THE CORRESPONDENCE OF ATTACHMENT DIMENSIONS TO PRAYER STYLES

AMONG UNDERGRADUATE STUDENTS

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Abstract

Despite the fact that prayer is a daily practice for many Americans, and is considered by some the heart and soul of spirituality, relatively little research has been conducted to understand the individual differences of people's prayer styles. A previous study found that people who have higher levels of avoidance attachment are less likely to engage in prayers that are designed to facilitate a closer relationship with God (e.g., Meditative and Colloquial). It also found that people who have higher levels of anxious attachment are more likely to engage in help seeking types of prayers (e.g., Petitionary). Since the study, two additional prayer models have been developed making it beneficial to reexamine this relationship. One-hundred and ninety nine undergraduate students in psychology courses at Indiana State University received the three prayer style measures (Prayer Questionnaire, Inward Outward Upward Prayer Model, and Multidimensional Prayer Inventory), the Relationship Scale Questionnaire (RSQ), and other related variables (e.g., demographics, student stress scale, and early religious involvement). A hierarchal regression analysis found that none of the four prayer styles that were believed to facilitate a relationship with God showed a negative relationship with avoidance attachment. Two of the three help seeking prayer styles positively correlated with anxious attachment, with the magnitude of the relationship being small. Both prayer styles that significantly correlated dealt with asking for material things, with non-significant prayer style dealing with more impersonal issues. Overall, the results showed only adequate support that attachment and prayer style relate in a meaningful way. Age and race appear to be moderating variables for many of the prayer styles. Implications of the results will be discussed.

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Introduction

Since at least the beginning of recorded history, mankind has sought to connect to God. In fact, some have suggested that humans could be called *Homo Religious* as much as *Homo Sapiens (*Armstrong, 1993; Spong, 2005). As a result, humans participate in numerous spiritual practices including singing, chanting, spiritual readings, dancing, and ceremonies, among many other rituals. Yet, according to William James (1902), within the major monotheistic traditions (i.e., Christianity, Islam, and Judaism) prayer is the most beneficial way for humans to connect with God. Friedrich Heiler, a popular Protestant historian, also emphasized the importance of prayer, describing it as a "living communion of man with God and into a personal relation with Him" (Heiler, 1932, p. 362).

Most individuals in the United States pray, as recent polls indicate that nearly 90 percent of Americans pray, a figure that has remained steady for the past fifty years (Baker, 2008). Baker (2008) also found that between 50 and 60 percent of those polled pray on a daily basis. Despite the frequency of prayer and its important role in many people's lives, relatively little is known empirically regarding this practice, such as what people pray about and why individual differences in prayer exist (Bader, Mencken, & Froese, 2007; Ladd & Spilka, 2002; Laird, Snyder, Rapoff, & Green, 2004).

There has been a growing interest in the study of prayer within psychology over the past few decades. However, prayer continues to receive less research than other spiritual practices, such as meditation (Miller & Thoresen, 2003). The available research suggests that prayer is a complex process, consisting of multiple dimensions (Poloman & Pendleton, 1991; Bader, Mencken, & Froese, 2007). For example, three prayer measures conceptualize prayer as a

collection of different styles. These three prayer measures are the Prayer Questionnaire (PQ), the Multidimensional Prayer Inventory (MPI), and the Inward Outward Upward Prayer Model (IOUPM) (Ladd & Spilka, 2002; Laird, Snyder, & Rapoff, 2004; Poloman & Pendleton, 1991).

All three prayer measures indicate that styles of prayer relate differently to a variety of psychological variables (Ladd & Spilka, 2002; Laird, Snyder, & Rapoff, 2004; Poloma & Pendleton, 1991). For instance, the PQ finds that prayer experience and the type of prayer is a better predictor of subjective wellbeing than the frequency of prayer (Poloma & Pendleton, 1991). When using the MPI, the results from Laird and colleagues (2004) indicate that in patients with arthritis, those who endorse fewer confessional prayers (admitting one's faults) report fewer health concerns (Laird et al., 2004). Their findings also indicate that prayers of thanksgiving (expressing gratitude for life's circumstances) relate to higher levels of subjective wellbeing. Finally, when using the IOUPM, results from college students indicate that different prayer styles correlate to attitudes toward death, contentment, and a need for structure (Ladd & Spilka, 2006). While the results from the few studies are promising, more research is needed to assess these measures' utility.

An important goal for the present study is determining why individual differences in prayer exist. If different styles of prayer exist, and if some appear more beneficial than others, it would seem reasonable to expect everyone to pray in a manner that is most beneficial. However, as indicated earlier, this is not the case; people pray in different ways, with differing results. A potential explanation for why individual differences in prayer styles exist could from how an individual connects to her caregiver(s) (i.e., attachment theory; Byrd & Boe, 2001).

While prayer and religion did not benefit from extensive research during most of the twentieth century, the psychodynamic field showed significant interest in religion. For example,

in several books, Freud (1927, 1930, 1938) wrote about the powerful impact that religion has in civilization and how people use it to project their unconscious. Another famous psychoanalyst, Carl Jung, dedicated an entire book to the subject (Jung, 1938), and is considered one of the most spiritually oriented psychological writers (Roderick, 2006).

