult responses had greater variability indicated by higher standard deviations for all religiosity items than parents in this sample. Table 3.4 indicated the parent and young adult groups generally reported similar values on the religious items as the median scores for concordance/discordance are zero for ORA and NORA, and 1.0 for IR. The IR subscale has the highest mean at 2.38; however, this subscale includes the total of 3 items, where only 1 item is included in each of the ORA and NORA subscales. So even though the IR subscale reported a higher mean C/D

score, the item mean values still are in line with the religiosity concordance of ORA and NORA.

Descriptive statistics for religious fundamentalism Rev-RFS items for the young adult and parents are shown separately in Table 3.5. Reverse coding was implemented for items (i.e., 2, 4, 7, 9, 10, and 12) in order to standardize the direction of responses. For each item on the scale, a participant could respond between 1 very strongly disagree) – 9 (very strongly agree). Those values closest to one indicate lower religious fundamentalism and those values closest to 9 indicate higher religious fundamentalism. The young adult religious fundamentalism item means ranged from 3.82 - 4.81, while parent means ranged from 5.12 – 6.73 indicating that parents scored somewhat higher on religious fundamentalism than their young adult counterpart. In addition, the total religious fundamentalism mean score was 58.8 for the young adults and 59.90 for their parents. Table 3.6 displays the concordance/discordance scores for each fundamentalism item, and again, the groups reported similar scores for religious fundamentalism items with median C/D scores ranging from 0 – 1 and mean C/D scores ranging from 0.88 – 1.81. For the entire scale, an overall C/D score was calculated and descriptive statistics indicate a total C/D score median of 13 and a total C/D score mean of 16.59 indicated similar scores between parent and young adult pairs on average. Young adults generally tended to respond slightly lower on the religious fundamentalism items (see Table 3.5 and 3.6), and standard deviations for young adults tended to be higher.

Table 3.7 presents descriptive statistics for the young adults responses for assets related to their relationship with mom and dad. The item with the lowest item mean

(least positive assessment of relationship) was “You are satisfied with the way your father and you communicate with each other”, which yielded a mean of 2.89 on a scale from 1 (strongly disagree) to 4 (strongly agree). The item with the highest mean (most positive assessment of relationship) was “How close do you feel to your mother?”, which had a mean response score of 3.63 on a scale from 1(not at all) to 4 (quite a bit). For this sample, young adults on average appeared to report that they possessed the mom and dad relationship asset. However, it is interesting that the most positive relationship assessment was related to the mother and the most negative was related to relationship to the father since the sample was largely young women.

INSERT TABLES 3.3 THRU 3.7 HERE

Associations between the religiosity concordance/discordance (C/D) values and suicide ideation in the past 12 months in young adults are presented in Table 3.8. Model 1 is the unadjusted model describing odds ratios and confidence intervals for religiosity C/D and suicide ideation without addition of the control variables to the model. Model 2 is the adjusted model with the demographic control variables included, and Model 3 adjusts for the presence of the assets of relationships with mom and dad. No significant associations (see Table 3.8, Model 1) were found between the C/D scores of the religiosity subscales or items and suicide ideation. These associations did not change with the addition of the demographic control variables (see Table 3.8, Model 2) or the parental relationship assets (see Table 3.8, Model 3). Non-significant associations

indicates no or weak relationship between C/D religiosity of parent/young adult pairs and reports of suicide ideation in young adults.

INSERT TABLE 3.8 HERE

Discussion

This study found no statistically significant associations between young adult suicide ideation and religious C/D between parent and young adult pairs in the three dimensions of religiosity measured (ORA, NORA, and IR). Due to the dichotomous nature of the dependent variable, suicide ideation, logistic regression was used for statistical analysis. With the total sample size at 320 (i.e., n=161 matched parent/young adult pairs), perhaps the associations were not strong enough to identify significant relationships. Another possible reason may be that there is no relationship between religious C/D in parent/young adults and suicide ideation in young adults, or perhaps the relationship is weak. Even in the unadjusted model 1, no significance associations were found. The C/D scores reflect concordance where the average mean ranged between 0-1. Greater variability in C/D scores may allow identification of a relationship between C/D in religiosity and suicide ideations.

In terms of descriptive data, the study found 18.6% (30/161) of young adults that reported suicide ideation, which is much higher than the national average of 7.4% for young adults aged 18 – 25. In our study, females were more likely to report suicidal thoughts compared to males, which is consistent with national reports on gender differences for this health topic (SAMHSA, 2013). Even with this higher percent of

participants reporting suicide ideation, the relatively small number of young adults that reported suicide ideation may have limited the power to detect associations if they exist.

Limitations

The study sample is a convenience sample because the participants were volunteers and they were informed the questionnaire would ask questions about suicide ideation. Thus if they had prior suicide ideation events or were interested in this health topic in other ways, they may have been motivated to participate or they may have declined to participate because of the topic. In either case, this could have biased responses and outcomes. The sample size was underrepresented for fathers and sons since this study primarily consisted of mothers and daughters. In addition, the parent/young adult pairs had a high degree of concordance in religiosity creating underrepresentation for analysis of religious discordance. The sample is from one geographical location; therefore, unable to generalize about individuals in other areas. Also, this was a cross sectional analysis, which does not address cause-and-effect relationships. Finally for this type of analysis, sample size was small, which may have affected the results of the study. Apriori g-power calculation suggested that with a power of 0.80, sample size for parent/young adult for this type of analysis should be 568. This study was only able to obtain 161 parent/young adult pairs.

Recommendations

Future recruitment efforts should strive to obtain a more representative sample in terms of demographics in order to prevent. Similarly, future studies should be designed to provide a more diverse range in religious discordance among parent religious beliefs and young adult religious beliefs. This study documented a high

degree of religious concordance in the matched pairs, while discordance in religiosity was underrepresented. Having specific recruitment methods designed to obtain data from a more religiously diverse group would provide much needed insight in this study topic.

