

EXAMINATION OF THE RELATIONSHIP BETWEEN RELIGIOSITY AND
PSYCHOLOGICAL WELL-BEING: A MULTIPLE MEDIATION ANALYSIS

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ABSTRACT

Religious beliefs and behaviors are prevalent in cultures throughout the world. The majority of empirical research on religion and well-being shows a positive relationship between higher levels of religiousness and better mental health (Ellison & Levin, 1998; Hackney & Sanders, 2003). Religion is believed to facilitate the development of assets that produce positive mental health outcomes. Specifically, authors have suggested that religion cultivates development of social support networks, sense of meaning in life, healthy lifestyle choices, positive coping strategies, and general positive affect (Ellison, Boardman, Williams, & Jackson, 2001; Ellison & Levin, 1998; George, Larson, Koenig, & McCullough, 2000; Seybold & Hill, 2001). The purpose of the present study was to examine the roles of religious belief, social support, meaning in life, health behaviors, religious coping strategies, and positive affect in the prediction of well-being in college students. Participants were 153 undergraduate students at a public university in the southeastern United States. Participants included 121 females and 32 males ranging in age from 18-24. It was hypothesized that religiosity (X) would predict depression (Y), anxiety (Y), and life satisfaction (Y) as mediated through social support (M), meaning in life (M), health behaviors (M), positive religious coping (M), and positive affect (M). Three multiple mediation analyses were conducted using the PROCESS procedure for SPSS (Preacher & Hayes, 2008). Contrary to predictions, the overall indirect effects of the above-mentioned mediators in the analysis of well-being outcomes (Y) regressed on religiosity (X) were not significant.

Furthermore, contrary to previous literature, religiosity showed a weak positive relationship with life satisfaction and no significant relationship with either depression or anxiety. Results and implications of findings are discussed.

DEDICATION

This, and all my work, is dedicated to YHWH.

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I am deeply grateful for the prayers of the faithful who continually prayed on my behalf as I pursued my doctoral degree and this dissertation project. Specifically, I would like to thank my husband Bobby Rosema, my mother Debra Thomas and the members of her church at Murrysville Bible Chapel in Pennsylvania, my friend and Bible study partner Laura Lambert Karl, my long-time friend Bethany Keitzer, and the members of my church family at Clough Pike Baptist Church in Ohio.

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INTRODUCTION

Religious belief appears to be as old as human civilization. Evidence of religion is seen in all cultures at all periods of time in history (Bulbulia, 2004). The age of Enlightenment spawned the idea that modernization will inevitably lead to a decline of religion, but patterns throughout history have not revealed this prediction to be correct (Berger, 1999). Religious beliefs continue to persist in the mass public despite scientific advancements and aggressive persecution of religious believers (e.g., Bulbulia, 2004; Knippers, 1992). It has recently been estimated that 77% of Americans identify as Christian, 5% identify as adhering to a non-Christian religion, and 18% percent reported no religious identity (Newport, F., 2012). Eighty-seven percent of Americans answered in the affirmative when asked "Do you believe in God?" and 90% answered affirmatively when asked "Do you believe in God or a universal spirit?" (Gallup, C.N.N., U.S.A., 2013). Worldwide, 59% of people think of themselves as religious, 23% think of themselves as not religious, and 13% think of themselves as convinced atheists (WIN-Gallup International, 2012).

With the majority of the world's people adhering to some form of religious belief and practice, researchers have sought to determine the impact of such on mental health and well-being. Ellis (1980, 1987) suggested that religiosity is antithetical to high-level emotional functioning, equivalent to irrational thinking, and correlated with emotional disturbance. Indeed, there have been study findings that are congruent with Ellis' assertions. McConnell et al. (2006) found struggles that relate specifically to religious behaviors, such as interpersonal conflicts with other church members, questions and doubts regarding spiritual beliefs or issues, and tension in

one's individual relationship with God, are associated with higher levels of anxiety, phobia, depression, paranoid ideation, obsessive compulsive behaviors, and somatization. Similarly, Ellison and Lee (2010) reported that negative church interactions and religious doubts were positively related with emotional distress. However, it seems that such struggles occur at a low rate within the general population (Ellison & Lee, 2010; George, Ellison, & Larson, 2002).

Contrary to propositions that religious belief and behavior are forms of unhealthy delusion, systematic reviews indicate the vast majority of empirical research on religion and well-being shows a positive relationship between higher levels of religiousness and better mental health (Ellison & Levin, 1998; Hackney & Sanders, 2003). Koenig and Larson (2001) reviewed studies that investigated associations between religion and mental health. Out of 100 studies reviewed, 79 found religious beliefs and practices were positively associated with life satisfaction, happiness, positive affect, and higher morale. Of 101 studies examining depression, most found lower depression among those with higher religiosity. In two of these studies, depression was resolved sooner among the more religious, and in 5 out of 8 clinical trials, depression in patients treated with religious interventions was resolved more quickly than in patients treated with a secular intervention or no intervention. Using a meta-analytic technique, when combining all effect sizes while overlooking variations in the definition and measurement of religiosity and mental health/well-being, Hackney and Sanders (2003) found an overall positive relationship between religiosity and mental health. A few negative relationships were found as well, but were in the minority.

Although a positive link between religion and psychological well-being has been demonstrated, an explanation of specific mechanisms that might account for the observed effects is lacking. Several authors have postulated why this relationship exists. Suggested mechanisms

include the provision of social support, establishment of meaning in life and sense of coherence, engagement in healthy lifestyle choices, promotion of positive religious coping styles, and facilitation of positive affect, all of which are believed to be endorsed by and facilitated through religion (Ellison, Boardman, Williams, & Jackson, 2001; Ellison & Levin, 1998; George, Larson, Koenig, & McCullough, 2000; Seybold & Hill, 2001). Few studies have investigated these factors empirically, and no study has examined them in a single model.

The purpose of this study is to examine the roles of religious belief, social support, meaning in life, prescribed health behaviors, religious coping strategies, and positive affect in the prediction of well-being. Following an overview of religiosity and well-being, each of the five suggested mechanisms and their relationship with religiosity will be discussed.

Religiosity and Well-Being

Some researchers have hypothesized that religious belief and dedication are detrimental to an individual's emotional stability, whereas others have hypothesized that religion plays a positive role. Religiosity, or religiousness, is the level of an individual's commitment to a particular faith or set of beliefs. Attitudes toward religion and religious beliefs, as well as behavioral indicators, such as frequency of attendance at religious services, participation in church activities, ritual and personal prayers, and reading of religious texts are aspects of religiosity that have been associated with mental health outcomes. Religious orientations, or underlying motivations for religious behavior, have also been associated with well-being (Hackney & Sanders, 2003). According to Allport and Ross (1967), an Intrinsic religious orientation reflects the extent to which an individual internalizes a set of beliefs, whereas Extrinsic religious orientation reflects the use of religion for personal or social gain.

To examine outcomes across various aspects of religiosity, Smith, McCullough, and Poll

(2003) examined effect sizes from 147 studies evaluating the relationship between religiosity and depression. Of these, 35% used multidimensional measures of religiosity, 20% used measures of religious behaviors, 12% used measures of religious attitudes and beliefs, 15% used measures of religious orientation, 8% used measures of religious coping, 7% used measures of religious well-being (life satisfaction in relation to religious beliefs; feeling of connection with God), and 3% used measures of God concept (positive or negative image of God). All studies measured depression by assessing symptoms of depressive disorder (American Psychiatric Association, 2000). Average effect size across studies was $-.094$, indicating a negative, although somewhat weak, correlation between depression and religiosity. More specifically, 140 of the studies reviewed had nonzero effect sizes. Of these, effect sizes ranged from $-.54$ to $.24$, with 113 negative and 27 positive effect sizes. Studies that used measures of Extrinsic religious orientation or of negative religious coping tended to report positive associations between religiosity and depression, while all other measures of religiosity reported a negative relationship. The authors suggested that religiosity is a robust correlate of depressive symptoms.

Other studies show that religiosity is also a correlate of additional indicators of well-being. Mochon, Norton, and Ariely (2011) administered measures of religiosity (level and importance of religion), religious denomination, demographic information, and several indicators of well-being, including life satisfaction, hopelessness, depression, and self-esteem to a sample of Americans recruited from all 50 states through an online survey company. Measures of well-being were combined into a single composite as the dependent variable. Regression analysis controlling for demographic variables (age, gender, ethnicity, marital status, educational level, household income, and political affiliation) revealed religiosity was a significant predictor of subjective well-being. The authors examined the well-being of religious adherents as a function

of religiosity by adding a quadratic religiosity variable to the regression equation. Analyses revealed a strong and robust quadratic effect of religiosity on well-being. Specifically, participants who reported high levels of religiosity had the highest levels of subjective well-being. Participants with moderate levels of belief showed no benefit over the least religious participants in the sample. Additionally, moderate to low adherence to religion was associated with lower well-being scores. These results demonstrate a positive relationship between religiosity and multiple indicators of well-being.

In a study combining several aspects of religiosity, Rosmarin, Krumrei, and Andersson (2009) examined the relationship between religiosity and distress, including anxiety and depression, in participants with Jewish and Christian faith. The author assessed four categories of religiosity: denomination/religious group affiliation, general religiousness (self-rated importance of one's religious belief and of how religious and spiritual one is), religious practices (including frequency of prayer, attending services, reading religious literature, and changes in frequency of religious behaviors within the past five years), and positive and negative core religious beliefs (trust/mistrust in God; God's character as omniscient, omnipotent, and omnibenevolent). Correlational analyses revealed that general religiousness, religious practices, and positive core beliefs were modestly associated with lower reported levels of distress. In a regression model, all four religious variables were predictive of distress. Specifically, higher self-rated religiousness, more religious practices, and positive core beliefs were predictive of lower levels of distress, whereas negative core beliefs (i.e., God is not omniscient, omnipotent, or omnibenevolent) predicted higher levels of distress. The above studies highlight the importance of assessing various aspects of religion in the investigation of the relationship between religiosity and well-being.

Perhaps the most extensive effort to conceptualize and assess religiosity is Allport's development of Intrinsic and Extrinsic religious orientation, also referred to as religious motivation (Allport & Ross, 1967). As noted above, Intrinsic orientation characterizes individuals' internalization of the beliefs and their attempt to live their faith, and Extrinsic orientation characterizes holding a belief lightly and engaging in religious behaviors for social rewards and other personal benefits. A third orientation called Quest, proposed by Batson (1976), is characterized by seeking answers to questions about the structure of life without necessarily embracing any formal set of beliefs.

In a sample combining undergraduate students attending a religious institution and former missionaries enrolled in a religion class, Bergin, Masters, and Richards (1987) looked at correlations between religious orientation (Intrinsic and Extrinsic) and well-being, including anxiety, depression, self-control, and irrational beliefs. Participants with high scores on the measure of Intrinsic motivation had lower anxiety, higher tolerance for others, and better self-control than those with high scores on Extrinsic motivation. Extrinsic religiosity was positively related with one aspect of irrational belief, specifically the belief that human unhappiness is caused by something external and that people have little or no ability to control their sorrows and disturbances. Intrinsic religiosity was negatively correlated with a different aspect of irrational belief, namely the idea that one's history is an all-important determiner of one's present behavior, and that because something once strongly affected one's life it should indefinitely have similar effects. The authors concluded that Intrinsic religious motivation is related to positive attributes, such as more rational thinking and even temperament, but the opposite is true of Extrinsic motivation.

The pattern of a differential relationship between categories of religious orientation and mental health has been corroborated by several other studies. Ventis (1995) reviewed findings from 61 studies of religious orientation and mental health. Mental health was defined as absence of mental illness, appropriate social behavior, freedom from worry and guilt, personal competence and control, self-acceptance and self-actualization, unification and organization of personality, and open-mindedness and flexibility. Religious orientation was categorized as means (Extrinsic), end (Intrinsic), and Quest. It was reported that Extrinsic orientation was negatively related to all indicators of mental health with the exception of self-acceptance and self-actualization, and with unification and organization of personality. Intrinsic orientation was positively associated with mental health indicators, with the exception of self-acceptance and self-actualization, and with open-mindedness and flexibility, which showed no relationship. Quest orientation showed a mixed pattern of results. It was positively related to personal competence and control, and with self-acceptance and self-esteem, positively or neutrally related to open-mindedness and flexibility, and negatively related to absence of illness and freedom from worry and guilt. Regarding the relationships between Quest and absence of illness and freedom from worry and guilt, minimal data were available and these findings are considered ambiguous. The author concluded that particular religious orientations have differing implications for mental health. In general, Intrinsic religiosity has been associated with positive adjustment, Extrinsic religiosity has been associated with poorer outcomes, and research on Quest's relationship with well-being has produced mixed results.