One theory developed from the psychodynamic framework that has gained significant influence within the psychology of religion field is attachment theory. The foundation of attachment theory is that, for evolutionary reasons, infants make strong and unique bonds (i.e., attachments) with their caregiver (Bowlby, 1969, 1973, 1980). This occurs because of the need to promote survival by being with someone who is stronger and wiser. These attachments have a significant influence on how individuals perceive themself and others (i.e., parents, peers, God) for the rest of their lives. Attachment theory has been empirically studied across a wide range of topics. In the psychology of religion, attachment theory assists in explaining why some individuals experience sudden or gradual religious conversions, why some individuals believe in God, and how individuals perceive God (Kirkpatrick, 2005).

While attachment theory's application in religion has received much attention, to date only one published study has examined the relationship between prayer and attachment. The study shows a significant negative relationship between avoidant attachment dimension (e.g., staying away caregivers or romantic partners; difficulty with intimacy) to Meditative and Colloquial prayers on the PQ (Byrd & Boe, 2001). Meditative and Colloquial prayers, in particular, are believed to help facilitate a relationship with God. The study showed that anxious attachment dimension (e.g., needing others for approval and satisfaction) is positively related to Petitionary prayer, where one requests to God that physical needs be met. These results are consistent with the correspondence hypothesis, which shows that people who have an avoidant

attachment with their caregivers will have a similar attachment to God. Thus, these individuals have less interest in engaging in prayer styles designed to develop a closer relationship to God (Granqvist, Ivarsson, Broberg, & Hagekull, 2007; Kirkpatrick, 2005). Also, those with greater anxious attachment for their caregivers will be more prone to seek God to help rectify distressing situations.

The purpose of the current study is to examine the relationship between the three multidimensional prayer measures and the two attachment dimensions (anxious and avoidant). This study utilizes the same logical framework of Byrd & Boe (2001) and the correspondence hypothesis. This study will also statistically account for variables that are shown to significantly influence prayer or attachment styles: age, gender, race, early religious involvement, and student stress.

Prayer

Background. William James, a founding father of American psychology, called prayer "the very soul and essence of religion" (James, 1902, p. 365). This observation was made during a time when prayer was a topic of much psychological interest (Ladd & Spilka, 2002; Pratt, 1910; Strong, 1909). However, soon after the turn of the twentieth century, relatively little research was conducted on religion and prayer. A possible reason for the decline is psychology's materialistic perspective, which holds that spirituality cannot, or should not, be studied because it is beyond the senses (Miller and Thorsen, 2003). However, since the 1990s, there has been an increase in the study of religion and prayer as researchers have recognized that religion and it's related constructs (e.g., prayer) can be appropriately measured and that such constructs are an important part of an individual's life. For instance, 95 percent of adults express a belief in God (Hoge, 1996), with almost 90 percent identifying with a certain religion, and about 55 percent

attending religious services multiple times a month (Bader et al., 2007). In addition, about 85 percent report that religion is very important or fairly important in their lives (Gallup Poll, 2001).

As for prayer, national polls consistently report almost 90 percent of American adults engage in prayer, a figure that has remained relatively stable for the past 50 years (Gallup Poll, 1987; Baker, 2008). In addition, between 50 and 60 percent of people pray daily.   Daily prayer even occurs among 20 percent of atheists and agnostics (Bader et al., 2007; Baker, 2008; Greeley, 1996). Acknowledging this reality, there has been a burgeoning of research examining the relationship of prayer to many psychological variables. Increased amount of prayer is linked to an increase in individual's sense of a purpose in life, enhanced marital satisfaction, existential well-being, religious satisfaction, increased hardiness, and recovery from alcohol dependence (McCullough, 1995). Increased prayer frequency also relates to hope, positive personality characteristics, and physiological benefits (Snyder, 2000). However, increased prayer has also been negatively related to mental health constructs (e.g., stress and coping), thus indicating an inconsistency in the results (Masters & Spielmans, 2007).

However, studies have typically evaluated prayer in simple terms, by measuring only the frequency of occurrence (Laird et al., 2004; McCullough, 1995) even though, ironically, research indicates that Americans have a very diverse set of beliefs, and engage in a wide range of prayer styles (Bader et al., 2007; Baker, 2008; Goldman, 1991). Prayer is, indeed, a complex and multidimensional construct (Ladd & Spilka, 2002; Laird et al., 2004; Levin & Taylor, 1997; Pargament et al., 1990), yet few studies have examined prayer in terms of the different dimensions or styles (Hill & Hood, 1999; Ladd & Spilka, 2002; Laird et al., 2004); in other words, studying the different prayer styles that have shown to exist.

Of the published studies that have examined prayer with a focus on different prayer styles, research has found that mental health, reports of pain, and happiness, are linked just as much, if not more, with an individual's prayer style than with how frequently one prays (Maltby, Lewis, & Day, 2008; Poloma & Pendleton, 1991). These findings suggest that measuring only prayer frequency is limited, as such analysis assumes that prayer is a ubiquitous process; thus, failing to assess the differences between the various styles of prayer (Masters, 2007). Elucidation of this idea will come from further examination of the three existing prayer measures, namely: the Prayer Questionnaire, the Inward Outward Upward Prayer Model, and the Multidimensional Prayer Inventory.

Prayer Questionnaire. The Prayer Questionnaire (PQ) is the first measure to conceptualize prayer as having different styles or dimensions (Poloma & Pendleton, 1989). Fifteen conceptually derived statements of prayer activity were presented through a phone survey to participants in Akron, Ohio. The statements result in a four-factor solution: colloquial (conversing with God), petitionary (requesting God to meet certain materialistic needs), ritual (reciting prepared prayers available from prayer books, other written sources, or memory), and meditative (contemplation, quieting one's mind). The measure is included in Appendix A.