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Chapter 4: Manuscript 3 - Appendix

Table 3.1 Characteristics of Young Adults and Their Parents

Young adult Characteristics, n=161 Frequency (%)		Parents Characteristics, n=161 Frequency (%)	
Gender		**Gender**	
Female	120 (74.5)	Female	122 (75.8)
Male	41 (25.5)	Male	39 (24.2)
Age		**Age**	
18-19	56 (34.8)	30 - 39	4 (2.5)
20-21	67 (41.6)	40 – 49	73 (45.6)
22-24	38 (26.6)	50 - 59	75 (46.9)
		60 - 69	8 (5.0)
Ethnicity		**Ethnicity**	
American Indian	18 (11.2)	American Indian	10 (6.2)
NH white	122 (75.8)	NH white	140 (87.0)
NH African American	4 (2.5)	NH African American	3 (1.9)
Hispanic	9 (5.6)	Hispanic	4 (2.5)
Asian	6 (3.7)	Asian	3 (1.9)
Other	2 (1.2)	Other	1 (0.6)
Family Structure			
2-parent family	15 (9.3)		
1-parent family	70 (43.5)		
Independent	76 (47.2)		
Education		**Education**	
12^{th} grade or below	6 (3.7)	Less than high school	2 (1.2)
Freshman	42 (26.1)	HS degree, GED, or some college	54 (33.5)
Sophomore	34 (21.1)	Bachelor degree or higher	105 (65.2)
Junior	34 (21.1)		
Senior	41 (25.5)		
Graduate student	4 (2.5)		

Table 3.2: Prevalence of Suicide Ideation (yes or no)

Subcategories of Participant (total n=161)	Presence of Suicide Ideation over the last 12 months Frequency (%*)
Gender	
Female (n=120)	28 (23.3)
Male (n=41)	2 (4.9)
Age	
18-19 (n=56)	8 (14.3)
20-21 (n=67)	15 (22.4)
22-24 (n=38)	7 (18.4)
Young Adult Education	
12th grade or below (n=6)	0 (0.0)
Freshman (n=42)	5 (11.9)
Sophomore (n=34)	5 (14.7)
Junior (n=34)	11 (32.4)
Senior (n=41)	9 (22.0)
Graduate student (n=4)	0 (0.0)
Family Structure	
2-parent family (n=70)	9 (12.9)
1-parent family (n=15)	2 (13.3)
Independent (n=76)	19 (25)
Parent Education	
Less than high school (n=2)	2 (100)
HS degree, GED, or some college (n=54)	10 (18.5)
Bachelor degree or higher (n=105)	18 (17.1)

*A percentage of young adults with suicide ideation in each subcategory.

Table 3.3: Descriptive Statistics for Young Adults and Parents Religiosity Responses

Questions	Young Adults						Parents					
	N	Min	Max	Mean	SD	Median	N	Min	Max	Mean	SD	Median
1. How often do you attend church or other religious meetings?[1]	161	1	6	3.39	1.80	3	161	1	6	4.00	1.75	5
2. How often do you spend time in private religious activities, such as prayer, meditation or Bible study?[2]	161	1	6	2.74	1.89	2	161	1	6	3.67	1.84	4
3. In my life, I experience the presence of the Divine (i.e., God).[3]	161	1	5	3.40	1.62	4	161	1	5	4.19	1.22	5
4. My religious beliefs are what really lie behind my whole approach to life.[3]	161	1	5	3.11	1.65	3	160	1	5	3.83	1.35	4
5. I try hard to carry my religion over into all other dealings in life.[3]	161	1	5	3.01	1.67	3	161	1	5	3.86	1.36	4

[1] 1=Never
2= Once a year or less
3= A few times a year
4= A few times a month
5= Once a week
6= More than once a week

[2] 1= Rarely or never
2= A few times a month
3= Once a week
4= 2 or more times a week
5= Daily
6= More than once a day

[3] 1= Definitely not true
2= Tends not to be true
3= Unsure
4= Tends to be true
5= Definitely true of me

Table 3.4: Descriptive Statistics for Parent and Young Adult Concordance-Discordance Religiosity (DUREL) for each Sub-scale*

Variable	N	Min	Max	Median	Mean	SD
Concordance/Discordance Score for Organizational Religious Activities	161	-4	5	0	0.57	1.68
Concordance/Discordance Score for Non-organizational Religious Activities	161	-5	5	0	0.93	2.00
Concordance/Discordance Score for Intrinsic Religiosity/Spirituality**	160	-12	12	1.00	2.38	4.75

*Parent/young adult concordance/discordance religiosity scores were reported as parent scores minus young adult religiosity scores.
**Values are based on a 3-item scale

Table 3.5: Descriptive Statistics for Young Adult and Parent Religious Fundamentalism

Items	Young Adults						Parents					
	N	Min	Max	Median	Mean	SD	N	Min	Max	Median	Mean	SD
God has given humanity, a complete unfailing guide to happiness and salvation, which must be totally followed.	161	1	9	5	4.73	3.10	161	1	9	7	6.29	2.65
No single book of religious teachings contains all the intrinsic, fundamental truths about life.	161	1	9	4	4.45	3.21	161	1	9	6	5.64	2.95
The basic cause of evil in this world is Satan, who is still constantly and ferociously fighting against God.	161	1	9	5	4.81	3.27	161	1	9	8	6.62	2.77
It is more important to be a good person than to believe in God and the right religion.	161	1	9	4	4.37	3.08	161	1	9	7	5.88	2.93
There is a particular set of religious teachings in this world that are so true, you can't go any "deeper" because they are the basic, bedrock message God has given humanity.	161	1	9	4	4.22	2.86	161	1	9	6	5.74	2.66
When you get right down to it, there are basically two kinds of people in the world: the righteous who will be rewarded by God; and the rest who will not.	161	1	9	3	3.82	2.89	161	1	9	5	5.27	2.96
Scriptures may contain general truths, but they should NOT be considered completely, literally true from beginning to end.	161	1	9	4	4.14	2.88	161	1	9	5	5.49	2.87
To lead the best, most meaningful life, one must belong to the one, fundamentally true religion.	161	1	9	3	3.93	2.97	161	1	9	5	5.12	2.86
"Satan" is just the name people give to their own bad impulses. There is really no such thing as a diabolical "Prince of Darkness" who tempts us.	161	1	9	6	5.84	2.81	161	1	9	8	6.73	2.74
Whenever science and sacred scripture conflict, science is probably right.	161	1	9	5	4.76	2.87	161	1	9	7	6.33	2.57
The fundamentals of God's religion should never be tampered with, or compromised with others' beliefs.	161	1	9	5	5.04	2.89	161	1	9	7	6.35	2.60
All of the religions in the world have flaws and wrong teachings. There is no perfectly true and right religion.	161	1	9	3	4.18	3.10	161	1	9	5	5.45	2.94
Total Religious Fundamentalism Score	161	37	108	59	58.80	7.85	161	12	108	60	59.90	9.10