In order to develop a comprehensive understanding of differential relationships between aspects of religiosity and mental health, Hackney and Sanders (2003) conducted a meta-analysis using 35 studies and 264 correlations. They found that the relationship between religiousness and

mental health varied as a function of the operationalization of religiousness and mental health. They identified three categories of religiousness: ideological (emphasis on beliefs above religious activity; includes attitudes and belief salience), institutional (social and behavioral aspects of religion; includes Extrinsic motivation, attendance of religious services, participation in church activities, and ritual prayer), and personal devotion (characterized by aspects of internalized devotion; includes Intrinsic motivation, emotional attachment to God, and devotional intensity). Institutional religion was associated with higher levels of psychological distress, personal devotion was associated with lower levels of psychological distress, and ideological religion was not associated with psychological distress. However, all three types of religiousness were positively associated with life satisfaction. The authors suggested that methods of measurement that assess aspects of personal devotion produce greater correlations with well-being than do other aspects of religiosity.

The above review suggests that religiosity is generally associated with higher levels of mental health indicators. Studies that report a positive relationship between religiosity and well-being far outweigh those suggesting a negative relationship or no relationship (Koenig, 2001). However, the way religiosity and psychological adjustment are defined and measured appears to affect findings (Hackney & Sanders, 2003). Indicators of religiosity involving commitment and participation in one's faith are associated with higher levels of well-being, as determined by less depression, less anxiety, more happiness, and more life-satisfaction.

Proposed Mechanisms

Much of the research regarding religion and well-being has focused on determining the type of relationship that exists between these two constructs. Though it is now recognized that the relationship is overwhelmingly positive, only a small amount of attention has been paid to

establishing an explanation of the reasons for this relationship. Several researchers have proposed a number of potential contributing factors based on constructs that are known to be associated with both well-being and religious involvement. Although there is some variation in the lists of possible explanations of religious effects on health, there are five common components suggested by researchers: social support and resources, meaning in life/sense of coherence, prescribed health behaviors/lifestyle, religious coping strategies, and positive affect (Ellison & Levin, 1998; George, Larson, Koenig, & McCullough, 2000; George, Ellison, & Larson, 2002; Seybold & Hill, 2001).

Social Support.

Religious involvement provides access and opportunities to create social networks with people who share similar values, morals, interests, and activities. A large social support network could provide emotional (e.g., companionship, support prayer) and tangible (e.g., financial aid, charitable services) assistance that may promote better health among religious persons. In Koenig's (2001) review of studies regarding religion and mental health, 19 out of 20 studies found positive associations between indicators of religious involvement and social support. In this review, Koenig reported that religious involvement appears to increase both the amount and quality of support. The role of social support is the most commonly examined contributing factor to the relationship between religiosity and well-being, however findings to date have shown mixed results.

Using data from the 1995 Detroit Area Study, Ellison, Boardman, Williams, and Jackson (2001) examined links between religion, stressors, resources, and mental health in a probability sample of 1,139 residents of Detroit and the surrounding suburban counties. The authors included measures of psychological distress, psychological well-being, several measures of stress

(including health problems and impairment, work problems, financial problems, and family problems), psychological resources (including self-esteem and personal mastery), social resources (including family contact, positive social support, negative social interaction, and congregational support), and sociodemographic information. Measures of religious involvement included frequency of church attendance, frequency of prayer, belief in eternal life, and denominational affiliation. Both church attendance and belief in eternal life were positively related to well-being. Frequency of attendance at religious services was negatively related to distress. The authors found little support that the link between religion and mental health is accounted for by social or psychological resources. In this study, controlling for measures of social resources did not alter the effects of church attendance on distress or well-being.

Additionally, controlling for coreligionist friendships and congregational support did not account for the observed effects of church attendance. The authors interpret these findings to mean that the links between religious involvement and mental health result from something other than social support. Likewise, controlling for self-esteem and personal mastery also did not reduce the effects of church attendance, prayer, or belief in eternal life on mental health outcomes. The authors offered that positive effects of religious involvement cannot be explained simply in terms of social and psychological resources.

Other studies, however, have found evidence that social support resources are important contributors in the positive effects of religious involvement. In a study investigating the mediating role of social support in the relationship between religiosity and life satisfaction, Park, Roh, and Yeo (2012) assessed religiosity/spirituality (daily spiritual experiences, private religious practices, values and beliefs, forgiveness, religious and spiritual coping skills, and religious support), social support network, and satisfaction with life through face-to-face

interviews with a sample of elderly Korean immigrants at two Korean senior centers in the United States. All six of the religiosity subscales were positively associated with social support and with life satisfaction. There was also a positive association between social support and life satisfaction. Results showed that social support partially mediated the relationship between religiosity and life satisfaction. The partial mediating role of social support in this study implies that other factors may play a part in fully explaining the relationship between religiosity and life satisfaction.

A study conducted in the Republic of Ireland explored whether religious behavior adds a unique contribution to the prediction of well-being, as well as whether social support mediates the relationship between the two (Doane, 2013). Measures of satisfaction with life, perceived general and religious social support, personality traits, and general physical health were administered to a sample of undergraduate students living in Ireland. Religious behavior was measured by students' frequency of attendance at religious services. There was a positive association between attendance at religious services and life satisfaction. Service attendance significantly predicted life satisfaction after controlling for common predictors, including sex, age, relationship status, perceived general social support, physical health, and personality traits. This finding indicates that religious service attendance makes a unique contribution to satisfaction with life. Furthermore, results showed that the association between religious service attendance and life satisfaction was fully mediated by religious social support.

A recent study of religious attendance and depression tested the mediational role of social support (Ai, Huang, Bjorck, & Appel, 2013). Data were drawn from the National Latino and Asian American Study database (NLAAS). The NLAAS is part of the Collaborative Psychiatric Studies (CPES) that aimed to determine the prevalence of mental disorders and patterns of

service utilization in Latino and Asian American adults living in the United States. The authors analyzed data from measures of a diagnosis of depression within the past 12 months, religious affiliation (collapsed into Christian or non-Christian), religious involvement (attendance), religious coping (seeking comfort through religious means), level of acculturation, frequency of experiences with discrimination, and social support. Higher religious attendance was predictive of a lower likelihood of having a diagnosis of depression. Social support was also predictive of a lower likelihood of depression and furthermore mediated the relationship between religious service attendance and less depression. Religious coping had no effect on depression in this study.

In a study that examined the role of social support in the relationship between religious involvement and both physical and emotional health, Holt et al. (2014) examined religious involvement, social support, physical and emotional functioning, and depressive symptoms in a national sample of African American adults. Two aspects of social support, sense of belonging and tangible support, mediated the relationship between religious behavior and emotional functioning as well as between religious behavior and symptoms of depression. Additionally, these aspects of social support also mediated the relationship between religious beliefs and depressive symptoms. Overall, the examination of social support in relation to religiosity and well-being has shown promising but mixed results. More research is needed to determine the role of social support in conjunction with other possible contributing variables.

Meaning in Life.

Meaning, or purpose, in life refers to a perceived sense that there is a reason for personal existence. It is the ontological significance of life, which provides a coherent understanding of existence and direction for one's goals and behavior (Crumbaugh & Maholick, 1964). Religious

belief provides a view of the world that gives experiences meaning, providing a sense of purpose and direction in life. Belief structures can also provide believers with peace of mind. Religion offers a comprehensive framework for the ordering and interpretation of events. Religion is beneficial to well-being by providing a sense of coherence and meaning so that people understand their role in the universe and the purpose of life, and can develop the courage to endure suffering (George, Larson, Koenig, & McCullough, 2000). Several studies have examined the relationship between meaning in life and religion, but only a few have examined meaning, purpose, or sense of coherence in the investigation of the relationship between religion and well-being.

In a review of studies regarding religion and mental health, 15 out of 16 studies reported a significant positive association of religion with meaning and purpose in life. The other study in this review found no association (Koenig, 2001). A more recent study examined specifically how belief in God is associated with a sense of purpose (Cranney, 2013). The author assessed belief and purpose based on two items from the General Social Survey administered to a sample of randomly drawn participants in the United States in 1998 and 2008. Responses to the Likert-type item “In my opinion, life does not serve any purpose” was used to assess sense of meaning in life. Belief in God was assessed by participants’ response to the following mutually exclusive options about God: “I don’t believe in God”; “I don’t know whether there is a God and I don’t believe there is any way to find out”; “I don’t believe in a personal God, but I do believe in a higher power of some kind”; “I find myself believing in God some of the time, but not at others”; “While I have doubts, I feel that I do believe in God”; “I know God really exists and I have no doubts about it.” There was a positive association between belief in God and sense of purpose for participants who reported they know God exists and have no doubts about it. The positive

relationship between religiosity and sense of purpose in life suggests that religious faith is an important component of well-being.

Steger and Frazier (2005) examined meaning in life as a mediator between religion and well-being on a general level, as well as on a daily level, in two separate studies. In the first study, frequency of prayer, attendance at religious services, level of self-reported religiousness and spirituality, meaning in life, satisfaction with life, self-esteem, and optimism were assessed in a sample of students taking an introductory psychology course. Meaning in life mediated the relation between religiousness and well-being when assessed by life satisfaction and self-esteem. Meaning in life partially mediated the relation between religiousness and optimism. These findings suggest that to the extent that people involved with religion have positive expectations for the future, those expectations cannot be explained completely by religion's contribution to their sense of meaning. In a second study, another sample of introductory psychology students completed a daily diary over a two-week period. They completed daily ratings of meaning in life and life satisfaction in addition to responses to items about daily religiousness ("I attended a religious service because I wanted to"; "I engaged in spiritual reading or meditation"), daily positive and negative affect (items modified from a long-term affect scale), a daily meaning item ("How meaningful does your life feel today?"), and the item "How was today?" (rating from *terrible* to *excellent*). Consistent with findings from the first study, meaning in life mediated the relation between daily religious activity and well-being. These findings suggest that the role of meaning in well-being takes place even during brief periods of time, and that people's experiences of meaning may occur quickly after engaging in a religious activity.

Vilchinsky and Kravetz (2005) examined well-being and psychological distress, religious ritual behaviors, religious beliefs, meaning in life, social support, fear of death, and Jewish

religious identity in a sample of Jewish Israeli students in a variety of institutes of higher learning. Participants were categorized into three groups based on Jewish religious identity: secular, religious, and traditional. For participants who identified as religious, there was a positive correlation between well-being and religious belief and behavior, and a negative correlation between psychological distress and religious belief and behavior. In both the secular and the religious subsample, meaning in life mediated the relationship between religious belief and psychological well-being and distress. This pattern was not found for the traditional subsample. Furthermore, social support was not found to mediate relationships between religious belief or behavior and psychological distress or well-being in any of the three subsamples. The authors suggested that although the relationship between religiousness and social support is prevalent in the literature, it may be limited to Christians. Additionally, religious belief, but not religious behavior, was positively related to meaning in life and well-being and negatively related to psychological distress in this study.

A recent study examined hope and meaning in life as potential mediators between facets of spirituality and psychological well-being (Wnuk & Marcinkowski, 2014). The authors administered measures of daily spiritual experiences, purpose in life, hope, life satisfaction, and positive and negative affect to a sample of physical education and social psychology students at a university in Poland. More spiritual experiences were positively associated with higher ratings of life satisfaction and with higher levels of positive affect. Meaning in life and hope were both significant mediators of the relationship between spiritual experiences and the two indicators of well-being (life satisfaction and positive affect).

Sillick & Cathcart (2014) administered measures of Intrinsic and Extrinsic religious orientation, purpose in life, and happiness to a sample of students taking a psychology course.

Contrary to previous literature, Intrinsic religiosity in this study was negatively correlated with purpose in life and was not a significant predictor of happiness, and Extrinsic-social religiosity was positively correlated with purpose in life and happiness. For male participants only, purpose in life was a significant mediator in the relationship between Extrinsic-social religiosity and happiness.

Though few in number, the studies described suggest meaning and purpose in life may be an important factor in the relationship between religious behavior and psychological well-being. However, the results are mixed. Further examination is needed to clarify the role of meaning and purpose in religiosity and well-being.

Healthy Lifestyle.

Religious participation is presumed to promote good health practices, which in turn have positive effects on physical and mental health. The religious beliefs act as an agent of social control that provide guidance on and structure for behaviors that are considered to be acceptable. Many religious faiths teach members to respect and care for their bodies. They teach, for example, that the body is the temple of God, or that life and health are gifts that are deserving of gratitude and responsible stewardship. Religious faiths may tend to discourage behaviors that increase the risk of stress or health problems, and instead may encourage positive, low-stress lifestyles.