Poloma and Pendleton (1991) found that prayer experience was a better predictor of subjective wellbeing than prayer frequency. Also, the prayer styles significantly related to most of their measures concerning subjective wellbeing. Specifically, meditative prayer positively correlated to existential wellbeing and religious satisfaction, colloquial prayer positively related to happiness, and ritual prayer negatively related to negative effects. Poloma and Pendleton (1991) also found that prayer frequency has mixed results on subjective wellbeing. Specifically,

frequency of prayer related only weakly to religious satisfaction, and even negatively related to life satisfaction and happiness when statistically accounting for other religious factors.

A more recent study from a British community sample shows further support for how certain prayer styles relate to wellbeing. The study found a significant correlation between ritual prayer, meditative prayer, and prayer experience with better mental health (Maltby, Lewis, & Day, 2008). In addition, meditative prayer and prayer experience, along with frequency of prayer accounted for significant variance in subjective wellbeing. The prayer styles within the PQ also correlated to attachment dimensions (Byrd & Boe, 2001). Thus, the early research on prayer styles using the PQ indicates that how someone prays relates to their wellbeing and even attachment style. Nevertheless, there has been too little research to draw any firm conclusions. In addition, there is also a concern about the internal consistency of the ritual prayer on the PQ, as the Cronbach's alpha was quite low: 0.59 (Byrd & Boe, 2001; Maltby, Lewis, & Day, 2001). This essentially reduces the measures from four to three prayer styles.

Inward, Outward Upward Prayer Model. A more recent prayer model is the Inward Outward Upward Prayer Model (IOUPM) (Ladd & Spilka, 2002), which is theologically based upon a book by Richard Foster (1992), a Quaker minister. In the book, Foster envisions three general prayer themes that are based upon the direction of the prayer: inward prayer directs towards oneself; upward prayer directs towards God; and outward prayer directs towards the world. Foster then broke down these 'directions of prayer' into more specific forms, which he writes about in greater detail.

Ladd and Spilka (2002) utilized this conceptualization of prayer developed by Foster (1992) to lay the foundation of their model. They believed that Foster's outline of prayer was useful for several reasons. First, unlike Poloma and Pendleton (1991), it was theologically

based, as Foster used theological reasoning and religious experience to develop the prayer conceptualization. Second, Ladd and Spilka valued the framework of prayer as a purpose to deepen relationships towards others and God and increase self-understanding. Thus, at least from a conceptual perspective, the model could be useful in referencing certain psychological theories (e.g., attachment theory). Third, Foster viewed prayer at different levels from the most general (overall prayer), to three directions of prayer, to specific types of prayer. This provides the flexibility of viewing prayer both as a single concept, which is how it is traditionally viewed in research literature, and viewing prayer within different dimensions or styles. In other words, the IOUPM recognizes prayer as a distinct act, but acknowledges distinctions within it.

Ladd and Spilka (2002) developed the IOUPM scale by taking words or phrases that Foster frequently used in his book to describe each prayer type he wrote about, while also adding additional words from previous studies. Consistent with what Foster (1992) conceptualized, Ladd and Spilka (1992, 1996) found three general levels of prayer: primary, second and third-order factors. The primary factor consists of eight specific forms of prayer: Intercession (asking for help for other people), Examination (confessional; examining oneself), Suffering (agonizing with others), Tears (expressing sadness and grief), Rest (meditative/contemplative), Sacrament (engaging in rituals), Radical (seeking to be revolutionary), and Petition (asking for things I need). Many of these factors appear consistent with Foster's specific types of prayer (Foster, 1992). For example, Foster writes about prayers that express one's grief and sorrow, meditative types of prayer, and prayers making certain requests.

The second-order factor was consistent with Foster in that there are three general themes of prayer, which are based upon the individual's cognition rather than the direction of prayer. Ladd and Spilka (2002) title the three themes of prayer as Internal Concerns, Embracing

Paradox, and Bold Assertion. In relation to the first order factors, Internal Concerns significantly

relates to Intercession, Suffering, and Examination forms of prayer. Embracing Paradox

significantly relates to Sacrament, Rest, and Tears forms of prayer, and Bold Assertion

significantly relates to Radical and Petition forms of prayer. The third order factor consists of

one general construct of prayer (i.e., prayer as a single construct). This finding is also consistent

with Foster's conceptualization.   See Figure 1 to see how the three factors interrelate and

correlate with one another. The measure is included in Appendix B.

In a follow-up study, Ladd and Spilka (2006) show that the IOUPM has relatively good

construct validity, as is it correlates with a variety of constructs from social psychology and

psychology of religion (i.e., sex, age, general religiosity, need for structure, styles of coping,

contentment, attitudes towards death, and paranormal beliefs). More recent studies look at the

ways in which prayer styles relate to the Big Five and personality constructs (Ladd, Ladd,

Ashbaugh et al., 2007; Ladd, Ladd, Harner et al., 2007). The relationships between the Big Five

and the IOUPM are modest. However, the study uses a small sample size ($N = 70$) making it

difficult to achieve significance and to make confident inferences about their relationship. The

study examining personality constructs with the IOUPM finds Internal Concerns and Embracing

Paradox correlates significantly on a variety of personality measures such as hope, gratitude,

open mind, while Bold Assertions shows less of a relationship.