Table 3.6: Descriptive Statistics for Parent and Young Adult Concordance-Discordance Religiosity (RRFS) for each item*

Variable	N	Min	Max	Median	Mean	SD
Concordance/Discordance Score for Fundamentalism Item 1	161	-8.00	8.00	1.00	1.57	3.13
Concordance/Discordance Score for Fundamentalism Item 2	161	-8.00	8.00	1.00	1.19	3.47
Concordance/Discordance Score for Fundamentalism Item 3	161	-8.00	8.00	1.00	1.81	3.28
Concordance/Discordance Score for Fundamentalism Item 4	161	-8.00	8.00	1.00	1.50	3.23
Concordance/Discordance Score for Fundamentalism Item 5	161	-7.00	8.00	1.00	1.52	3.03
Concordance/Discordance Score for Fundamentalism Item 6	161	-7.00	8.00	1.00	1.45	2.96
Concordance/Discordance Score for Fundamentalism Item 7	161	-8.00	8.00	1.00	1.35	3.07
Concordance/Discordance Score for Fundamentalism Item 8	161	-6.00	8.00	1.00	1.19	3.33
Concordance/Discordance Score for Fundamentalism Item 9	161	-8.00	8.00	0	0.88	2.97
Concordance/Discordance Score for Fundamentalism Item 10	161	-8.00	7.00	1.00	1.57	2.95
Concordance/Discordance Score for Fundamentalism Item 11	161	-7.00	8.00	1.00	1.30	3.11
Concordance/Discordance Score for Fundamentalism Item 12	161	-8.00	7.00	0	1.27	3.14
Concordance/Discordance Score for Total Fundamentalism	161	-70.0	91.0	13	16.59	28.03

*Parent/young adult concordance/discordance religiosity scores were reported as parent scores minus young adult religiosity scores.

Table 3.7: Young Adult Asset Descriptive Statistics

Assets	Questionnaire Items	N	Min	Max	Median	Mean	SD
Relationship with Mom	How close do you feel to your mother? [3]	161	1	4	4	3.63	0.68
	Most of the time, your mother is warm and loving toward you. [2]	161	1	4	4	3.50	0.70
	You are satisfied with the way your mother and you communicate with each other. [2]	161	1	4	3	3.19	0.83
	Overall, you are satisfied with your relationship with your mother. [2]	161	1	4	4	3.38	0.78
Relationship with Dad	How close do you feel to your father? [3]	161	1	4	4	3.21	0.96
	Most of the time, your father is warm and loving toward you. [2]	161	1	4	3	3.18	0.97
	You are satisfied with the way your father and you communicate with each other. [2]	161	1	4	3	2.89	0.99
	Overall, you are satisfied with your relationship with your father. [2]	161	1	4	3	3.09	1.01

Responses:

[1] 1=almost never
2=some of the time
3=usually
4=almost always

[2] 1=strongly disagree
2=disagree
3=agree
4=strongly agree

[3] 1=not at all
2=very little
3=somewhat
4=quite a bit

Table 3.8: Associations between Religious Concordance/Discordance and Suicide Ideation Status over the last 12 months

Variables	Model 1	Model 2	Model 3
	Odds Ratio (95%CI)	Odds Ratio (95%CI)	Odds Ratio (95%CI)
Parent-Young adult Concordance/Discordance for Organizational Religious Activities (e.g. church attendance)			
High Discordance (Young adult more religious)	1(reference)	1(reference)	1(reference)
Medium Discordance (Young adult more religious)	0.600 (0.027, 13.582)	0.191(0.005, 7.570)	0.162 (0.004, 6.579)
More Concordance	0.633 (0.062, 6.423)	0.184 (0.011, 3.078)	0.144 (0.008, 2.513)
Medium Discordance (Parent more religious)	0.429 (0.035, 5.189)	0.122 (0.006, 2.406)	0.082 (0.004, 1.790)
High Discordance (Parent more religious)	3.000 (0.227, 39.608)	1.026 (0.044, 24.142)	0.601 (0.025, 14.524)
Parent-Young adult Concordance/Discordance for Non-Organizational Religious Activities (e.g. prayer time)			
High Discordance (Young adult more religious)	1(reference)	1(reference)	1(reference)
Medium Discordance (Young adult more religious)	1.000 (0.045, 22.175)	0.423 (0.011, 15.602)	0.275 (0.008, 10.019)
More Concordance	0.612 (0.063, 5.908)	0.124 (0.007, 2.160)	0.106 (0.006, 1.865)
Medium Discordance (Parent more religious)	1.600 (0.154, 16.605)	0.363 (0.019, 6.825)	0.262 (0.013, 5.100)
High Discordance (Parent more religious)	1.556 (0.147, 16.455)	0.285 (0.014, 5.674)	0.239 (0.012, 4.701)
Parent-Young adult Concordance/Discordance for Intrinsic Religiosity 1(I experience the presence of the divine)			
High Discordance (Young adult more religious)	1(reference)	1(reference)	1(reference)
Medium Discordance (Young adult more religious)	2.000 (0.125, 31.975)	5.244 (0.170, 162.053) 0.361	4.950 (0.156, 157.421)
More Concordance	0.622 (0.125, 31.975)	(0.026, 4.959)	0.270 (0.020, 3.579)
Medium Discordance (Parent more religious)	1.846 (0.168, 20.256)	1.388 (0.088, 21.869) 0.822	0.933 (0.061, 14.372) 0.507
High Discordance (Parent more religious)	1.400 (0.133, 14.743)	(0.053, 12.808)	(0.032, 7.941)
Parent-Young adult Concordance/Discordance for Intrinsic Religiosity 2 (Religious beliefs lie behind my whole life approach)			
High Discordance (Young adult more religious)	1(reference)	1(reference)	1(reference)
Medium Discordance (Young adult more religious)	2.500 (0.100, 62.605)	4.847 (0.110, 213.537) 0.758	4.864 (0.101, 234.831)
More Concordance	0.769 (0.084, 7.079) 2.083	(0.065, 8.833)	0.506 (0.043, 6.004)
Medium Discordance (Parent more religious)	(0.191, 22.670) 1.905 (0.192,	2.601 (0.184, 36.701) 1.935	2.181 (0.156, 30.479)
High Discordance (Parent more religious)	18.928)	(0.149, 25.209)	1.211 (0.090, 16.228)
Parent-Young adult Concordance/Discordance for Intrinsic Religiosity 3 (Carry religion in all dealings of life)			
High Discordance (Young adult more religious)	1(reference)	1(reference)	1(reference)
Medium Discordance (Young adult more religious)	3.000 (0.122, 73.643)	10.060 (0.245, 413.510)	15.67 (0.405, 605.73)
More Concordance	0.453 (0.083, 2.491)	0.573 (0.087, 3.795)	0.354 (0.051, 2.437)
Medium Discordance (Parent more religious)	0.750 (0.108, 5.216)	1.134 (0.124, 10.416)	0.695 (0.072, 6.717)
High Discordance (Parent more religious)	1.364 (0.233, 7.976)	1.624 (0.221, 11.949)	0.918 (0.118, 7.159)