In a review of studies regarding religion and mental health, Koenig (2001) reported differences in behaviors between more religious and less religious people regarding substance use, extra-marital sexual activity, and delinquency and crime. Seventy-six of 86 studies reported significantly less alcohol use/abuse among religious subjects, 48 of 52 studies found less drug use among the more religious, and 24 out of 25 studies found less smoking among the more

religious. Thirty-seven of 38 studies found that more religious participants had lower rates or more negative attitudes toward non-marital sexual behavior than non-religious subjects. Twenty-eight of 36 studies found lower rates of delinquent behavior among the more religious.

Although several studies have looked at individual healthy behaviors of religious persons, only one study has examined clustering of health-related behaviors as a lifestyle (Hill, Ellison, Burdette, & Musick, 2007). Using a statewide probability sample of community-dwelling adults in Texas, the authors assessed healthy lifestyle and public and private religious involvement. Health-related behaviors included seat belt use, frequency of carousing (going to bars and clubs to drink, dance, and socialize), taking vitamins and nutritional supplements, eating out, snacking throughout the day, getting physical and dental exams, time spent walking, engaging in moderate and strenuous exercise, and drinking and smoking behavior. Religious involvement was assessed by frequency of attendance at religious services, frequency of participation in religious activities other than services, frequency of prayer, frequency of reading the Bible by oneself or with a small group, frequency of reading other religious materials (books about the Bible, religious magazines, or newsletters), and frequency of religious media use (watching or listening to religious programs on TV, radio, tapes, or CDs). Results showed individual health behaviors tended to cluster within respondents. In one behavior cluster, approximately 15% of respondents reported having a physical exam within the past year, regular vitamin intake, regular exercise, abstinence from or minimal alcohol intake, and abstinence from smoking. Overall, there was a positive association between religious involvement and a healthier lifestyle.

Lawler-Row and Elliott (2009) examined social support and healthy behaviors as mediators of the relationship between religious involvement and psychological well-being. The authors administered measures of religious involvement (being a member of a religious

institution, attendance at services, frequency of prayer), spiritual well-being (religious and existential well-being), psychological well-being (purpose in life and positive relations with others), satisfaction with life, physical symptoms, health behaviors, and social support in a sample of adults over the age of 55 from 13 different states. Healthy behaviors and social support partially mediated each health outcome. Among the religious variables (church membership, frequency of attendance, frequency of prayer, and religious and existential well-being), existential well-being had the strongest relationship with health outcomes. While social support and healthy behaviors partially mediated the relationship, existential well-being was found to make a clear and independent contribution, indicating that it seems to have a direct effect on health that is separate from its connection to religion, social support, and healthy behaviors. Individuals with higher levels of existential well-being had fewer physical symptoms and levels of depression and higher psychological and subjective well-being, even after accounting for the contributions of gender, age, education, healthy behaviors, and social support.

Previous research has shown that engagement in healthy behaviors and abstinence from harmful or delinquent behaviors is positively associated with religious belief and involvement. Although commonly suggested as an important variable in the relationship between religiosity and well-being, very little research has examined health-related behaviors in this context.

Religious Coping.

Coping is viewed as a process through which individuals try to understand and deal with significant personal or situational demands in their lives (Pargament et al., 1990). Religious coping appraisals can provide a source of explanation for life events. Pargament et al. (1988) proposed three styles of religious coping. Collaborative coping involves an active personal exchange with God, a deferring approach is a passive stance in which the individual waits on

God to provide answers, and a self-directing approach places emphasis on the freedom that God gives people to direct their own lives. Some forms of religious coping may be healthy and adaptive, whereas others may be negative and maladaptive. In a meta-analytic review of 147 studies that examined the association between religiousness and depressive symptoms, the association differed significantly across the type of religiousness measured and across coping styles (Smith, McCullough, & Poll, 2003). Specifically, measures of Extrinsic religious motivation and of negative religious coping showed associations in a different direction (positive correlations) than did all other measures of religiousness, which showed negative correlations. Furthermore, studies with measures of Intrinsic motivation had stronger negative correlations with depressive symptoms than did studies with measures of religious attitudes and beliefs. The authors suggested that some aspects of religiousness may be unhealthy, and that researchers should assess individuals' specific forms of religious motivation and coping styles.

Schaefer and Gorsuch (1991) examined the relationship between religious motivation, personal beliefs about God, religious coping style, and psychological adjustment. The authors administered measures of Intrinsic and Extrinsic religious orientation, personal views of God, religious problem solving (coping) style, and state and trait anxiety to a sample of undergraduate students attending church affiliated institutions. Religious motivation (Intrinsic and Extrinsic) and views of God contributed uniquely in the prediction of coping styles. Deferring and collaborative coping styles were negatively associated with anxiety, and self-directing coping style was positively associated with anxiety. Religious persons who view God as benevolent, stable, and powerful and also have an Intrinsic motivation were found to have a collaborative or deferring coping style and be better adjusted psychologically. Persons who view God as false, worthless, or deistic and have an Extrinsic motivation tended to be self-directing in their coping

style and be more poorly adjusted psychologically, as assessed by higher levels of anxiety.

Coping style partially mediated the relationship between religious motivation/beliefs about God and anxiety. The results of this study suggest that coping style should not be considered as at the sole contributing factor in the relationship between religiosity and well-being.

One study examined religious coping as both a mediator of the relationship between religiousness and mental health in times of stress and as a moderator between stressors and mental health (Fabricatore, Randal, Rubio, & Gilner, 2004). Participants were undergraduate psychology students at a religiously affiliated university. The authors measured religiousness (subjective strength of religiousness, extent to which individuals perceive their relationship with God to be integrated into their everyday thoughts feelings, behaviors, and decisions), major and minor stressors, religious problem solving (coping), satisfaction with life, positive and negative affect, and general health (severity of recently experienced psychological distress with cognitive, affective, behavioral, and physiological manifestations). Experience of stressors was directly related to well-being and distress. Religiousness was directly related to collaborative religious coping, which in turn was directly related to well-being and distress. The indirect relationships between religiousness and well-being and distress were both significant, providing support for collaborative religious coping as a mediator. No support was observed for directive coping style as a mediator. This study demonstrates the distinct roles of different styles of religious coping.

Although coping style is largely implicated in religiosity, little is known about its function between religiosity and well-being outcomes. Previous research has shown that coping styles may partially contribute to this relationship, and that additional variables might be helpful in providing a more full explanation. These studies also provide information that certain styles of coping, but not others, may have influence in the relationship between religiosity and well-being.

Positive Affect.

Religious practice can lead to positive emotions such as contentment, love, joy, wonder/awe, thankfulness, forgiveness, hope, and optimism. Such positive emotions may counteract negative effects of daily stressors. Psychosocial resources that involve positive self-perceptions, such as self-esteem, self-efficacy, and personal mastery are known to be positively associated with religious participation as well as with positive health outcomes.

Loewenthal, MacLeod, Goldblatt, Lubitsh, and Valentine (2000) examined cognitive aspects of coping with stress, how these related to religiosity, and how they related to positive mood and distress in a sample of Protestant and Jewish participants recruited through church and synagogue groups. All participants indicated experiencing high levels of stress at the time of the study. The authors assessed stress (health-related, finance/employment-related, and relationships-related), religious activity (frequency of prayer, attendance at place of worship, religious study), religious orientation (Intrinsic, Extrinsic, Quest), three cognitions related to religious coping (all for the best; God control and other causal attributions; religious/spiritual support; proportion of positive consequences; intrusive unpleasant thoughts, including frequency, uncontrollability, clarity, and unpleasantness), perception of the consequences of the stressful event and attribution for its occurrence, positive and negative affect, anxiety, and depression. Religiosity (activity and orientation combined) was associated with positive mood. The cognition/coping variables had no direct relationship with distress, only with positive affect. This finding highlights the important connection between religiosity and positive affective states.

Park, Edmondson, Hale-Smith, & Blank (2009) examined positive and negative affect as a mediating factor in the relationship between spiritual experiences and health behaviors. Data used in this study were collected as part of a larger study of cancer survivorship and psychosocial

variables related to quality of life. Participants were recruited through the Cancer Registry at Hartford Hospital. Religiosity/spirituality (religious attendance, daily spiritual experiences, and spiritual strain), health behaviors (following doctors' advice, taking medications as prescribed, engaging in moderate and vigorous exercise, and alcohol intake), and two aspects of positive and negative affect (self-assurance and guilt/shame) were assessed. Religious attendance was unrelated to affect or health behaviors. Daily spiritual experiences were related to more days per week in which participants ate five servings of fruits and vegetables and engaged in moderate to vigorous exercise, as well as greater adherence to doctors' advice. Religious struggle was related to lower adherence to doctors' advice, lower adherence to medication regimen, and more days with heavier alcohol consumption. Relationships between daily spiritual experiences and health behaviors of exercise and adherence to doctors' advice were mediated by higher levels of self-assurance, although self-assurance did not explain the link between daily spiritual experiences and diet. Degree of religious struggle was linked to frequency of alcohol use and lack of adherence to doctors' advice, and was mediated by high levels of guilt/shame, although guilt/shame did not explain the relationship between struggle and lower medication adherence. In summary, each affective factor mediated some but not all relationships between religiosity/spirituality and health behaviors.

Whitehead & Bergeman (2012) examined the potential moderating effect of everyday spiritual experiences on the negative effects of perceived daily stress on daily positive and negative affect. Spiritual experiences were defined as aspects of spirituality that are not necessarily tied to religion. Examples may include feeling the presence of God, feeling touched by the beauty of creation, or having a sense of inner peace and harmony. Data were drawn from a subsample of the larger Notre Dame Study of Health and Well-Being, which explored the

processes and correlates of stress and well-being in middle-aged and older adults. The authors analyzed measures of global perceived stress, daily spiritual experiences, and daily positive and negative affect. Participants reported lower positive affect on days when they experienced levels of perceived stress above their own average, and reported higher positive affect on days when they experienced levels of spiritual experiences above their own average. These findings suggest that spiritual experiences serve a buffering function on negative affect, where higher levels of spiritual experiences reduce the negative impact of stress on negative affect. A buffering function was not found for positive affect, however the authors did find that everyday spiritual experiences have a direct effect on positive affect that is independent of perceived stress. The data suggest that everyday spiritual experiences boost positive affect, both on days when individuals do not feel stressed as well as on days when they do.

These above studies provide information on the relationship between spiritual experiences and positive and negative affect, and of the role of affect in the relationship between spiritual experiences and physical health. However, empirical information regarding whether positive affect is a contributing factor in the relationship between religion and mental health has not been established. It appears that religious motivation, social support, meaning in life, healthy behaviors, religious coping styles, and positive affect impact well-being in important ways. Research has examined the impact of these variables individually, but no study has examined all five of these factors in a single model.

The purpose of the current study is to assess the role of religiosity in the relationships between social support, meaning in life, healthy behaviors, positive religious coping, positive affect, and psychological well-being. A sample of undergraduate students completed questionnaires that assessed their Intrinsic religious motivation, perceived social support, sense

of meaning in life, engagement in healthy behaviors, religious coping style, positive affect, and 3 indicators of well-being including depression, anxiety, and life satisfaction. It was expected that the combination of social support, meaning in life, healthy behaviors, positive coping style, and positive affect would account for a significant amount of variance in the relationship between religiosity and well-being. Examination of which variables make the strongest contributions is exploratory. This study will add to the literature by providing a better understanding of which of these variables yield the most meaningful explanations of well-being and how these variables combine to explain well-being.

METHOD

Participants

Participants were 155 undergraduate students at a mid-sized public university located in the southeastern United States. Participants received course credit for their participation. The sample was 76.8% Caucasian, 11.6% African American, 7.7% Asian, and 2.6% other minorities ranging in age from 18-24. The sample contained more female (78.1%) than male (20.6%) participants. More than half (51.6%) of the participants reported affiliation with a Judeo-Christian religion, 4.6% with a non-Christian religion, 11.1% with no religious affiliation, and 32.7% did not respond.

Measures

Religiousness. The Intrinsic/Extrinsic-Revised Scale (I/E-R; Gorsuch & McPherson, 1989) is a 14-item measure of religious motivation that assesses Intrinsic religiosity and two subcategories of Extrinsic religiosity: Extrinsic-social (Es; social relationships) and Extrinsic-personal (Ep; personal benefits). Participants are asked to respond to five-point Likert-type items that range from *Strongly Disagree* to *Strongly Agree* and assess an individual's motivation for religious participation (e.g., "What religion offers me most is comfort in times of trouble and sorrow"; "I go to church because it helps me make friends"). Higher scores indicate higher levels of the particular religious orientation. Cronbach's alpha coefficients were .83 for Intrinsic, .57 for Extrinsic-personal, .73 for Extrinsic-social, and .66 for total Extrinsic religiosity. Discriminant validity correlation coefficients of the subscales were .07 between Intrinsic and Extrinsic-personal, -.12 between Intrinsic and Extrinsic-social, and .41 between the Extrinsic-

social and Extrinsic-personal. Scores range from eight to 40 for Intrinsic, and from three to 15 for each of the Extrinsic scales. Because of the low levels of internal consistency on the Extrinsic subscales, and because questions have been raised as to the usefulness of the Extrinsic religiosity construct (Pargament, 1992), only the Intrinsic religiosity subscale was used in the current study. In the current sample, the Cronbach's alpha coefficient for Intrinsic religiosity was .84.