The specific prayer styles in the IOUPS show some similarity when compared to the

content of the statements or words to some of the prayers on the PQ. Both rest and meditative

appear to measure similar modes of prayer on both the IOUPM and PQ, respectively. The rest

prayer on the IOUPM consists of words or phrases such as "quietude," "silence," "stillness," and

"private experiences." The meditative prayer on the PQ consists of statements "thinking quietly

about God," "reflecting on scripture," "spending time worshiping God," "listening to God for His prayers," and "feeling God." The two models also show similarity between the Petitionary prayer on the PQ and the Petition prayer on the IOUPM. Specifically, Petitionary prayer from the PQ consists of statements of "asking for material things for oneself" and another one asking for "material things for another." The petition prayer for IOUPM consists of statements "asking for things that I needs," "making personal appeals," "asking that physical needs be met," and "requesting material things." These prayers indicate a similarity or possible overlap in measuring a construct. Thus, it is reasonable to assume that similar relationships would occur when comparing the two prayer measures to same construct (e.g., attachment style).

At the same time, the two measures have clear differences. The colloquial prayer on the PQ has statements that overlap with different prayer styles on the IOUPM. Specifically, the colloquial prayer consists of statements of "thank God for his blessings," "ask God to forgive you for your sins," "ask God to lessen world suffering," and "spend time telling God how much you love him." These statements overlap the IOUPM prayers of Intercession (asking God to lessen the suffering of someone else) and somewhat with Examination (evaluation of one's inner life of judging oneself). However, statements of expressing thanks and love towards God have no apparent overlap. For example, statements about thanksgiving and love towards God do not coincide with any of the prayer styles in the IOUPM. Finally, the IOUPM has prayer styles, such as Tears, Suffering, and Radical, that do not relate to any of the prayer styles on the PQ. This makes it challenging to ascertain how the prayer styles from the PQ and IOUPM relate to separate constructs.

There are concerns about the IOUPM. The model is complex, as it consists of three different "levels" or factors, and the primary factor has eight different prayer styles. This can

make interpreting how the measure relates to other constructs a complex and difficult undertaking. Thus, while the IOUPM is able to assess many different forms of prayer, it lacks the parsimony that is useful in science. An additional concern is that some of the prayer styles highly correlate with each other indicating that they may be measuring the same construct. However, this appears to be true more so for the three general themes of prayer (i.e., Bold Assertions, Embracing Paradox, and Internal Concerns) rather than the eight specific styles of prayer (i.e., Petition, Rest, etc.).

  Multidimensional Prayer Inventory. The most recent multidimensional prayer model called the Multidimensional Prayer Inventory (MPI) is a 21-item measure that has five prayer styles (Laird et al., 2004). These prayer styles are theologically based upon a historic Christian model of prayer known as ACTS: Adoration, Confession, Thanksgiving, and Supplication. *Adoration* is a type of prayer where the focus is on the worship and praise of God, without reference to specific circumstances or needs; *Confessions* involves acknowledging one's faults, misdeeds or shortcoming (i.e., sins) to God; *Thanksgiving* involves expressing gratitude for life circumstances to God; and *Supplication* requests for God to intervene in specific life events for oneself or others. The authors also included a prayer they called *Reception*, because the person is quietly waiting and receiving God's wisdom, presence, and guidance. This prayer is akin to the contemplative and meditative types of prayer, and was added due to the ample amount of research done in this area. See Appendix C for the measure.

  Laird and colleagues (2004) have support in their five-factor model in both a college sample and a sample of patients with rheumatoid arthritis or osteoarthritis. In addition, both populations demonstrate good internal consistency for all five types of prayer. All forms of prayer are used frequently; however, prayers of adoration are the most popular for individuals

with arthritis, while confessions occur the least frequently for both students and patients. The MPI indexes strongly correlate to intrinsic religious orientation, attesting to the measure's good convergent validity and reaffirming prayer as a good predictor of religiosity. It also shows good discriminate utility on a variety of constructs (i.e., hope, religious orientation, affect, and subjective impact). These results provide further support for the importance of assessing prayer styles, and for the notion that prayer is not a singular construct.

The MPI appears to include prayer styles similar to those found in both the IOUPM and PQ. The Supplication prayer style appears somewhat similar to the Petition prayer style on the IOUPM and the Petitionary prayer on the PQ, as all of the prayer styles make certain requests. However, Petition prayer style from the PQ and Petitionary prayer style from the IOUPM request for physical or material needs to be met, whereas the Supplication prayer on the MPI does not specify the type of request of God. This makes the Supplication prayer broader and, thus, it may be slightly different. Second, similar to both the Meditative style on the PQ and the Rest style on the IOUPM, the MPI's receptive prayer is a more contemplative aspect of prayer. Here the person is not actively seeking or requesting something, but rather taking a more reflective role. Usually during this form of prayer the person is trying to further develop their relationship with God.

Similarly, in the PQ and IOUPM, colloquial prayer correlates to several prayer styles on the MPI. Specifically, the Confession and Thanksgiving prayer styles on the MPI may correlate to the Colloquial prayer on the PQ, as the Colloquial prayer has a statement about asking God to forgive sins and a statement about spending time loving God. This makes it challenging to know how well those prayer styles will relate. It appears relative to the MPI the Colloquial prayer style is measuring multiple types of prayer.