Model 1: Univariate model
Model 2: adjusted for age, gender, ethnicity, family structure, and parent education
Model 3: adjusted for covariates in model + mom and dad asset

CHAPTER 5

Discussion

This study extends research on the association between religiosity and mental health by investigating the associations between religious activities/beliefs with depressive symptoms and suicide ideation in young adults. In addition, this study contributes to the under-examined association of religious concordance/discordance between young adult/parent pairs with depressive symptoms and suicide ideation in young adults. This study also contributes to our understanding of the association between religiosity and self-reported mental health status was influenced by relationship to their parents.

Research Question 1: Are measures of religiosity in young adults associated with self-reported depressive symptoms and suicide ideation in young adults? Do young adult assets (relationship with mom and relationship with dad assets) influence this relationship?

Overall 31.4% of this young adult sample reported depressive symptoms and 16.3% reported having suicide ideations. Those who did not report depressive symptoms or suicide ideation were more likely to live in a 2-parent family. Those with a parent that had at least a bachelor's degree or higher were less likely to report depressive symptoms and those with a parent that had a high school or some college were less likely to report suicide ideation. A large percent (38.1%) of young adults did not attend organizational religious activities (e.g., attend church) and even fewer (46.2%) reported high levels of participation in non-organized religious activities (e.g.,

prayer time). However, young adults tend to be more evenly distributed between lower and higher levels of intrinsic religiosity/spirituality.

Across the three religious subscales, depressive symptoms were significantly associated with each religiosity item, with higher levels of religiosity in each item related to lower depressive symptom scores. Relationship with mom and dad also was significantly related to depressive symptoms, with the presence of parental relationship assets being significantly associated with lower depressive symptom scores. However, no interactions were identified. Numerous studies have found significant inverse associations between reports of depressive symptoms and religiosity in this population (Arnett, 2000; Yonker, 2012, Eliassen; 2005; Miller et al., 2012). However, this study has extended the research by measurement of three religious dimensions and controlling for young adult assets (i.e., relationship with mom and dad) in order to determine if the relationship depressive symptoms in young adults and religiosity is influenced by the quality of parental relationships. Overall, we see significant inverse associations between reports of depressive symptoms and suicide ideation and all three subscales of religiosity. These associations may indicate that religious beliefs and practices serve as a coping mechanism during periods of stress, offsetting depressive symptoms. The social support related to religious attendance may be valuable in creating stronger ties, thereby shielding against depression. During this time of self-exploration (emerging adulthood), those with more uncertainty in their belief system may experience more inner conflict than those who have a more stable belief system. This dissonance may contribute to the development of depressive symptoms.

Suicide ideation is significantly associated with higher religiosity scores across the three religiosity subscales. The findings suggest that as participants report more religious/spirituality-based activity (higher scores) in organizational (e.g., church attendance), non-organizational (e.g., prayer time), and intrinsic religiosity there is lower risk of reporting depressive symptoms. Young adults who report higher religiosity may have more hope or faith in the outcome of stressful situations. Often during times of stress, there is greater meaning for the person of faith when one feels that the suffering has purpose and that greater purpose, in and of itself, may bring consolation during difficult times. Pope John Paul II writes in his *Salvifici Doloris* that suffering has a purpose and for some even a vocation (Pope John Paul II, 1984).

This study did find a significant interaction between the dad asset ($p = 0.04$) when analyzing associations between religiosity (i.e., ORA) and suicide ideation. The stratified analysis indicated a significant association between high levels of religiosity and low levels of suicide ideation among the young adult that reported having the dad asset. This relationship was not significant among the young adults that did not have the dad asset. This significant finding indicates that when the young adult has the dad asset, there was decreased risk of suicide ideation where the presence of the dad asset strengthened (moderated) the relationship between religiosity and suicide ideation. These findings are consistent with other research on father-child relationships that suggest that stronger ties or closer relationships of a child with his/her father provide greater life satisfaction, improved abilities to react to new situations, and better problem-solving skills (Arnato, 1994; Arnato & Gilbreth, 1999).

Research Question 2: Is the concordance/discordance between young adult and parent on measures of religiosity associated with self-reported depressive symptoms in young adults? Do young adult assets (relationship with mom and relationship with dad assets) influence this relationship?