Social Support. The Social Provisions Scale (SPS; Cutrona & Russell, 1987) is a 24-item measure of social support that assesses six areas of support: guidance, reassurance of worth, social integration, attachment, nurturance, and reliable alliance. The SPS items were developed from a theoretical model that encompassed a broad range of interpersonal functions. Participants are asked to respond on a four-point scale ranging from *Strongly Disagree* to *Strongly Agree* to items that reflect levels of social support (e.g., "There are people I can count on in an emergency"; "I feel part of a group of people who share my attitudes and beliefs"). Higher total scores indicate a greater general perception of social support.

Total score internal consistency reliability coefficients ranged from $\alpha = .85$ to $.92$ across a variety of samples. Studies of validation have demonstrated a strong, negative relationship between SPS scores and loneliness, and a positive relationship between SPS scores and life satisfaction (Cutrona & Russell, 1987). In the current sample, the Cronbach's alpha coefficient for the total score was $.92$.

Meaning in Life. The Meaning in Life Questionnaire (MLQ; Steger, Frazier, Oishi, & Kaler, 2006) is a 10-item measure of presence of meaning in life (e.g., "I have a good sense of what makes my life meaningful") and search for meaning (e.g., "I am seeking a purpose or mission for my life"). Items are rated on a 7-point Likert-type response scale that ranges from *Absolutely Untrue* to *Absolutely True*. The MLQ does not yield a total score, but instead yields

two subscale scores. Higher scores on the presence subscale indicate a higher level of perceived meaning in life, and higher scores on the search subscale indicate a higher level of motivation to find meaning for one's life. Convergent and discriminant validity were demonstrated using a multitrait-multimethod matrix utilizing self- and informant reports. Presence of meaning is positively related to well-being, Intrinsic religiosity, extraversion and agreeableness, and negatively related to anxiety and depression. Search for meaning is positively related to religious quest, rumination, past-negative and present-fatalistic time perspectives, negative affect, depression, and neuroticism, and negatively related to future time perspective, close-mindedness, and well-being. Since presence of meaning is believed to be associated with positive mental health outcomes and search for meaning is associated with negative outcomes, the Presence scale only was used for the current study. The Presence subscale has demonstrated good internal consistency reliability (alpha coefficients range from .82 to .86). Test-retest reliability over one month was also good ($r = .70$). Presence scores related highly to other measures of meaning in life (correlation coefficients ranged from .60 to .86), providing evidence of convergent validity, and furthermore were shown to be distinct from life satisfaction, optimism, and self-esteem (Steger & Frazier, 2005). In the current sample, the Cronbach's alpha coefficient for the Presence score was .91.

Health-related Behaviors. The Health Behavior Checklist (Vickers, Conway, & Hervig, 1990) consists of a list of 40 health-related behaviors. Participants indicate how well each item describes their typical behavior on a 5-point scale ranging from *Strongly Disagree* to *Strongly Agree*. Items include behaviors that are related to wellness maintenance and enhancement (e.g., "I exercise to stay healthy"), accident control (e.g., "I have a first aid kit in my home"), risk-taking behaviors related to vehicular and pedestrian activities (e.g., "I speed while driving"; "I

cross the street across the stop light”), and risk-taking behaviors related to substance use (e.g., “I don’t take chemical substances which might injure my health”). A higher total score indicates higher level of engagement in healthy behaviors. Twenty-six of the items assess four factor-analytically derived health behaviors, with the inclusion of 14 additional items as fillers. The four factors were replicated in a second study. Each scale had moderate internal consistency ($\alpha = .65$ or greater, averaged across four samples), with the exception of substance risk-taking, which had a lower average ($\alpha = .55$). The item “I pray or live by principles of religion” was removed to avoid inflated correlation with the religious measures, leaving a total of 39 rated health behaviors. In the current sample, the Cronbach’s alpha coefficient for the total score with one item removed was .84.

Positive Religious Coping. The Brief RCOPE was developed out of Pargament’s program of theory and research on religious coping (Pargament, Smith, Koenig & Perez, 1998). It is a 14-item measure of positive and negative religious coping as ways that people deal with everyday stressors. Participants are asked to respond to 4-point Likert-type items (ranging from *Not at all* to *A great deal*) that assess how an individual coped with a negative event (e.g., “Looked for a stronger connection with God”; “Questioned God’s love for me”). Positive religious coping methods reflect a secure relationship with a transcendent force, a sense of spiritual connectedness with others, and a benevolent worldview. Negative religious coping methods reflect underlying spiritual tensions and struggles within oneself, with others, and with the divine. The positive coping subscale only was used for the current study. The positive religious coping subscale has shown to be predictive of fewer psychological symptoms and greater well-being. Higher scores indicate more use of the coping mechanism. Internal consistency for the positive coping subscale is good, with alpha coefficients ranging from .87 to .90 across widely different samples. In the

current sample, the Cronbach's alpha coefficient for the positive coping scale was .97.

Positive Affect. The Positive and Negative Affect Scale (PANAS; Watson, Clark, & Tellegen, 1988) is a measure of affective states. Items describe 20 different feelings and emotions (e.g., "Interested"; "Irritable"). Participants are asked to indicate to what extent they generally feel this way, or how they feel on the average, rated on five points ranging from *Very slightly or not at all* to *Extremely*. Positive Affect reflects the extent to which a person feels enthusiastic, active, and alert. High positive affect is a state of high energy, full concentration, and pleasurable engagement, whereas low Positive Affect is characterized by sadness and lethargy. The Positive Affect subscale only was used in the current study. The subscale has good internal consistency reliability (alpha coefficients ranging .86 to .90 across several samples) and appropriate stability over a two-month time period. In the current sample, the Cronbach's alpha coefficient for the Positive Affect subscale was .87.

Satisfaction with Life. The Satisfaction With Life Scale (SWLS; Diener, Emmons, Larson, & Griffin, 1985) is a five-item measure that assesses overall subjective well-being. Participants are asked to respond to Likert-type responses ranging from 1 (*Absolutely Untrue*) to 7 (*Absolutely True*) that inquire about individuals' level of satisfaction with their lives (e.g., "If I could live my life over, I would change almost nothing"). The SWLS has high internal consistency reliability ($\alpha = .87$), two-month test-retest reliability ($r = .82$), and is distinct from related constructs, such as positive affect and loneliness. Higher scores indicate greater satisfaction with life. In the current sample, the Cronbach's alpha coefficient for the total score was .83.

Depression and Anxiety. The Depression Anxiety Stress Scale-21 (DASS-21) is a short version of the Depression Anxiety and Stress Scale developed by Lovibond and Lovibond

(1995). It consists of three 7-item scales that assess specific components of depression, anxiety, and stress. The depression scale measures symptoms related to dysphoric mood (e.g., sadness, worthlessness), the anxiety scale measures symptoms of physical arousal (e.g., trembling, faintness), and the stress scale assesses symptoms such as tension and irritability. Participants are asked to indicate how much each item applied to them over the last week. Items (e.g., “I felt downhearted and blue”; “I found it difficult to relax”) are presented on a Likert-type scale ranging from 0 (*Did not apply to me at all*) to 3 (*Applied to me very much, or most of the time*). Item responses are summed to yield scores for each of the three subscales and a total score. Higher scores indicate greater severity of symptoms. Each subscale has adequate internal consistency reliability, with alpha coefficients ranging from .88 to .94 for depression, .82 to .87 for anxiety, and .90 to .91 for stress (Antony, Bieling, Cox, Enns, & Swinson, 1998; Henry & Crawford, 2005). The depression and anxiety subscales were used for the current study. Construct validity is supported in the clear distinction between the symptoms of depression and anxiety. Each of the subscales is strongly related to other assessments of depression and anxiety. The depression subscale was most highly correlated with other measures of depression, and moderately with other anxiety measures, and the anxiety subscale correlated most highly with other measures of anxiety (Antony et al., 1998). In the current sample, the Cronbach’s alpha coefficients were .90 (depression) and .83 (anxiety).

Demographic Information. Demographic information of each participant including age, sex, race/ethnicity, marital status, and religious affiliation was collected.

Procedure

Participants were recruited through Sona Systems, an online participant recruitment and management site. The questionnaires were administered via a computer program (Qualtrics)

designed to allow surveys to be completed online. Participants were first given an overview of the study and provided informed consent. They were given an unlimited amount of time for completion of the questionnaires. Participants completed a demographic questionnaire, the Intrinsic/Extrinsic-Revised Scale, the Social Provisions Scale, the Meaning in Life Questionnaire, the Health Behavior Checklist, the Brief RCOPE, the Positive and Negative Affect Scale, the Satisfaction with Life Scale, and the Depression Anxiety Stress Scale-21. Counterbalanced presentation of these questionnaires was ensured by use of Qualtrics.

RESULTS

Preliminary Analysis

Data from two participants were removed from the analysis due to incomplete surveys, leaving a total of 153 participants in the analysis. The remaining cases had no missing data. Data were explored with histograms, Q-Q plots, and descriptive statistics. Skew and Kurtosis indices (see Table 1) indicated that several variables were not normally distributed. Presence of meaning in life had a somewhat negatively skewed distribution, with a skewness of $-.96$ ($SE = .20$) and kurtosis of 1.03 ($SE = .39$). Positive religious coping had a relatively flat distribution, however, responses tended to peak at the high and low ends of the scale (skewness = $-.43$, $SE = .20$; kurtosis = -1.14 , $SE = .39$). Regarding the dependent variables, Satisfaction with life was negatively skewed (skewness = $-.92$, $SE = .20$; kurtosis = $.37$, $SE = .39$), and depression and anxiety were both positively skewed (skewness = 1.67 , $SE = .20$; kurtosis = 2.69 , $SE = .39$; (skewness = 1.77 , $SE = .20$; kurtosis = 4.06 , $SE = .39$, respectively). Mahalanobis distance was used to test for multivariate outliers for normally distributed variables. No cases were found to exceed the critical value ($F = 22.46$, $\alpha = .001$), indicating no presence of outliers (Stevens, 2002). Histograms were examined to identify outliers in the variables with non-normal distributions and no outliers were found. Preacher and Hayes' (2004, 2008) bootstrapping techniques differ from traditional methods of mediation analyses in that they do not impose assumptions of normality (MacKinnon, Fairchild, & Fritz 2007), and therefore corrections were not necessary for conducting the remaining analyses.

Table 1
Skew and Kurtosis Indices

	Skew (SE = .20)	Kurtosis (SE = .39)
Intrinsic Religiosity	-.28	-.86
Social Provisions Total	-.35	-.73
Presence of Meaning	-.96	1.03
Health Behavior Total	-.17	-.09
Positive Religious Coping	-.43	-1.14
Positive Affect	-.52	.09
Satisfaction With Life	-.92	.37
Depression	1.67	2.69
Anxiety	1.77	4.06

Variance Inflation Factors (VIF), which report how much variance of a coefficient is inflated due to correlation with other predictors, were calculated to test for multicollinearity among variables. There is no standard criteria for determining the appropriate cutoff for a VIF value, however cutoff rules such as $VIF \leq 5$ or $VIF \leq 10$ have been frequently used (Craney & Surlis, 2002; O'brien, 2007). Given that all VIF values in the current sample were lower than 3 and most were lower than 2.5, even using a conservative cutoff rule would suggest that multicollinearity is not problematic in this data set.

Means and standard deviations were computed for key variables and are presented in Table 2. Exploratory Pearson *r* correlations were computed among key variables and are presented in Table 3.