The major issue with the MPI is there is very limited research on it, and, thus, more research is needed to assess its reliability, validity, and relationship to other psychological constructs.   A second issue, as acknowledged by the researchers, is that the vocabulary of the MPI could be simpler for those with lower reading ability.

Attachment Theory

Background. The concept of attachment theory was developed by John Bowlby, who felt that the psychoanalytic theory needed to be updated by merging it with insights from developmental psychology, evolution, and ethnology theory (Bowlby, 1969, 1973, 1980). In his observations, he found that infants develop an intense and unique connection to their caretaker (most often the mother), which he termed as "an attachment." According to Bowlby, the attachment has a biological foundation stemming from natural selection. The attachment figure (i.e., caretaker) protects the helpless infant from environmental dangers (e.g., predators, hazardous situations) and, thus, allows the child to survive long enough to carry on the family genes. The sense of security and safety provided by the attachment figures also has tremendous psychological implications. It provides infants with the confidence to explore their environment and reassurance to return to a safe object (e.g., the caregiver) when frightened or distressed.

The first individual to empirically examine attachment theory was Ainsworth, who used a technique that is now commonly called the Strange Situation (Ainsworth, 1969). Within the Strange Situation, Ainsworth found three general attachment styles, which are called secure, avoidant, and ambivalent/resistance. The secure infant uses her mother as a secure base by showing signs of missing her mother when she leaves, and greeting the mother with a smile, vocalization, or gesture upon her return. The avoidant infant explores without displaying signs of affection to her mother. When the mother leaves the room, the child demonstrates little

distress and when the mother returns, the child actively avoids her. The anxious or ambivalent child is visibly distressed and fails to engage in exploration when her mother leaves the room and when her mother returns, the child typically demonstrates anger, rejection, and tantrums. A fourth attachment style called disorganized was later conceptualized (Main & Solomon 1986). The disorganized style is characterized by lacking observable goals and explanation for the infant's behaviors.

According to Ainsworth (1969), the crucial variable for the attachment style is how consistent the attachment figure is in meeting the child's needs. For the secure infant, the attachment figure consistently meets the infant's needs, resulting in a well-functioning attachment style. The child goes to the attachment figure when experiencing distress and explores the environment after being comforted. The attachment figure, in turn, allows the child to explore a safe environment, while also providing nurturance and protection in a time of stress and uncertainty. The anxious child seems to have an attachment figure that inconsistently meets her needs and establishes a very sensitive attachment style. This child will easily experience distress out of fear that the attachment figure will not respond when the child is lacking a sense of safety and security. According to Bowlby (1973) and Ainsworth, this fear arises from the attachment figure inconsistently providing a sense of safety and security for the child. Finally, the avoidant child perceives the attachment figure as consistently rebuffing attempts to gain proximity and psychological comfort when called upon. Here the attachment figure frequently does not provide a sense of safety and security for the child; thus, the child does not feel that the caregiver can provide much support. In turn, the avoidant child activates the attachment process under only the most severe cases, even though physiological measures reveal that the child is in fact experiencing distress (Sroufe & Waters, 1977).

This theoretical link between the attachment figure's behavior and the child's pattern of attachment is what Bowlby (1973) terms Internal Working Model (IWM). IWMs are based upon repeated experiences where the child develops internal sets of beliefs and expectations (schemas) about the responsiveness and availability of her attachment figure. These IWMs guide subsequent cognitions, behaviors, and emotions in relation to self and others. It determines the degree the individual trusts others to be helpful, and to what level the individual's internal sense of self is worthy of love, care, and protection.

Finally, attachment is a unique process that is different from those of close bonds, such as close friends, co-workers, and siblings (Goldberg, 2000). There are five characteristics that make an attachment relationship unique (Ainsworth, 1985): (1) the attached person seeks proximity to the attachment figure, particularly when frightened or alarmed, (2) the attachment figure provides care and protection, (3) a sense of security, (4) the threat of separation from the attachment figure causes anxiety in the attached person, and (5) the loss of the attachment figure would cause grief in the attached person.

Adult attachment. Bowlby (1969) believes that the early attachment process and IWMs developed in early childhood remain an important aspect in adulthood. He often uses the phrase "from cradle to grave" to articulate the lasting effects of attachments. Therefore, IWMs provide the cognitive and emotional building blocks from which the individual conceptualizes herself, others, and the world for the rest of her life. Therefore, these IWMs should be relatively stable across time and different types of relationships (e.g., romantic partner, friends, colleagues, etc.).

There are several adult attachment measures to assess the idea that IWMs and attachment styles are stable across time and situation (Goldberg, 2000). There is the Adult Attachment Interview (AAI). The AAI is a time intensive, semi-structured interview that focuses on

childhood experiences with attachment figures (Main, Kaplan, & Cassidy, 1985). The interviewee is asked (1) to provide a general description of her relationships with her parent(s) and examples that support those descriptions, (2) describe the parent(s) reaction to illness, hurt, and emotional upset, (3) explain why she thinks the parent(s) behaved in the way that they did, and (4), if appropriate, to discuss salient losses and traumas. The interview is transcribed verbatim and a series of specific ratings are developed and used to arrive at a classification that is based on the narrative coherence of the interview.