This study examined potential associations between religious concordance/discordance of parent/young adult pairs and depressive symptoms in young adults. A total of 31.7% of the young adult sample reported depressive symptoms. The majority of the sample that reported depressive symptoms was female (28%) and lived independently (39.5%). In the sample (n=161) of parent/young adult pairs, one significant association was found between concordance/discordance (C/D) in non-organizational religiosity (NORA) (i.e., "How often do you spend time in private religious activities, such as prayer, meditation or Bible study?") with reported depressive symptoms (p=0.015). The concordance/discordance in NORA score is the difference between parent and young adult reports of participation in activities including prayer time, meditation, and Bible study. The findings indicate that young adults who reported greater discordance from their parent in NORA also reported higher depressive symptom scores. These findings are consistent with other results in a youth sample that found that youth who are not as religious as their parents also report lower quality parent-youth relationships (Kim-Spoon et al., 2012). This study utilizes a different age group, emerging adults, and identifies a specific religious dimension (i.e., NORA) that was significantly associated with lower reports of depressive symptoms in young adult. These factors might be valuable in addressing parent-child relationships in depression treatment/management programs for young adults.

Presumably, the non-organizational religiosity item may be an indicator of young adults' private activities connected to their true values and beliefs rather than actions that could be influenced by social ties, pressures, or commitments with the church, or other religious organization. Concordance in NORA may be a unique indicator of the similarities in intergenerational belief systems between parent and young adult. However, the wide array of activities that persons could consider as non-organizational religiosity may make assessing specific target actions challenging.

Research discusses extensively the benefits of close relationships between parent and young adults. For example, one study reported improved autonomy with stronger bonds between parent and youth (Peterson & Bush, 1999), while another study reported a deeper relationship with peers (Birkeland et al., 2014). Improved life satisfaction, psychological well-being, and self-esteem were reported in individuals with stronger ties with parents (Bulanda et al., 2009; Jiang et al., 2013). Religious concordance also may indicate a close relationship between parents and young adults that protects young adults against risk for depressive symptoms because of this closeness.

Other variables that had a significant association with depressive symptoms were gender ($p=0.0027$), the Dad asset ($p=0.0013$), and Mom asset ($p=0.0075$). Females generally reported more depressive symptoms than males, which is consistent with previous figures established from national survey data (US Census, 2010). Both parental relationship assets had significant inverse associations with depressive symptoms. In the regression model, the adjusted R^2 value indicated that 38% of the variance in reported depressive symptoms in young adults is explained by C/D of

organizational religiosity activities, C/D of non-organizational religiosity, C/D of intrinsic religiosity, age, gender, family structure, parent education, dad asset, and mom asset. This adjusted R^2 is even larger than a study about parental and emerging adults' relationships where 23% of the variance in depressive symptoms was accounted for by constructs of the model (Kenny et al., 2006).

Research Question 3: Is the concordance/discordance between young adult and parent on measures of religiosity associated with self-reported suicide ideation in young adults? Do young adult assets (relationship with mom and relationship with dad assets) influence this relationship?

There were no statistically significant associations found between C/D in religiosity variable (i.e., ORA, NORA, and IR) in young adult/parent pairs and suicide ideation in young adults. No significant predictors were identified in the unadjusted or the adjusted models. In the instrument, suicide ideation was dichotomous (i.e., yes/no); therefore, logistic regression was required to perform this analysis. Specifically, for research question 3, the sample size was small when performing logistic regression for examining associations between religious concordance/discordance in parent/young adult pairs and suicide ideation. Further, there were only 30/161 young adults that reported having suicide ideation, which minimizes the sample even more.

Limitations

As noted previously, the limited number of parent-young adult pairs and the small number of young adults that reported suicide ideation potentially decreased the

power for analysis using logistic regression for RQ3. The current study used self-report surveys that are dependent on the honesty and accuracy of participant responses. Our study sample consisted of mainly white females from educated families, and most possessed both the mom and dad asset. In the parent/young adult pairs, there was a high percentage of pairs that reported agreement in their religious views. Having a more diverse group would provide better representation of different degrees of concordance/ discordance in religiosity and a wider range of reported depressive symptoms and suicide ideation.

Recommendations for Future Research

Future studies could investigate the relationship between mental health outcomes and religiosity in emerging adults using prospective analyses in order to help better explain the cause and effect relationship. In addition, future studies may also want to examine the relationship between mental health outcomes and depression and suicide in a younger population. The inclusion of other study variables to examine the relationship between religiosity and mental health may be important in future studies. For example, this study did not control for substance use or other social network factors (e.g., peer or non-parental interactions) that have been associated with mental health outcomes (Hackney & Sanders, 2003, Dew et al., 2010, Gunlicks-Stoessel, 2010; Mufson, 2004). Finally, future qualitative studies should explore the specific activities within each construct of religiosity that individuals participate in across multiple religions. Better understanding of these specific components of organized, non-organizational religious activities, and intrinsic religiosity across different religions may

provide better insight into the mechanisms that lead to a beneficial effect on depressive symptoms in emerging adults. Finally providing prospective studies would help in establishing cause and effect relationships.

Recommendations for Future Practice

Health promotion and public health practitioners could partner with faith-based organizations and/or religious leaders within the community to incorporate religious/spiritual components into mental health prevention/treatment programs. For those emerging adults that report religiosity as a core component of their being, having religiosity incorporated into programming would be beneficial for these individuals. Incorporating strategies to enhance parental relationships in health promotion programming would be beneficial in order to provide the necessary psychological resources needed for this special population of emerging adults. Establishing skills that address the unique relationship between parents and young adults may help in equipping the family so that young adults may transition smoothly and cope well during time of stress (e.g., moving out, changes in self-identity, and career/college changes).

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APPENDIX A

Young Adult Survey (18 - 24 year olds)

In this first section, you will be asked a few personal questions. Please read carefully and answer each question in the space provided.

Thank you for taking time to complete this questionnaire.

1. **What are the last 2 letters of your first name you are called by?**

   _____

2. **What is the first letter of your mother's first name?**

   _____

3. **What is the first letter of your father's first name?**

   _____

4. **What is the last letter in your last name?**

   _____

5. **What is the day (between 1 - 31) of the month you were born?**

   _____

6. **What is the second letter in your last name?**

   _____

There are no right or wrong answers in this survey. The survey is simply to describe beliefs, attitudes, and actions of young adults similar to you. Please check the answer that you feel that you mostly agree with.