Table 2
Descriptive Statistics for Key Variables

	Mean	SD	Range
Intrinsic Religiosity	27.80	7.07	12.00-40.00
Social Provisions Total	80.52	9.68	55.00-96.00
Presence of Meaning	25.86	6.42	5.00-35.00
Health Behavior Total	88.01	15.20	45.00-127.00
Positive Religious Coping	19.40	7.32	7.00-28.00
Positive Affect	32.96	6.08	15.00-44.00
Satisfaction With Life	25.73	5.47	10.00-35.00
Depression	3.54	4.14	0.00-20.00
Anxiety	3.78	3.91	0.00-21.00

Table 3

Bivariate Relationships Among Key Variables

	1	2	3	4	5	6	7	8	9
1. Intrins.	-	.21*	.31**	.05	.78**	.16*	.16*	-.09	-.04
2. Social		-	.40**	.15	.18*	.43**	.39**	-.45**	-.25**
3. Mean.			-	.25**	.23**	.47**	.46**	-.50**	-.20*
4. Health				-	.02	.23**	.28**	-.17*	-.08
5. Coping					-	.15	.10	-.01	.07
6. Affect						-	.46**	-.45**	-.14
7. Satisf.							-	-.44**	-.11
8. Depres.								-	.64**
9. Anx.									-

Note. * $p < .05$, two-tailed. ** $p < .01$, two tailed. Intrins = Intrinsic Religiosity; Social = Social Provisions Total Score; Mean = Presence of Meaning; Health = Health Behavior Total Score; Coping = Positive Religious Coping; Affect = Positive Affect; Satis = Satisfaction With Life; Depres = Depression; Anx = Anxiety

Main Analyses

Using the PROCESS procedure for SPSS (Preacher & Hayes, 2008), the following models were estimated to derive the total, direct, and indirect effects of religiosity on well-being (depression, anxiety, life satisfaction) through social support, meaning in life, healthy behaviors, positive religious coping, and positive affect. Regression analyses were conducted to assess each component of the proposed mediation models. The number of bootstrap samples for percentile bootstrap confidence intervals was 1000, with a 95% confidence interval of the indirect effects. Results are summarized in Tables 4-7.

Table 4

Regression Results for Intrinsic Religiosity on Mediating Variables

Predictor	<i>B</i>	<i>SE</i>	<i>t</i>	<i>p</i>	95% CI	
					<i>LL</i>	<i>UL</i>
IV to M (a paths)						
a₁ - Social	.28	.11	2.58	.01	.07	.50
a₂ - Mean	.28	.07	4.06	<.01	.15	.42
a₃ - Health	.12	.17	.67	.50	-.23	.46
a₄ - Coping	.81	.05	15.32	<.01	.70	.91
a₅ - Affect	.14	.07	2.01	.05	<.01	.28

*Note. CI = confidence interval; LL = lower limit; UL = upper limit; IV = independent variable (Intrinsic Religiosity); M = mediator; Social = Social Provisions Total Score; Mean = Presence of Meaning; Health = Health Behavior Total Score; Coping = Positive Religious Coping; Affect = Positive Affect

Table 5

Indirect Effects on Depression

Predictor	<i>B</i>	<i>SE</i>	<i>t</i>	<i>p</i>	95% CI	
					<i>LL</i>	<i>UL</i>
M to DV (b paths)						
b₁ - Social	-.22	.06	-3.39	<.01	-.35	-.09
b₂ - Mean	-.43	.10	-4.14	<.01	-.63	-.22
b₃ - Health	>-.01	.04	-.04	.96	-.08	.07
b₄ - Coping	.18	.12	1.55	.12	-.05	.42
b₅ - Affect	-.28	.11	-2.61	.01	-.49	-.07
IV to DV (c paths)						
c - Total Effect	-.10	.10	-1.08	.28	-.29	.08
c' - Direct Effect	-.03	.13	-.23	.82	-.28	.22

*Note. CI = confidence interval; LL = lower limit; UL = upper limit; IV = independent variable (Intrinsic Religiosity); DV = dependent variable (Depression); M = mediator; Social = Social Provisions Total Score; Mean = Presence of Meaning; Health = Health Behavior Total Score; Coping = Positive Religious Coping; Affect = Positive Affect

Table 6

Indirect Effects on Anxiety

Predictor	<i>B</i>	<i>SE</i>	<i>t</i>	<i>p</i>	95% CI	
					<i>LL</i>	<i>UL</i>
M to DV (b paths)						
b₁ - Social	-.17	.07	-2.38	.02	-.32	-.03
b₂ - Mean	-.15	.12	-1.31	.19	-.38	.08
b₃ - Health	-.01	.04	-.19	.85	-.09	.08
b₄ - Coping	.28	.13	2.08	.04	.01	.54
b₅ - Affect	.01	.12	.08	.94	-.23	.25
IV to DV (c paths)						
c - Total Effect	-.05	.09	-.51	.61	-.22	.13
c' - Direct Effect	-.18	.14	-1.27	.21	-.46	.10

**Note.* CI = confidence interval; LL = lower limit; UL = upper limit; IV = independent variable (Intrinsic Religiosity); DV = dependent variable (Depression); M = mediator; Social = Social Provisions Total Score; Mean = Presence of Meaning; Health = Health Behavior Total Score; Coping = Positive Religious Coping; Affect = Positive Affect

Table 7

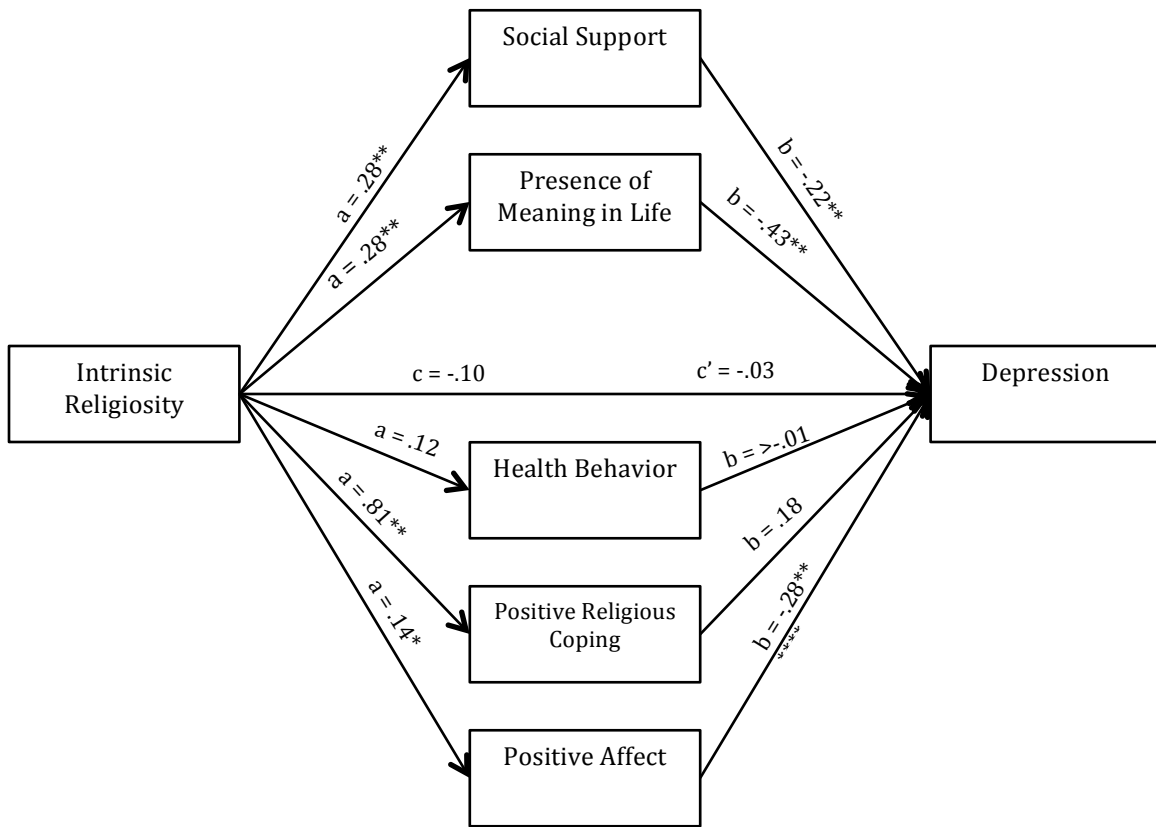
Indirect Effects on Satisfaction with Life

Predictor	<i>B</i>	<i>SE</i>	<i>t</i>	<i>p</i>	95% CI	
					<i>LL</i>	<i>UL</i>
M to DV (b paths)						
b₁ - Social	.10	.04	2.23	.03	.01	.18
b₂ - Mean	.21	.07	2.93	<.01	.07	.35
b₃ - Health	.05	.03	1.85	.07	>-.01	.10
b₄ - Coping	-.05	.08	-.63	.53	-.21	.11
b₅ - Affect	.22	.07	3.02	<.01	.08	.36
IV to DV (c paths)						
c – Total Effect	.12	.06	2.01	.05	<.01	.25
c' – Direct Effect	.04	.09	.51	.61	-.13	.21

**Note.* CI = confidence interval; LL = lower limit; UL = upper limit; IV = independent variable (Intrinsic Religiosity); DV = dependent variable (Depression); M = mediator; Social = Social Provisions Total Score; Mean = Presence of Meaning; Health = Health Behavior Total Score; Coping = Positive Religious Coping; Affect = Positive Affect

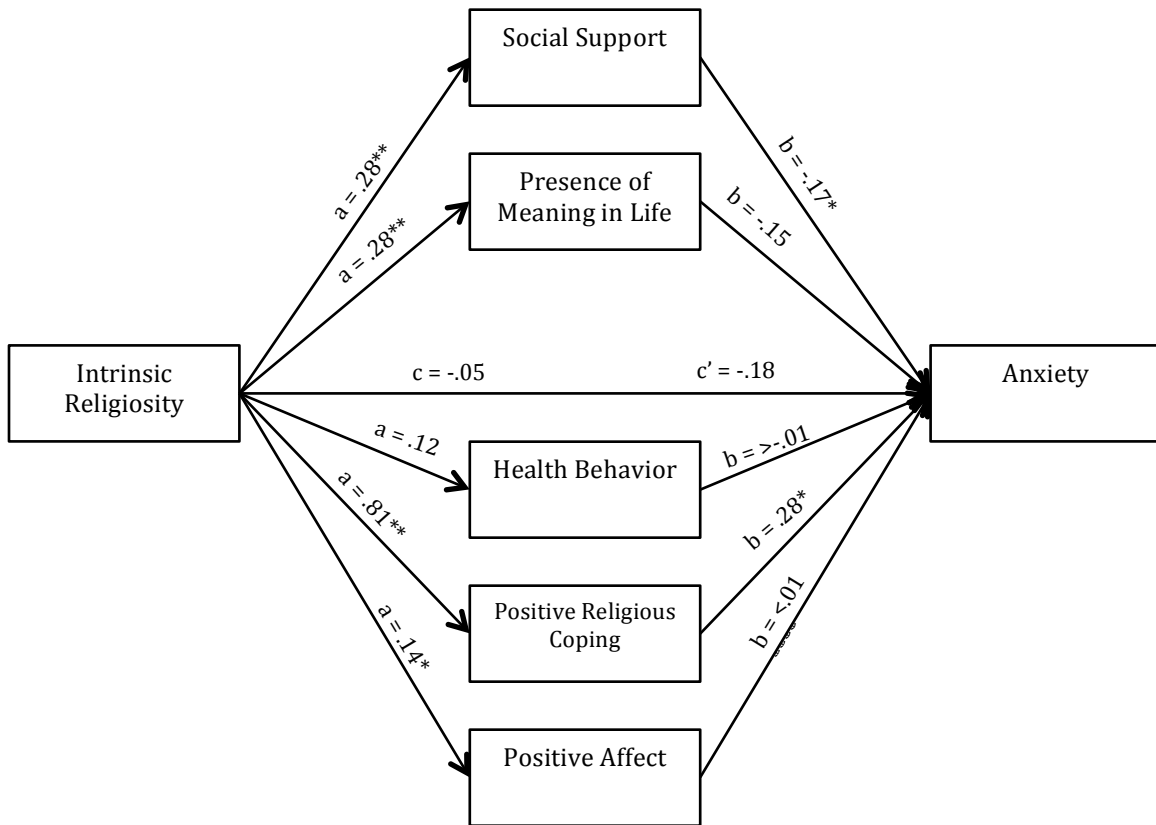
The overall indirect effects of Intrinsic Religiosity on Depression (indirect effect = -.07, SE = .13, 95% CI [-.35, .18]), Anxiety (indirect effect = .13 SE = .11, 95% CI [-.09, .35]), and Life Satisfaction (indirect effect = .08, SE = .07, 95% CI [-.06, .21]) were not significant. Path coefficients are presented in Figures 1-3.