The AAI is theoretically based upon the categories developed in the Strange Situation, thus, creating three different attachment categories: secure, dismissing, and preoccupied. See Figure 2 to see how the categories for AAI match with the categories from the Strange Situation. The advantage of the AAI is that it provides a comprehensive overview regarding the individual's childhood experiences and perceptions, making it a highly desirable attachment measurement within clinical research and settings (Goldberg, 2000). However, the AAI is time and labor intensive. It takes approximately an hour and a half for the interview and seven to ten hours to transcribe. The AAI also requires prolonged and intensive training in order to accurately and consistently code the data. These limitations make it difficult to use the AAI in a large research sample. As of several years ago only one study had used the AAI within the context of religion (Kirkpatrick, 2005).

One major contribution of the AAI to attachment theory is how it supports Bowlby's belief that the individual's attachment style remains relatively stable. There are several studies that initially used the Strange Situation while observing individuals as infants, and then later used the AAI when they were adults to assess if their attachment style remained the same. A 20-year longitudinal study found that 64 percent of the participants remained in the same

attachment style (Waters, Merrick, Treboux, Crowell, & Albersheim, 2000). Thus, participants who adopted a secure attachment style retained a secure attachment style, while participants who were avoidant as infants tended to become dismissive, and participants who were resistant tended to become preoccupied (Note: As Figure 1 indicates, avoidant on the Strange Situation equates to dismissive on the AAI, and resistance equates to preoccupied on the AAI). For participants who did not experience any major negative life events, the correspondence between the Strange Situation and AAI attachment style increased to 78 percent. This result is comparable to a 17-year longitudinal study that found a 77 percent stability in attachment style (Hamilton, 2000).

Hazan and Shavor (1987) developed another adult attachment measure that used the attachment styles from the Strange Situation as its foundation, but it is a self-report measure that consists of three separate paragraphs. Each paragraph's intent is to represent what the authors believe to be adult versions of the child attachment styles (secure, anxious, and avoidant). The participant is simply asked to indicate which attachment style best describes them.

Another adult attachment measure is the Relationship Questionnaire (RQ) (Bartholomew & Horowitz, 1991). The RQ is convenient as raters only have to read four short paragraphs (one for each attachment style) and then rate themselves. The subject is then placed into one of four attachment styles. These categories indicate the subject's IWM for the subject and others: secure (positive for both self and others), avoidant (positive for self, negative to others), anxious (negative for self, positive for other), and dismissive (negative for self and other). However, there is concern for its low reliability for the secure (alpha level $= 0.41$) and dismissive (alpha level $= .70$) attachment styles (Griffin & Bartholomew, 1994). There has also been some concern over a self-report bias to view oneself more positively (e.g., see oneself as having a secure attachment rather than an anxious or avoidant attachment).

Hazan and Shaver's (1987) measure, the AAI, and the RQ all use a strictly a categorical model approach (see Figure 2 on how the terminology relates to each other). This method of conceptualizing adult attachment is helpful in that it provides economical communication, explaining results succinctly by reducing the variability of the attachment process into three distinct styles (Griffon & Bartholomew, 1994). However, the categorical approach assumes that the variance within each attachment style is insignificant, and that only variance between the attachment styles is meaningful. This is unfortunate, as the distinction between the different attachment styles can be considered arbitrary (Kurdek, 2002; Fraley & Spieker, 2003a; 2003b). In addition, the categorical approach invites people to develop stereotypes and oversimplify constructs, as it can lead one to exaggerate the differences between the different attachment styles and minimize the differences within each attachment style. For example, an individual may develop the assumption that everyone with an insecure attachment style (i.e., avoidant and anxious) has an equally difficult time with relationships, and not recognize that some individuals may be closer to a secure attachment style, but for some reason fit better in another attachment style. A second, and perhaps more important issue, is that there are concerns about the reliability of the categorical approach (Griffin & Batholomew, 1994; Waters & Beauchaine, 2003), which compromises the validity of the measure (Kurdek, 2002, Wulff, 2006). This has led researchers to use the dimensional approach to measure attachment (Fraley & Spieker, 2003a, 2003b; Kurdek, 2002; Siegert, Ward, & Hudson, 1995).

The most recent adult attachment measure is the Relationship Scale Questionnaire (Griffin & Bartholomew, 1994). The RSQ consists of 30 statements that the person rates on a Likert scale (See Appendix D). These statements come from a combination of both the RQ and the Hazan and Shaver measure. However, the RSQ can be used in a categorical or dimensional

manner, with the categorical approach being similar to the RQ. The dimensional approach utilizes two categories: anxious and avoidant. A person scoring higher on either the anxious or avoidant dimension is considered to demonstrate higher tendencies towards that type of attachment. The RSQ shows no issues with reliability (Griffin & Bartholomew, 1994), and is frequently used within attachment theory research, including the only study that examines the relationship between attachment and prayer styles (Byrd and Boe, 2001). In fact, Byrd and Boe indicate that future studies of attachment style in psychology of religion should use the dimensional rather than the categorical approach.

Attachment and religion/God. With the development of adult attachment theory and questionnaires, researchers and theorists have the opportunity to examine attachment in relation to a number of domains, such as religion. Attachment theory in psychology of religion is based upon two basic premises (Kirkpatrick, 1992, 2005). The first premise is that religion or spirituality is primarily characterized as a relationship with God. This premise was demonstrated in a national Gallup Poll (1993) where people choose from a list of options on why they are religious. Of those options, 51 percent selected "a relationship with God," 19 percent "a set of beliefs," 4 percent "a membership in a church or synagogue," and 20 percent "finding a meaning in life;" indicating that a relationship with God is an essential aspect of religion for many people. In the same survey, more than half of the sample rated, "growing into a deeper relationship with God" as (at least) "very important" to them, while only 16 percent stated that it is not at all important. In another study, two-thirds of both newspaper survey respondents and college students reported that they had a personal relationship with Jesus Christ or God (Kirkpatrick, 1992). Thus, it appears that a relationship to God is an important factor in religion, and something that many people attempt to facilitate.