PLEASE DO NOT PUT YOUR NAME ON THIS SURVEY.

We want you to feel safe to answer the questions honestly without anyone being able to identify your responses to this survey.

Thank you for your help.

OVER THE LAST WEEK, HOW HAVE YOU BEEN "ON AVERAGE" OR "USUALLY" REGARDING THE FOLLOWING ITEMS:

1. **Low mood, sadness, feeling blah or down, depressed, just can't be bothered.**

☐ Hardly Ever ☐ Much of The Time ☐ Most of The Time ☐ All of The Time

2. **Feelings of worthlessness, hopelessness, letting people down, not being a good person.**

☐ Hardly Ever ☐ Much of The Time ☐ Most of The Time ☐ All of The Time

3. **Feeling tired, feeling fatigued, low in energy, hard to get motivated, have to push to get things done, want to rest or lie down a lot.**

☐ Hardly Ever ☐ Much of The Time ☐ Most of The Time ☐ All of The Time

4. **Feeling that life is not very much fun, not feeling good when usually (before getting sick) would feel good, not getting as much pleasure from fun things as usual (before getting sick).**

☐ Hardly Ever ☐ Much of The Time ☐ Most of The Time ☐ All of The Time

5. **Feeling worried, nervous, panicky, tense, keyed up, anxious.**

☐ Hardly Ever ☐ Much of The Time ☐ Most of The Time ☐ All of The Time

6. **Thoughts, plans or actions about suicide or self-harm.**

☐	☐	☐	☐
Hardly Ever	Much of The Time	Most of The Time	All of The Time

7. **During the past 12 months, did you ever seriously think about committing suicide?**

☐ Yes
☐ No

8. **During the past 12 months, how many times did you actually attempt suicide?**

☐	☐	☐	☐	☐
0 times	1 time	2 times	3 times	4 or more times

The next 2 questions are about your participation in church or religious activities. Again, there are no right or wrong answers. Please check the box you feel that you mostly agree with.

9. **How often do you attend church or other religious meetings?**

☐ Never
☐ Once a year or less
☐ A few times a year
☐ A few times a month
☐ Once a week
☐ More than once a week

10. **How often do you spend time in private religious activities, such as prayer, meditation or Bible study?**

☐ Rarely or Never
☐ A few times a month
☐ Once a week
☐ Two or more times a week
☐ Daily
☐ More than once a day

The following section contains 3 statements about religious belief or experience. Please mark the extent to which each statement is true or not true for you.

11. In my life, I experience the presence of the Divine (i.e., God).

- ☐ Definitely not true
- ☐ Tends not to be true
- ☐ Unsure
- ☐ Tends to be true
- ☐ Definitely true of me

12. My religious beliefs are what really lie behind my whole approach to life.

- ☐ Definitely not true
- ☐ Tends not to be true
- ☐ Unsure
- ☐ Tends to be true
- ☐ Definitely true of me

13. I try hard to carry my religion over into all other dealings in life.

- ☐ Definitely not true
- ☐ Tends not to be true
- ☐ Unsure
- ☐ Tends to be true
- ☐ Definitely true of me

The next 12 questions are about your general religious opinions. Please mark the answer that best describes the extent to which you agree or disagree with the following statements.

14. God has given humanity, a complete unfailing guide to happiness and salvation, which must be totally followed.

- ☐ Very strongly disagree
- ☐ Strongly disagree
- ☐ Moderately disagree
- ☐ Slightly disagree
- ☐ Neutral
- ☐ Slightly agree
- ☐ Moderately agree
- ☐ Strongly agree

☐ Very strongly agree

15. No single book of religious teachings contains all the intrinsic, fundamental truths about life.

☐ Very strongly disagree
☐ Strongly disagree
☐ Moderately disagree
☐ Slightly disagree
☐ Neutral
☐ Slightly agree
☐ Moderately agree
☐ Strongly agree
☐ Very strongly agree

16. The basic cause of evil in this world is Satan, who is still constantly and ferociously fighting against God.

☐ Very strongly disagree
☐ Strongly disagree
☐ Moderately disagree
☐ Slightly disagree
☐ Neutral
☐ Slightly agree
☐ Moderately agree
☐ Strongly agree
☐ Very strongly agree

17. It is more important to be a good person than to believe in God and the right religion.

☐ Very strongly disagree
☐ Strongly disagree
☐ Moderately disagree
☐ Slightly disagree
☐ Neutral
☐ Slightly agree
☐ Moderately agree
☐ Strongly agree
☐ Very strongly agree

18. There is a particular set of religious teachings in this world that are so true, you can't go any "deeper" because they are the basic, bedrock message God has given humanity.

- ☐ Very strongly disagree
- ☐ Strongly disagree
- ☐ Moderately disagree
- ☐ Slightly disagree
- ☐ Neutral
- ☐ Slightly agree
- ☐ Moderately agree
- ☐ Strongly agree
- ☐ Very strongly agree

19. When you get right down to it, there are basically two kinds of people in the world: the righteous who will be rewarded by God; and the rest who will not.

- ☐ Very strongly disagree
- ☐ Strongly disagree
- ☐ Moderately disagree
- ☐ Slightly disagree
- ☐ Neutral
- ☐ Slightly agree
- ☐ Moderately agree
- ☐ Strongly agree
- ☐ Very strongly agree

20. Scriptures may contain general truths, but they should NOT be considered completely, literally true from beginning to end.

- ☐ Very strongly disagree
- ☐ Strongly disagree
- ☐ Moderately disagree
- ☐ Slightly disagree
- ☐ Neutral
- ☐ Slightly agree
- ☐ Moderately agree
- ☐ Strongly agree
- ☐ Very strongly agree

21. To lead the best, most meaningful life, one must belong to the one, fundamentally true religion.

- ☐ Very strongly disagree
- ☐ Strongly disagree

☐ Moderately disagree
☐ Slightly disagree
☐ Neutral
☐ Slightly agree
☐ Moderately agree
☐ Strongly agree
☐ Very strongly agree

22. "Satan" is just the name people give to their own bad impulses. There is really no such thing as a diabolical "Prince of Darkness" who tempts us.