Fig. 1
Path coefficients for multiple mediation analysis on depression



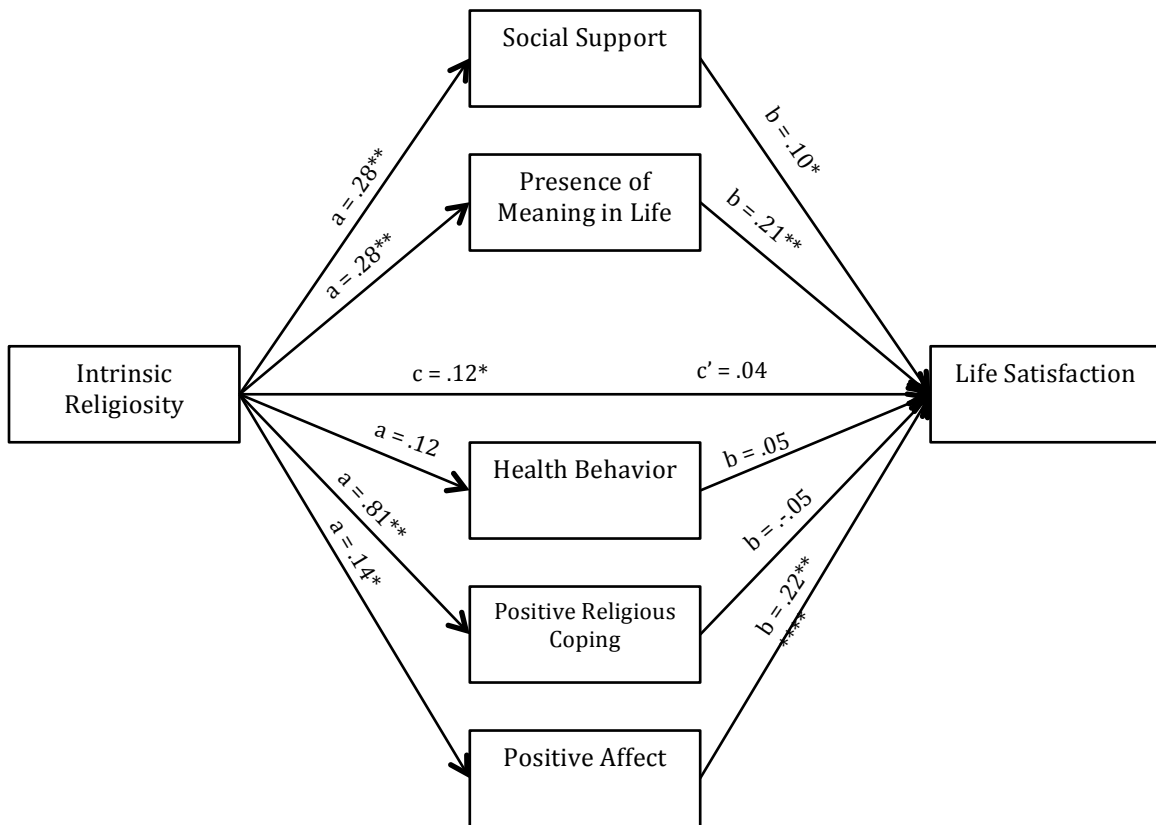
Note: c denotes the total effect of Intrinsic Religiosity on Depression; c' denotes the direct effect of Intrinsic Religiosity on Depression after controlling for mediators. * $p < .05$; ** $p < .01$.

Fig. 2
Path coefficients for multiple mediation analysis on anxiety



Note: c denotes the total effect of Intrinsic Religiosity on Anxiety; c' denotes the direct effect of Intrinsic Religiosity on Anxiety after controlling for mediators. * $p < .05$; ** $p < .01$

Fig. 3
Path coefficients for multiple mediation analysis on life satisfaction



Note: c denotes the total effect of Intrinsic Religiosity on Life Satisfaction; c' denotes the direct effect of Intrinsic Religiosity on Life Satisfaction after controlling for mediators. $^*p < .05$; $^{**}p < .01$

DISCUSSION

Correlations between Intrinsic religiosity and the proposed mediating variables showed significant relationships in the expected directions with the exception of health behavior which, although it was in the expected direction, showed a weak and non-significant relationship with religiosity. Correlations between the proposed mediating variables and the outcome variables (life satisfaction, depression, and anxiety) were also in the expected directions. However, relationships between health behavior and anxiety and between positive affect and anxiety were weak and non-significant. Additionally, religious coping was not significantly correlated with any of the outcome variables. The proposed mediating variables social support, meaning in life, healthy behaviors, positive religious coping styles, and positive affect did not account for a significant amount of variance in the relationship between religiosity and depression, anxiety, and life satisfaction. Therefore, the hypothesis that these five variables would mediate the relationship between religiosity and well-being was not supported.

Review of the literature on religiosity as it relates to mental health yields numerous studies that demonstrate a positive relationship between religiosity and psychological well-being and a negative relationship between religiosity and indicators of distress, such as depression and anxiety (Ellison & Levin, 1998; Hackney & Sanders, 2003; Koenig, 2001; Smith, McCullough, & Poll, 2003). It is therefore surprising that Intrinsic religiosity showed a weak positive relationship with life satisfaction and no significant relationship with either depression or anxiety.

The lack of significant relationships between the key variables in this study may be due

in part to a general moving away from traditional religious affiliations in the United States, especially among a college student population. In a study of first-year college students, Bryant, Choi, & Yasuno (2003) found that participants were less likely to engage in religious practices while in college than when they were in high school. Participants in this study were also less likely to attend religious services, discuss religion, and pray/meditate at the end of their first year of college compared to the beginning of the year, with the percentage of students who did not attend religious services increasing by 27%. Additionally, 10.3% of students stopped praying or meditating during their freshman year. Despite lower engagement in religious activities, they simultaneously reported higher levels of commitment to spirituality (measured as students' self-rated spirituality compared with same-age peers and their degree of commitment to the goal of integrating spirituality into their lives). These findings were affirmed in a longitudinal study by Stoppa & Lefkowitz (2010), who assessed changes in religiosity among students during their first 3 semesters of college. Participants reported decreases in attendance at religious services and in engagement in other religious activities (e.g., Bible studies/clubs) despite maintaining stability in the importance of their beliefs across the 3 semesters. Similarly, the Higher Educational Research Institute (2005) found that religious engagement (including attending religious services, praying, religious singing/chanting, and reading sacred texts) declines somewhat during college, but students' spiritual qualities (including equanimity, spiritual quest, ethic of caring, charitable involvement, and ecumenical worldview) tend to grow.

Considering this information, it may be that college students live out their religious beliefs differently than older populations. Of the studies reviewed for the current study, only 7 collected data from a college student population (Doane, 2013; Fabricatore, Randal, Rubio & Gilner, 2004; Schaefer & Gorsuch, 1991; Sillick & Cathcart, 2014; Steger & Frazier, 2005;

Vilchinsky & Kravetz, 2005; Wnuk & Marcinkowski, 2014). Of those 7 studies, 2 used participant samples from universities that were church-affiliated, and 4 used samples from universities outside of the United States. Given the sources of data in the literature that explore mediating factors in the relationship between religiosity and well-being, there is an insufficient basis for generalizability to a college student population within the United States. The results of the current study may be an indicator that the relationship between religiosity and psychological well-being among college students may not be similar to that of the larger population. Similarly, Sillick and Cathcart (2014) found that Intrinsic religiosity was negatively correlated with meaning in life and was not a predictor of happiness in a sample of undergraduate psychology students attending a university in Australia. Comparable to the current study, these findings were unexpected as they go against the majority of data in the literature suggesting a positive relationship between measures of Intrinsic religiosity and various indicators of psychological well-being, including happiness.

In support of the possibility that the relationship between religiosity and well-being in college students might be related to church attendance, Doane (2013) found that religious service attendance accounted for a small but unique proportion of the variance in the prediction of satisfaction with life after controlling for sex, age, relationship status, perceived social support, physical health, and five-factor personality traits. Furthermore, perceived religious social support fully mediated the association between religious service attendance and life satisfaction in this study, providing evidence for the role of religion in providing supportive relationships within a college student population in Ireland.

In the current study, many participants rated their levels of Intrinsic religiosity highly, but behavioral aspects of religiosity were not assessed. It could be that although participants adhere

to a given set of beliefs or type of spirituality, if they do not engage in behavioral practices related to that faithfulness it might not be adding benefit to their psychological well-being. This accentuates the importance of measuring religiosity along multiple dimensions, including behavioral practices in addition to religious orientation or internalization of beliefs.

Limitations and Future Directions

Several limitations of the current work deserve mention. Demographics of the present sample indicate a majority of female participants (78.1%) and a relatively restricted range of ethnic and religious diversity, as well as a restricted age-range. In order to determine generalizability of these data, future work should involve a more even sample of male and female participants, and incorporate a more diverse ethnic and religious demographic of varying ages that is representative of the general population.

Data in this study were gathered entirely through self-report questionnaires, which offer the personal perspectives of individuals, but may also include individual biases, desirability responding, and human errors (e.g., misreading or misunderstanding directions, misinterpretation of items, careless responding, etc.). Suggested methods to ensure the integrity of data include the insertion of bogus items within questionnaires in order to flag “incorrect” responses, as well as computing consistency indices to detect careless responses (Meade & Craig, 2011). Others suggest the inclusion of items at the end of a survey asking participants to report on the level of effort they put forth throughout the study (Desimone, Harms, & Desimone, 2015). Alternatively, future work may improve on data collection by incorporating objective measurement methods that may include direct behavioral observations.

Although results of the current study suggest a relatively high level of Intrinsic religiosity among participants, information on religious participation in public services or private

prayer/reading practices was not collected and therefore it is not known if the sample had high rates of religious activity. Given the data indicating that college students are less likely to participate in behavioral religious activities, and it is currently unclear precisely which aspects of religiosity (such as various behavioral practices or internalized beliefs) are most likely to contribute to psychological well-being, future research would benefit from a systematic investigation of the aspects of religiosity that have the most predictive power regarding psychological well-being. It could be that the benefits to psychological well-being are afforded by specific types of practice behaviors, such as church attendance. If this is the case, then it is possible that a general religiosity measure assessing religious practices and behaviors may be more appropriate for a college student population.

Finally, a limitation within the general area of literature pertaining to religiosity and well-being is a lack of prior research studies on relevant variables in the relationship between these two constructs. Much research has been dedicated to determining the nature of the relationship between them, such as whether they have a relationship at all and if so, whether it is a positive or negative one. Much less research has attempted to examine possible reasons for the positive relationship that has been found. Furthermore, much of the literature that does address explanation of the relationship often contains more theoretical postulations than empirical studies that test hypotheses. It is not uncommon for authors to assert that certain variables (such as sense of meaning in life, for example) are responsible for observed outcomes despite lacking sufficient data to make such a claim (Ellison & Levin, 1998; George, Larson, Koenig, & McCullough, 2000; George, Ellison, & Larson, 2002; Seybold & Hill, 2001). As further empirical studies are conducted to clarify what variables have a mediating effect in the relationship, a unified model will be more easily examined.

Conclusion

The present data failed to produce the expected results, suggesting that further investigation of the relationship between religiosity and well-being is warranted. Furthermore, it appears that constructs generally believed to be causal factors in this relationship may not be as influential as is often assumed in the current literature, and therefore caution should be exercised when attributions about the relationship between religiosity and well-being are made. It is also a possibility that the positive relationship was not observed in the current sample because the manifestation of religiosity seems to be different in college students than in an older population in that although student participants may express commitment to spiritual beliefs or concepts, they are less likely to engage in various religious behaviors. The research literature pertaining to religion and spirituality as it relates to well-being would be benefitted by future investigations regarding the various manifestations or aspects of religiosity within the lives of different groups of individuals.

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LIST OF APPENDICES

APPENDIX A: INTRINSIC/EXTRINSIC - REVISED SCALE

Please rate your agreement with the following statements on how well each one describes you.

Strongly Disagree 1	Somewhat Disagree 2	Neither Agree Nor Disagree 3	Somewhat Agree 4	Strongly Agree 5
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1. I enjoy reading about my religion.
2. I go to church because it helps me make friends.
3. It doesn't much matter what I believe so long as I am good.
4. It is important to me to spend time in private thought and prayer.
5. I have often had a strong sense of God's presence.
6. I pray mainly to gain relief and protection.
7. I try hard to live all my life according to my religious beliefs.
8. What religion offers me most is comfort in times of trouble and sorrow.
9. Prayer is for peace and happiness.
10. Although I am religious, I don't let it affect my daily life.
11. I go to church mostly to spend time with my friends.
12. My whole approach to life is based on my religion.
13. I go to church mainly because I enjoy seeing people I know there.
14. Although I believe in my religion, many other things are more important in life.

APPENDIX B: SOCIAL PROVISIONS SCALE

Instructions: In answering the following questions, think about your current relationships with friends, family members, co-worker, community members, and so on. Please indicate to what extent each statement describes your current relationships with other people. Use the following scale to indicate your opinion.

Strongly Disagree	Disagree	Agree	Strongly Agree
1	2	3	4

So, for example, if you feel a statement is very true of your current relationships, you would respond with a 4 (strongly agree). If you feel a statement clearly does not describe your relationships, you would respond with a 1 (strongly disagree).