The second premise is that God can be considered an attachment figure. As stated earlier, Ainsworth (1985) indicated that there are five characteristics that make an attachment figure. Kirkpatrick (1992) argued that God fits this designation. The first criterion is that religious people need to seek and maintain a proximity to God. This may seem odd given that God does not exist in a physical form, but this is not inconsistent with attachment theory. In Bowlby's (1973) second volume, he articulates that the attachment process exists in a psychological sense rather than a physical sense as the attachment figure must be responsive. Thus, as long as God is perceived as accessible, God would fit the attachment framework. One can witness this in how individuals state how they feel close to God, sermons that talk about God being omnipresent, and, probably most notably, prayer, when people talk to God as a dear friend. These examples illustrate how people experience a connection to God, and make a concerted effort to increase that connection.

According to Ainsworth, the second characteristic of an attachment figure is that the figure provides a haven of safety. Considerable research shows that people often turn to God in times of trouble and crisis (Spilka, Hood, Hunsberger, & Gorsuch, 2003). In fact, Spilka and colleagues (2003) write that there are three negative events that particularly trigger individuals to turn to God: negative events that cause both mental and physical distress, the anticipated or actual death of friends or relatives, and dealing with an adverse life situation. These three circumstances are very similar to Bowlby's (1969) three classes of stimuli that activate the attachment system: (1) illness, injury, or fatigue, (2) separation or threat from attachment figure, and (3) frightening or alarming environmental stimuli that elicit distress or fear. Empirical evidence also shows that people often turn to prayer (e.g., to God) during times of distress (Argyle & Beit-Hallahmi, 1975), physical illness (O'Brien, 1982), and death of significant others

(Loveland, 1968), thus illustrating people perceive God as providing or having the potential to provide comfort in a time of turmoil.

Third, the attachment figure provides a sense of security. One study found very few significant correlations between religious constructs and a variety of psychological and physiological constructs, with one exception: level of secure attachment to God (Kirkpatrick & Shaver, 1992). Specifically, respondents indicating an avoidant attachment to God (i.e., God is perceived as impersonal, distant, and "doesn't care about me") scored significantly higher on depression, loneliness, psychosomatic symptoms, and life satisfaction than respondents endorsing secure (God is perceived as responsive, warm and caring) or anxious (God is perceived as sometimes responsive, warm, and caring) feelings. Many people asserted that God is an entity that provides a sense of security (Kirkpatrick, 2005). For example, people wrote that they feel "grounded" and "at peace" when they have a close connection to God.

The fourth and fifth characteristics, a threat of separation that causes anxiety in the attached individual and loss of the attachment figure, which causes grief in the attached person, are harder to apply to God. This is mainly because God is often perceived as an omnipresent and omnipotent figure, and it is, therefore, theoretically impossible for the individual to lose an attachment to God. However, within Christianity and other major religions, separation from God is the very essence of hell. In addition, there is documentation of individuals feeling separated from God and expressing their anguish or lack of meaning in life (Kirkpatrick, 2005). For example, concentration camp survivors who lost their faith in God reported no longer being the same person. The same feeling is also reported by soldiers who have lost faith in God after witnessing physical destruction.

Given the characteristics and support mentioned above, there is sufficient evidence that God can be viewed as an attachment figure. However, not all people are attached to God in the same manner and degree. Some individuals claim to have a very stable and close relationship with God. Others have a more unstable relationship with God; at times they experience God to be extremely close, but then feel that God abandons them. There are other individuals with little to no relationship with God, and who question the existence of such a being. Attachment theory explains part of the reason why individual differences occur.

Individual differences in attachment and religion. Attachment theory has also been used within psychology of religion to explain individual differences in several religious constructs: the manner of someone's religious conversion, how close a person may feel to God, and if God is a benevolent figure (Granqvist, 1998; Granqvist & Kirkpatrick, 2004; Reinert, Edwards, & Hendrix, 2009). The underlying assumption of a religiously oriented attachment theory is that if early attachment is the basis for how relationships develop (including relationship to God), then an individual's attachment style should be consistent across relationships. In other words, individual differences in relationships with parents, adult romantic partners, and other attachment figures should be empirically related to how individuals perceive their relationship with God. Research shows that this indeed is the case, and develops two complementary theories to explain the relationship (Granqvist. 1998; Kirkpatrick, 2005).

The first theory is the correspondence hypothesis, suggesting a direct relationship between parental attachment style and perceived relationship with God (Granqvist, 1998; Kirkpatrick, 1992). For example, individuals with a secure attachment style would likely view God in a way similar to their relation to their parents, as someone who is an available and responsive figure who consistently cares and loves them. On the other hand, an individual with

an avoidant attachment style views God as a distant and cold figure, or simply nonexistent. Both longitudinal and cross-sectional studies verify this.