☐ Very strongly disagree
☐ Strongly disagree
☐ Moderately disagree
☐ Slightly disagree
☐ Neutral
☐ Slightly agree
☐ Moderately agree
☐ Strongly agree
☐ Very strongly agree

23. Whenever science and sacred scripture conflict, science is probably right.

☐ Very strongly disagree
☐ Strongly disagree
☐ Moderately disagree
☐ Slightly disagree
☐ Neutral
☐ Slightly agree
☐ Moderately agree
☐ Strongly agree
☐ Very strongly agree

24. The fundamentals of God's religion should never be tampered with, or compromised with others' beliefs.

☐ Very strongly disagree
☐ Strongly disagree
☐ Moderately disagree
☐ Slightly disagree
☐ Neutral
☐ Slightly agree
☐ Moderately agree
☐ Strongly agree
☐ Very strongly agree

25. All of the religions in the world have flaws and wrong teachings. There is no perfectly true and right religion.

- ☐ Very strongly disagree
- ☐ Strongly disagree
- ☐ Moderately disagree
- ☐ Slightly disagree
- ☐ Neutral
- ☐ Slightly agree
- ☐ Moderately agree
- ☐ Strongly agree
- ☐ Very strongly agree

The next section contains questions about your relationship with your mother and father. Please check the box you feel mostly applies to you.

26. How close do you feel to your mother?

- ☐ Not at all
- ☐ Very little
- ☐ Somewhat
- ☐ Quite a bit

27. Most of the time, your mother is warm and loving toward you.

- ☐ Strongly disagree
- ☐ Disagree
- ☐ Agree
- ☐ Strongly agree

28. You are satisfied with the way your mother and you communicate with each other.

- ☐ Strongly disagree
- ☐ Disagree
- ☐ Agree
- ☐ Strongly agree

29. Overall, you are satisfied with your relationship with your mother.

- ☐ Strongly disagree
- ☐ Disagree
- ☐ Agree
- ☐ Strongly agree

30. How close do you feel to your father?

- ☐ Not at all
- ☐ Very little
- ☐ Somewhat
- ☐ Quite a bit

31. Most of the time, your father is warm and loving toward you.

- ☐ Strongly disagree
- ☐ Disagree
- ☐ Agree
- ☐ Strongly agree

32. You are satisfied with the way your father and you communicate with each other

- ☐ Strongly disagree
- ☐ Disagree
- ☐ Agree
- ☐ Strongly agree

33. Overall, you are satisfied with your relationship with your father

- ☐ Strongly disagree
- ☐ Disagree
- ☐ Agree
- ☐ Strongly agree

These next questions are about general information. Please mark the answer that best describes information about you.

34. What is your gender (check ✓ one)? ☐ Female ☐ Male

35. What is your age: _____ Years

36. What grade are you in?

- ☐ 12th grade in high school or under
- ☐ Freshman in college
- ☐ Sophomore in college
- ☐ Junior in college
- ☐ Senior in college
- ☐ Graduate student or above

37. What is the highest grade or year in school your *PARENTS* completed? (check ✓ one):

☐ Never attended school or only attended Kindergarten
☐ Grades 1 through 8 (Elementary)
☐ Grades 9 through 11 (Some High School)
☐ Grade 12 or GED (High School Graduate)
☐ Some college
☐ Associate degree (academic program, technical program, or vocational program)
☐ Bachelor's degree
☐ Some graduate school
☐ Master's degree
☐ Doctoral degree (PhD), or Professional school degree (MD, DDS, JD)

38. How do you describe yourself? (check ✓ all that apply):

☐ American Indian or Alaska Native
☐ Asian
☐ Black or African American
☐ Hispanic or Latino
☐ Native Hawaiian or Other Pacific Islander
☐ White or Caucasian

☐ Other: (please specify)_____

39. How many parents (guardians) do you live with?

☐ One
☐ Two
☐ Do not live with parent/guardian/supervision adult

40. Was anyone with you while you were completing this survey?

☐ I was by myself.
☐ A parent was with me.
☐ A friend was with me.

This is the end of the survey. Thank you very much for your time in completing this survey.

APPENDIX B

Parent Survey

To ensure you and your child's privacy, this first section will ask a few general questions that are specific to you. Please answer each question carefully in the space provided.

****Each question is related to your child that is participating in this study.****

Thank you for taking time to complete this questionnaire.

1. **What are the last 2 letters of your child's first name they are called by?**

   _____

2. **What is the first letter of your child's mother's first name?**

   _____

3. **What is the first letter of your child's father's first name?**

   _____

4. **What is the last letter in your child's last name?**

   _____

5. **What is the day (between 1 - 31) of the month your child was born?**

   _____

6. **What is the second letter in your child's last name?**

   _____

In this section you will answer 5 questions about your beliefs, opinions and/or thoughts about religious/spiritual preferences. There are no right or wrong answers. Please understand that this survey is completely voluntary and you have the option of terminating this questionnaire at any time. Your responses will remain confidential and at no time will your name or your responses be shared.

The next 2 questions are about your participation in church or religious activities. Again, there are no right or wrong answers. Please mark the box you feel that you mostly agree with.

1. **How often do you attend church or other religious meetings?**

   ☐ Never
   ☐ Once a year or less
   ☐ A few times a year
   ☐ A few times a month
   ☐ Once a week
   ☐ More than once a week

2. **How often do you spend time in private religious activities, such as prayer, meditation or Bible study?**

   ☐ Rarely or Never
   ☐ A few times a month
   ☐ Once a week
   ☐ Two or more times a week
   ☐ Daily
   ☐ More than once a day

The following section contains 3 statements about religious belief or experience. Please mark the extent to which each statement is true or not true for you.