1. There are people I can depend on to help me if I really need it.
2. I feel that I do not have close personal relationships with other people.
3. There is no one I can turn to for guidance in times of stress.
4. There are people who depend on me for help.
5. There are people who enjoy the same social activities I do.
6. Other people do not view me as competent.
7. I feel personally responsible for the well-being of another person.
8. I feel part of a group of people who share my attitudes and beliefs.
9. I do not think other people respect my skills and abilities.
10. If something went wrong, no one would come to my assistance.
11. I have close relationships that provide me with a sense of emotional security and well-being.
12. There is someone I could talk to about important decisions in my life.
13. I have relationships where my competence and skill are recognized.
14. There is no one who shares my interests and concerns.
15. There is no one who really relies on me for their well-being.
16. There is a trustworthy person I could turn to for advice if I were having problems.
17. I feel a strong emotional bond with at least one other person.
18. There is not one I can depend on for aid if I really need it.
19. There is no one I feel comfortable talking about problems with.
20. There are people who admire my talents and abilities.
21. I lack a feeling of intimacy with another person.
22. There is no one who likes to do the things I do.
23. There are people who I can count on in an emergency.
24. No one needs me to care for them.

APPENDIX C: THE MEANING IN LIFE QUESTIONNAIRE

Please take a moment to think about what makes your life feel important to you. Please respond to the following statements as truthfully and accurately as you can, and also please remember that these are very subjective questions and that there are no right or wrong answers. Please answer according to the scale below:

Absolutely Untrue	Mostly Untrue	Somewhat Untrue	Can't Say True or False	Somewhat True	Mostly True	Absolutely True
1	2	3	4	5	6	7

1. I understand my life's meaning.
2. I am looking for something that makes my life feel meaningful.
3. I am always looking to find my life's purpose.
4. My life has a clear sense of purpose.
5. I have a good sense of what makes my life meaningful.
6. I have discovered a satisfying life purpose.
7. I am always searching for something that makes my life feel significant.
8. I am seeking a purpose or mission for my life.
9. My life has no clear purpose.
10. I am searching for meaning in my life.

APPENDIX D: HEALTH BEHAVIOR CHECKLIST

Please indicate how well each of the following behaviors describe your typical behavior.

Not at all Like me 1	A little like me 2	Can't say 3	Somewhat Like me 4	Very much Like me 5
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Preventative Health Behaviors

Wellness Maintenance and Enhancement

1. I exercise to stay healthy.
2. I gather information on things that affect my health by watching television and reading books, newspapers, or magazine articles.
3. I see a doctor for regular checkups.
4. I see a dentist for regular checkups.
5. I discuss health with friends, neighbors, and relatives.
6. I limit my intake of foods like coffee, sugar, fats, etc.
7. I use dental floss regularly.
8. I watch my weight.
9. I take vitamins.
10. I take health food supplements (e.g., protein additives, wheat germ, bran, lecithin).

Accident Control

11. I keep emergency numbers near the phone.
12. I destroy old or unused medicines.
13. I have a first aid kit in my home.
14. I check the condition of electrical appliances, the car, etc., to avoid accidents.
15. I fix broken things in my home right away.
16. I learn first aid techniques.

Risk Taking Behavior

Traffic Risk

17. I cross busy streets in the middle of the block.
18. I take more chances doing things than the average person.
19. I speed while driving.
20. I take chances when crossing the street.
21. I carefully obey traffic rules so I won't have accidents.
22. I cross the street against the stop light.
23. I engage in activities or hobbies where accidents are possible (e.g., motorcycle riding, skiing, using power tools, sky or skin diving, hang gliding, etc.).

Substance Risk

24. I do not drink alcohol.
25. I don't take chemical substances which might injure my health (e.g., food additives,

drugs, stimulants).

26. I don't smoke.

27. I avoid areas with high pollution.

Additional Items

28. I eat a balanced diet.

29. I get enough sleep.

30. I choose my spare time activities to help me relax.

31. I pray or live by principles of religion.

32. I avoid getting chilled.

33. I watch for possible signs of major health problems (e.g., cancer, hypertension, heart disease).

34. I avoid high crime areas.

35. I stay away from places where I might be exposed to germs.

36. I avoid over-the-counter medicines.

37. I wear a seat belt when in a car.

38. I brush my teeth regularly.

39. I get shots to prevent illness.

40. I drive after drinking.

APPENDIX E: THE BRIEF RCOPE

The following items deal with ways you coped with a negative event in your life. There are many ways to try to deal with problems. These items ask what you did to cope with this negative event. Obviously different people deal with things in different ways, but we are interested in how you tried to deal with it. Each item says something about a particular way of coping. We want to know to what extent you did what the item says. How much or how frequently. Don't answer on the basis of what worked or not - just whether or not you did it. Use these response choices. Try to rate each item separately in your mind from the others. Make your answers as true FOR YOU as you can. Circle the answer that best applies to you.

Not at all	Somewhat	Quite a bit	A great deal
1	2	3	4

1. Looked for a stronger connection with God.
2. Sought for God's love and care.
3. Sought help from God in letting go of my anger.
4. Tried to put my plans into action together with God.
5. Tried to see how God might be trying to strengthen me in this situation.
6. Asked forgiveness for my sins.
7. Focused on religion to stop worrying about my problems.
8. Wondered whether God had abandoned me.
9. Felt punished by God for my lack of devotion.
10. Wondered what I did not God to punish me.
11. Questioned God's love for me.
12. Wondered whether my church had abandoned me.
13. Decided the devil made this happen.
14. Questioned the power of God.

APPENDIX F: THE POSITIVE AND NEGATIVE AFFECT SCALE

This scale consists of a number of words that describe different feelings and emotions. Read each item and then mark the appropriate answer in the space next to that word. Indicate to what extent you generally feel this way, that is, how you feel on the average. Use the following scale to record your answers

Very slightly or not at all	A little	Moderately	Quite a bit	Extremely
1	2	3	4	5

1. Interested
2. Distressed
3. Excited
4. Upset
5. Strong
6. Guilty
7. Scared
8. Hostile
9. Enthusiastic
10. Proud
11. Irritable
12. Alert
13. Ashamed
14. Inspired
15. Nervous
16. Determined
17. Attentive
18. Jittery
19. Active
20. Afraid

APPENDIX G: THE SATISFACTION WITH LIFE SCALE

Below are five statements with which you may agree or disagree. Using the 1-7 scale below, indicate your agreement with each item by placing the appropriate number on the line preceding that item. Please be open and honest in your responding.

Strongly Disagree	Disagree	Slightly Disagree	Neither Agree Nor Disagree	Slightly Agree	Agree	Strongly Agree
1	2	3	4	5	6	7

1. In most ways my life is close to my ideal.
2. The conditions of my life are excellent.
3. I am satisfied with my life.
4. So far I have gotten the important things I want in life.
5. If I could live my life over, I would change almost nothing.

APPENDIX H: DEPRESSION ANXIETY STRESS SCALE-21 (DASS-21)

Please read each statement and circle a number 0, 1, 2 or 3 which indicates how much the statement applied to you over the past week. There are no right or wrong answers. Do not spend too much time on any statement.

The rating scale is as follows:

- 0 Did not apply to me at all
 - 1 Applied to me to some degree, or some of the time
 - 2 Applied to me to a considerable degree, or a good part of time
 - 3 Applied to me very much, or most of the time
-
- 1. I found it hard to wind down
 - 2. I was aware of dryness in my mouth
 - 3. I couldn't seem to experience any positive feeling at all
 - 4. I experienced breathing difficulty (e.g., excessively rapid breathing, breathlessness in the absence of physical exertion)
 - 5. I found it difficult to work up the initiative to do things
 - 6. I tended to over-react to situations.
 - 7. I experience trembling (e.g., in the hands)
 - 8. I felt that I was using a lot of nervous energy
 - 9. I was worried about situations in which I might panic and make a fool of myself
 - 10. I felt that I had nothing to look forward to
 - 11. I found myself getting agitated
 - 12. I found it difficult to relax
 - 13. I felt down-hearted and blue
 - 14. I was intolerant of anything that kept me from getting on with what I was doing
 - 15. I felt I was close to panic
 - 16. I was unable to become enthusiastic about anything
 - 17. I felt I wasn't worth much as a person
 - 18. I felt that I was rather touchy
 - 19. I was aware of the action of my heart in the absence of physical exertion (e.g., sense of heart rate increase, heart missing a beat)
 - 20. I felt scared without any good reason
 - 21. I felt that life was meaningless

VITA

EDUCATION **The University of Mississippi, MS**

- *Ph.D. in Clinical Psychology, Expected 2016*
Dissertation: Examination of the Relationship Between Religiosity and Psychological Well-Being: A Multiple Mediation Analysis
- M.A. in Clinical Psychology, May 2013
Thesis: The Role of Personality and Cultural Intelligence in the Desire to Study Abroad

Cincinnati Veterans Affairs Medical Center, OH, Expected Completion 2016
APA Accredited Pre-Doctoral Internship in Clinical Psychology, Health Track

M.A. in Psychology, 2007, Stephen F. Austin State University, TX

B.A. in Applied Psychology, 2004, Pennsylvania State University, PA

LICENSURE **Licensed Psychological Associate (2014)**

Kentucky Board of Examiners in Psychology, Frankfort, KY

EPPP, Passed at the doctoral level (2013)

Examination for Professional Practice in Psychology, Kentucky Board of Examiners in Psychology, Frankfort, KY

CLINICAL EXPERIENCE

2015-Present

Psychology Intern, Cincinnati Veterans Affairs Medical Center, Health Track, (Expected Completion July 2016):

- **Health Rotation (Major):** Primary Care-Mental Health Integration (PC-MHI) responsibilities including “warm handoffs,” goal-focused brief therapy, and collaboration with PACT members; Psychosocial evaluations for medical procedures (organ transplant, insulin pump, bariatric)
- **National Center for Organizational Development Rotation (Major):** Focus on building effective cultures, leaders, and teams through interventions to improve larger systems; Training in organizational development (OD) theory, practice, and application, including assessment, culture change, leadership, team-building, change management, and consulting
- **Spirituality Rotation (Minor):** Conduct spirituality evaluations to assess how individual veterans integrate spirituality into their treatment and recovery

Training Director: Brian Zinnbauer, Ph.D. **Supervisors:** Mindy Sefferino, Psy. D.; Sharyl Altum, Ph.D.; Constance Boehner, Ph.D.; Rakesh Lall, Ph.D.; Joseph Hansel, Ph.D.

Feb 2015-Jul 2015 **Adult Outpatient Therapist, NorthKey Community Care, Newport, KY**

- *Conducted intake interviews and 274 hours of individual therapy with 96 clients; Co-facilitated 183 hours of Women's Intensive Outpatient group therapy for substance abuse; Composed written intake reports and progress notes*

Supervisor: Mary Lieneck, Ph.D.

Feb 2013-Dec 2013 **Outcome Measurement Liaison (Volunteer Position), The University of Mississippi, United Way of Oxford and Lafayette County, MS**

- *Met with a United Way funded agency program director to assess outcome data needs for Family Crisis Services in Oxford, MS; Made recommendations for outcome data collection*

Supervisor: Kate Kellum, Ph.D.

Aug 2009-Dec 2013 **Contract Assessment Examiner (Internal Practicum), Psychological Assessment Center (PAC), The University of Mississippi, MS**

- *Administered and scored full batteries of standardized intellectual and personality tests, composed professional psychological evaluation reports, and provided feedback regarding psychological evaluations to 9 clients*

Supervisors: Stefan E. Schulenberg, Ph.D.; Scott A. Gustafson, Ph.D.

Aug 2009-Jun 2013 **Graduate Student Therapist (Internal Practicum), Psychological Services Center (PSC), The University of Mississippi, MS**

- *Conducted intake interviews and 156 hours of individual outpatient therapy for 14 clients; Attended weekly supervision meetings*
- *Therapy included Cognitive Behavioral Therapy, Behavioral Therapy, and Acceptance and Commitment Therapy*

Supervisors: Laura R. Johnson, Ph.D., Alan Gross, Ph.D., Kelly Wilson, Ph.D.

Aug 2010-Jun 2012 **Behavioral Consultant (External Practicum), Baptist Children's Village, Water Valley, MS**

- *Facilitated implementation of token economy system in a group foster home setting; Wrote individualized functional behavior plans for 14 residents; Provided consultation to staff members, including the campus director, case manager/counselor, and 10 house parents*

Supervisors: Randy Cotton, Ph.D., Alan Gross, Ph.D.

- Aug 2008-Jun 2010 **Mental Health Therapist (External Practicum), *Communicare, Pittsboro, MS***
- *Conducted intake interviews, composed written reports, and provided 629 hours of outpatient individual, family, and group therapy with 112 clients varying in age, ethnicity, and mental health diagnosis; Provided on-call crisis intervention on a monthly rotation; Provided 5 hospital consults for mental health evaluation at Baptist Memorial Hospital in Oxford, MS*
- Supervisors:** Dixie Church, M.A.; Pat Ledbetter, M.A., CMHT
- Aug 2008-Jan 2009 **Verification Specialist (Internal Practicum), *Office of Student Disability Services, The University of Mississippi, MS***
- *Reviewed psychological evaluation documentation for the purpose of verification of disability for academic accommodations, and conducted interviews to assess need for specific accommodations for 28 university students*
- Supervisor:** Stefan E. Schulenberg, Ph.D.
- Aug 2007-May 2008 **Research Assistant (Internal Practicum), *Psychology Department, The University of Mississippi, MS***
- *Assisted with data collection and data entry as needed*
- Supervisor:** Stefan E. Schulenberg, Ph.D.
- Oct 2005-Aug 2006 **Family Based Clinician, *Every Child, Inc., Pittsburgh, PA***
- *Provided in-home family therapy as part of a treatment team; Maintained an on-going caseload of 4-6 families; Held therapy sessions with each family 2-3 times per week; Utilized family modalities that accentuated coping skills and resources with emphasis on positive outcomes; Participated in bi-monthly clinical presentations with doctoral-level supervision*
- Supervisor:** Jim Cassels, M.A.
- Dec 2004-Oct 2005 **Permanency Specialist, *Every Child, Inc., Pittsburgh, PA***
- *Prepared children and families for foster placements, adoptive placements, or reunification with birth families; Identified and coordinated the delivery of formal and informal supports, community-based resources, and concrete items to assist families in parenting children who have special needs; Provided parent education, informal counseling, advocacy, emotional support, and transportation according to individual family needs*
- Supervisor:** Joy Smith, B.A.

- Aug 2003-May 2004 **Undergraduate Intern, Every Child, Inc., Pittsburgh, PA**
- *Prepared children for foster placements, adoptive placements, or reunification with birth families; Planned and assisted in execution of 3 adoptive family retreats*
- Supervisor:** Debra Thomas, B.A.

TEACHING EXPERIENCE

- Aug 2011-Apr 2013 **Graduate Instructor (Instructor of Record), The University of Mississippi, Oxford, Tupelo (May 2008-Jun 2008), and Desoto Campuses, MS**
- *Taught 5 semesters of Social Psychology at the undergraduate level*
 - *Duties included text book selection, syllabus construction, preparation and delivery of course material, creation and administration of examinations, assessment of student progress, meeting with students, and grade reporting*
- Supervisor:** Todd Smitherman, Ph.D.

- Aug 2008-May 2010 **Graduate Assistant, The University of Mississippi, MS**
- *Assisted with 4 study abroad pre-departure and re-entry workshops with a focus on cultural adjustment*
- Instructor:** Laura Johnson, Ph.D.

- Aug 2006-May 2007 **Teaching Assistant, Stephen F. Austin State University, TX**
- *Administered and graded exams; Held office hours for student assistance*
- Instructor:** Julie Brotzen, M.A

RESEARCH AND PRESENTATIONS

Luchkiw, T.K. (2010). Lott leadership exchange program 2008: A view of reconciliation. In Cook, V., & Jooste, C. (Eds). *Student reflections: race, religion, and reconciliation programs 2006-2009* (89-90). University, MS: University of Mississippi, Division of Outreach, 2010.

Luchkiw, T.K. (2010, August). *Study Abroad: A Life-Changing Experience?* Poster Session at the One Hundred Eighteenth Annual Convention of the American Psychological Association, San Diego, CA.

Johnson, L.R., Schwartz, K.D., Howe, T.R., **Luchkiw, T.K.**, Mobley, C.L., & Sawyer, R.J. (2010, August). *Finding and Creating Opportunities to Internationalize Graduate Education.* Roundtable Discussion at the One Hundred Eighteenth Annual Convention of the American Psychological Association, San Diego, CA.

Campbell, S.W. & **Luchkiw, T.K.** (2010). Recent Publications of Interest to Logotherapists. *The International Forum for Logotherapy*, 33, 58-63.

Luchkiw, T. K., & Schulenberg, S. E. (2009, June). *Logotherapy and study abroad: Personal growth in international learning experiences via discovery of meaning and values clarification*. Paper presentation at the Seventeenth World Congress on Viktor Frankl's Logotherapy, Dallas, TX.

Schnitzer, L. W., **Luchkiw, T. K.**, & Schulenberg, S. E. (2009, June). *The Diving Bell and the Butterfly: Viewing and discussing a movie of interest to logotherapists*. Workshop presented at the Seventeenth World Congress on Viktor Frankl's Logotherapy, Dallas, TX.

Campbell, S.W. & **Luchkiw, T.K.** (2009). Recent Publications of Interest to Logotherapists. *The International Forum for Logotherapy*, 32, 123-128.

Newell, K.E., **Luchkiw, T.K.**, Tran, J.K., & Heider, J.D (2009). *A Continuation in the Development of a New Scale to Measure Prejudice Against Christians*. Poster Session at the Tenth Annual Meeting of the Society for Personality and Social Psychology, Tampa, Fl.

Wood, S. & **Luchkiw, T.K.** (2008). Recent Publications of Interest to Logotherapists. *The International Forum for Logotherapy*, 31, 121-125.

Luchkiw, T.K. (2008). Movies of Interest to Logotherapists. *The International Forum for Logotherapy*, 31, 116-118.

Wood, S., Melton, A.M.A. & **Luchkiw, T.K.** (2008). Recent Publications of Interest to Logotherapists. *The International Forum for Logotherapy*, 31, 59-64.

Luchkiw, T.K. (2008). Movies of Interest to Logotherapists. *The International Forum for Logotherapy*, 31, 52-54.

Luchkiw, T.K., Newell, K.E., Tran, J.K., & Heider, J.D (2008). *The Development of a New Scale to Measure Prejudice Against Christians*. Poster Session at the Ninth Annual Meeting of the Society for Personality and Social Psychology, Albuquerque, NM.

De Nadai, A., Mateescu, M., **Luchkiw, T.K.**, Taylor, J., & Poe, C. (2007). *Mental Health Knowledge in the college population*. Poster Session at the Fifty-Third Meeting of the Southwestern Psychological Association, Ft. Worth, TX.

Harnish, R., Karelitz, J., **Luchkiw, T.K.**, Guy, K., & Lach, J. (2004). *Understanding the Needs and Desires of Stakeholders: A Qualitative Study*. Poster Session at the Pennsylvania State University Undergraduate Research Fair, University Park, PA.

AFFILIATIONS/MEMBERSHIPS

2014-Present Cincinnati Academy of Professional Psychology (CAPP), Student Affiliate

2014-Present Ohio Psychological Association of Graduate Students (OPAGS), Executive Committee Academics/Research Chairperson

COMMUNITY INVOLVEMENT

- 2015-Present **College- and career-age Sunday school class co-facilitator**, *Clough Pike Baptist Church, Cincinnati, OH*
- Jul 2015 **Cultural training facilitator for short-term mission work**, *Clough Pike Baptist Church, Cincinnati, OH*
- Sep 2014 **Health Fair Volunteer, representative for the Ohio Psychological Association of Graduate Students**, *Ohio State University Psychology Career, Internship, and Graduate School Fair, Columbus, OH*
- Aug 2014 **Health Fair Volunteer, representative for the Ohio Psychological Association**, *New Directions Career Center, Columbus, OH*
- Jul 2014 **Guest Blogger, Ohio Psychological Association Committee on Social Responsibility**, *5 Ways to Boost Clients' Life Satisfaction by Using Their Religious Values*, <http://opapic.blogspot.com>
- May 2014 **Legislative Day Participant and Health Fair Volunteer**, *Ohio Statehouse, Columbus, OH*
- 2012-2013 **Student Representative to the Faculty**, *The University of Mississippi Psychology Department, MS*
- Jun-2012 **Medical Mission Team Member in Tarapoto, Peru**, *First Baptist Church, Oxford, MS*
- Dec 2011 **Documentary Appearance**, *Divided We Stand: 18 Students, 3 Countries, 1 Incredible Journey*, *Rachel Ford (Producer), Mississippi Public Broadcasting, Jackson, MS*
- 2003 **CIS Kids' Academy Program Facilitator**, *math and reading skills after-school program, Tarentum, PA*
- 2002-2004 **Freshman Orientation Leader**, *Pennsylvania State University, Upper Burrell, PA*

SPECIALIZED TRAINING/LEARNING EXPERIENCES

- 2015 **Workshop: See Me as a Person**, *Therapeutic Relationship Training for Primary Care Staff, Cincinnati Veterans Affairs Medical Center, OH*
Facilitator: Sharyl Altum, Ph.D.
- 2015 **Workshop: Motivational Interviewing (MI) and Motivational Enhancement Therapy (MET)**, *Cincinnati Veterans Affairs Medical Center, OH*

Facilitators: Sharyl Altum, Ph.D.; Jonathan Steinberg, Ph.D., Teri Ann Bolte, Ph.D.

- 2014 **International Sojourn (Israel)**, *Study of history and culture in Israel*
Facilitators: Eric Hankins, Ph.D.; George Ross, D.Min.
- 2013 **Seminar: Acceptance and Commitment Therapy (ACT)**, *In-depth examination of ACT processes in treatment*
Instructor: Kelly G. Wilson, Ph.D.
- 2010 **Seminar: Clinical Psychophysiology**, *Introduction to biofeedback and neurofeedback techniques in treatment*
Instructor: Scott A. Gustafson, Ph.D.
- 2010 **Seminar: Multicultural Psychology**, *Culturally competent treatment practices*
Instructor: Laura R. Johnson, Ph.D.
- 2009 **Workshop: Mississippi Civil Commitment Laws and Procedures**, *Communicare, Oxford, MS*
Facilitator: Michael D. Roberts, Ph.D.
- 2009 **Training: Mental Health Consultation**, *HR AHP Net-Learning, Baptist Memorial Hospital, Oxford, MS*
- 2008 **Graduate Exchange/International Sojourn**, *Reconciliation, Religion, and Race in Comparative Dialogue in the United States, Northern Ireland, and South Africa; University of Mississippi, University of Ulster, Nelson Mandela Metropolitan University*
Facilitators: Charles Reagan Wilson, Ph.D.; Liam Kelly, Ph.D.
- 2005-2006 **Training: Family-Based Mental Health Services**, *Western Psychiatric Institute and Clinic (WPIC), Pittsburgh, PA*
- *Family Based Mental Health Supervision Clinical (monthly); Bereavement in Children; Use of Self: Self-Development, Stress Management and Ethics; Adolescent Development and Current Dilemmas; Pre/Post Placement; Siblings: Working with Subsystems; Treatment of Traumatized Child/Family: Sexual Abuse and Neglect; Treating School Based Problems; Loss and Bereavement: Part 2 – The Impact of Special Needs Children in Families; Loss and Bereavement: Part 1 – The Impact of Physical Illness on the Family (Co-Morbidity); Family Based Mental Health Start-Up*
- 2005 **Workshop: Fetal Alcohol Spectrum Disorders and Promoting Healthy Attachments**, *Wheeling, WV*
Presenter: Gregory C. Keck, Ph.D.

- 2004 **Workshop: Judicial Affairs Hearing Board Training for Violence Against Women on Campus, Pennsylvania State University, PA**
- 2004 **Workshop: Statewide Adoption Network Southwest PA Training and Support Network**
- *Who the Parents Are, Who the Children Are, Parenting, Attachment, Child Development, Resources, Crisis Management*
- Facilitators: Diane Gieraltowski, M.A.; Joann Westover, M.S.W. Debra Thomas, B.A.
- 2004 **International Sojourn (Spain), Study of history and culture in Spain**
Facilitator: Maria A. Franco de Gómez, Ph.D.

HONORS/AWARDS

- 2013 Nomination for Graduate Instructor Excellence in Teaching Award
- 2007-2010 Graduate Fellowship, The University of Mississippi
- 2008 Lott Leadership Graduate Exchange Scholarship Recipient
- 2005 Psi Chi Honor Society Member
- 2004-2005 Charles H. Booth, Jr. Trustee Scholarship Recipient
- 2004 Phi Kappa Phi Honor Society Member
- 2003-2004 Academic Excellence Award
- 2002, 2003 Recognition of Superior Academic Achievement, presented by the College of Liberal Arts
- 2001-2004 Pennsylvania State New Kensington Dean's List
- 2002-2003 Who's Who Among Students in American Universities and Colleges
- 2001 Jerome-Little Endowed Scholarship Recipient
- 2001 Blue and White Scholarship