3. **In my life, I experience the presence of the Divine (i.e., God).**

   ☐ Definitely not true
   ☐ Tends not to be true
   ☐ Unsure
   ☐ Tends to be true
   ☐ Definitely true of me

4. **My religious beliefs are what really lie behind my whole approach to life.**

- ☐ Definitely not true
- ☐ Tends not to be true
- ☐ Unsure
- ☐ Tends to be true
- ☐ Definitely true of me

5. **I try hard to carry my religion over into all other dealings in life.**

- ☐ Definitely not true
- ☐ Tends not to be true
- ☐ Unsure
- ☐ Tends to be true
- ☐ Definitely true of me

The next 12 questions are about your general religious opinions. Please mark the answer that best describes the extent to which you agree or disagree with the following statements.

6. **God has given humanity, a complete unfailing guide to happiness and salvation, which must be totally followed.**

- ☐ Very strongly disagree
- ☐ Strongly disagree
- ☐ Moderately disagree
- ☐ Slightly disagree
- ☐ Neutral
- ☐ Slightly agree
- ☐ Moderately agree
- ☐ Strongly agree
- ☐ Very strongly agree

7. **No single book of religious teachings contains all the intrinsic, fundamental truths about life.**

- ☐ Very strongly disagree
- ☐ Strongly disagree
- ☐ Moderately disagree
- ☐ Slightly disagree
- ☐ Neutral
- ☐ Slightly agree
- ☐ Moderately agree
- ☐ Strongly agree
- ☐ Very strongly agree

8. The basic cause of evil in this world is Satan, who is still constantly and ferociously fighting against God.

- ☐ Very strongly disagree
- ☐ Strongly disagree
- ☐ Moderately disagree
- ☐ Slightly disagree
- ☐ Neutral
- ☐ Slightly agree
- ☐ Moderately agree
- ☐ Strongly agree
- ☐ Very strongly agree

9. It is more important to be a good person than to believe in God and the right religion.

- ☐ Very strongly disagree
- ☐ Strongly disagree
- ☐ Moderately disagree
- ☐ Slightly disagree
- ☐ Neutral
- ☐ Slightly agree
- ☐ Moderately agree
- ☐ Strongly agree
- ☐ Very strongly agree

10. There is a particular set of religious teachings in this world that are so true, you can't go any "deeper" because they are the basic, bedrock message God has given humanity.

- ☐ Very strongly disagree
- ☐ Strongly disagree
- ☐ Moderately disagree
- ☐ Slightly disagree
- ☐ Neutral
- ☐ Slightly agree
- ☐ Moderately agree
- ☐ Strongly agree
- ☐ Very strongly agree

11. When you get right down to it, there are basically two kinds of people in the world: the righteous who will be rewarded by God; and the rest who will not.

- ☐ Very strongly disagree
- ☐ Strongly disagree
- ☐ Moderately disagree
- ☐ Slightly disagree
- ☐ Neutral
- ☐ Slightly agree
- ☐ Moderately agree
- ☐ Strongly agree
- ☐ Very strongly agree

12. Scriptures may contain general truths, but they should NOT be considered completely, literally true from beginning to end.

- ☐ Very strongly disagree
- ☐ Strongly disagree
- ☐ Moderately disagree
- ☐ Slightly disagree
- ☐ Neutral
- ☐ Slightly agree
- ☐ Moderately agree
- ☐ Strongly agree
- ☐ Very strongly agree

13. To lead the best, most meaningful life, one must belong to the one, fundamentally true religion.

- ☐ Very strongly disagree
- ☐ Strongly disagree
- ☐ Moderately disagree
- ☐ Slightly disagree
- ☐ Neutral
- ☐ Slightly agree
- ☐ Moderately agree
- ☐ Strongly agree
- ☐ Very strongly agree

14. "Satan" is just the name people give to their own bad impulses. There is really no such thing as a diabolical "Prince of Darkness" who tempts us.

- ☐ Very strongly disagree
- ☐ Strongly disagree
- ☐ Moderately disagree
- ☐ Slightly disagree
- ☐ Neutral
- ☐ Slightly agree
- ☐ Moderately agree
- ☐ Strongly agree
- ☐ Very strongly agree

15. Whenever science and sacred scripture conflict, science is probably right.

- ☐ Very strongly disagree
- ☐ Strongly disagree
- ☐ Moderately disagree
- ☐ Slightly disagree
- ☐ Neutral
- ☐ Slightly agree
- ☐ Moderately agree
- ☐ Strongly agree
- ☐ Very strongly agree

16. The fundamentals of God's religion should never be tampered with, or compromised with others' beliefs.

- ☐ Very strongly disagree
- ☐ Strongly disagree
- ☐ Moderately disagree
- ☐ Slightly disagree
- ☐ Neutral
- ☐ Slightly agree
- ☐ Moderately agree
- ☐ Strongly agree
- ☐ Very strongly agree

17. All of the religions in the world have flaws and wrong teachings. There is no perfectly true and right religion.

- ☐ Very strongly disagree
- ☐ Strongly disagree
- ☐ Moderately disagree
- ☐ Slightly disagree
- ☐ Neutral
- ☐ Slightly agree
- ☐ Moderately agree
- ☐ Strongly agree
- ☐ Very strongly agree

These next questions are about general information. Please mark the answer that best describes information about you.

1. What is your sex (check ✓ one)? ☐ Female ☐ Male

2. What is your age: _____ Years

3. What is the highest grade or year in school you completed? (check ✓ one):

- ☐ Never attended school or only attended Kindergarten
- ☐ Grades 1 through 8 (Elementary)
- ☐ Grades 9 through 11 (Some High School)
- ☐ Grade 12 or GED (High School Graduate)
- ☐ Some college
- ☐ Associate degree (academic program, technical program, or vocational program)
- ☐ Bachelor's degree
- ☐ Some graduate school
- ☐ Master's degree
- ☐ Doctoral degree (PhD), or Professional school degree (MD, DDS, JD)

4. How do you describe yourself? (check ✓ all that apply):

- ☐ American Indian or Alaska Native
- ☐ Asian
- ☐ Black or African American
- ☐ Hispanic or Latino
- ☐ Native Hawaiian or Other Pacific Islander
- ☐ White or Caucasian
- ☐ Other: (please specify)_____

This is the end of the survey. Thank you very much for your time in completing this survey.