Brief longitudinal studies illustrate that correspondence hypothesis may continue from childhood to adulthood. Granqvist, Ivarsson, Broberg, and Hagekull (2007) interviewed 80 people with the Adult Attachment Interview, and had them answer questions on their perception of God and other religious variables. Findings indicate that estimates of parental love relates to loving images of God. This result is also shown from several longitudinal studies within youth, as studies from 5th to 9th graders and children ages four to eleven found perceived closeness to their parents relating to their perception of God as real, close, forgiving, and caring (Kirkpatrick, 2005; Tamminen, 1994).

Cross-sectional studies examining adult attachment style and perception of God also support the correspondence hypothesis. A study recruiting over 200 adults found that adults classifying themselves with secure attachment were more likely to view God as loving, less distant, and less controlling compared to avoidant participants (Kirkpatrick & Shaver, 1992). In addition, avoidant participants were significantly less religious and more likely to classify themselves as agnostic compared to those with a secure or anxious attachment style. A study with over 1,300 undergraduates indicated that the secure attachment group was the most religious, whereas people with more anxious and avoidant attachment were less religious (Kirkpatrick, 1998). When religious variables are controlled, Kirkpatrick (1998) found that the individual's IWM of the self was most strongly associated to images of God, with positive perceptions of the self being significantly related to positive perceptions of God. The IWM of others related to a personal or impersonal belief in God. Specifically, if a person viewed other people in a positive manner, they tended to view God as closer or personal, whereas if people

viewed others in a negative manner, they tended to view God as impersonal or nonexistent. Another study found similar results (Kirkpatrick & Shaver, 1992). The findings of these three studies are summarized in Figure 3.

The correspondence hypothesis is also verified across cultures. Two studies examined numerous cultures with respect to the parenting styles (i.e., dominant versus nurturance) and societal beliefs about God (Rohner, 1976). The studies indicate that cultures characterized by loving and nurturing parenting styles tend to endorse a benevolent God, whereas in cultures where parenting tends to be more dominating, the perception of God is more malevolent.

The correspondence hypothesis is also used to explain religious conversion (Kirkpatrick, 2005). Consistent with correspondence hypothesis and its direct relationship between attachment figure and religious beliefs, the individual endorsing a secure attachment tends to follow her attachment figure's religious practice. In other words, if the attachment figure is religious, then the attached individual also tends to be religious. If the attachment figure is not religious, the same is also true for the attached individual.

However, the opposite is true for the insecure attached individuals (i.e., dismissive, preoccupied, and fearful). If the insecurely attached individual's parent(s) are religious, the individual tends not to be religious. If the individual's parents are not religious, that individual is more likely to become religious. This is inconsistent with the correspondence hypothesis, and leads to the development of a second hypothesis of attachment theory in religious behavior called the compensation hypothesis. The premise of the compensation hypothesis is that the individual who experiences an insecure childhood attachment with her primary attachment figure will have a greater need to find other figures to make up for the lack of consistent nurturance and safety. God would, thus, provide that security by being a surrogate attachment figure. However, if the

parents of the insecure attached individuals are religious, they are less likely to remain religious and look to God for security. This is because the individual perceives God as not providing security and nurturance in times of need when that person was a child, there would be no motivation to be religious or try to connect to God when older. While the compensation hypothesis is useful in terms of explaining religious conversion for insecurely attached individuals, it is limited to this domain. Thus, for religious practices and understanding one's relationship to God, the correspondence hypothesis is generally used.   For example, Byrd and Boe (2001) used only the correspondence hypothesis to explain how attachment and prayer style related.

Previous Research on Prayer and Attachment

To date only one study has examined the relationship between prayer style and attachment. In the study, the authors used the dimensional model from the RSQ to measure attachment and the PQ to assess for prayer style (Byrd & Boe, 2001). That study used the dimensional approach form the RSQ and the PQ, as it was the only prayer measure available. The study also controls for four potentially confounding variables: age, gender, early religious involvement, and stress level. Early religious involvement has shown to significantly impact children's and adolescents' attitudes towards prayer and the amount of private prayer done (Francis & Brown, 1991, 1990; Hunsberger, 1976). Byrd and Boe assessed this by asking the participant how frequently she attended church during the elementary and junior high years. They also accounted for stress as it appears to influence what a person may think or do as they pray (Fry, 1990). Thus, the researchers administered the Student Stress Scale (SSS). They also controlled for gender, as it interacts with the anxious and avoidant attachment dimensions

(Kirkpatrick, Shillito, & Kellas, 1999). Finally, they controlled for age after the initial analysis, because it correlated significantly with avoidance.

Byrd and Boe's (2001) hypotheses were based upon the correspondence hypothesis. The first hypothesis was that avoidance attachment dimension would have a negative relationship to Meditative and Colloquial prayer style. This was based on the idea that a person engaging in a Meditative and Colloquial prayer style seeks to be closer to God and those with higher levels of avoidant attachment style naturally try to avoid intimacy with anyone, including God. The second hypothesis was that the anxiety attachment dimension would positively correlate with Petitionary prayer. This is based upon Bowlby's (1969) hypothesis that anxious individuals partake in many help-seeking behaviors in order to maintain perceived fragile interpersonal bonds (Dozier & Lee, 1995). Therefore, individuals endorsing higher levels on the anxious dimension would perceive the relationship with God and others as fragile, and would ask God for help (i.e., Petitionary prayer).

The study enrolled 166 students from the University of Nebraska at Kearney (111 women, 55 men, mean age = 20.84), with 31 percent being Catholic, 58 percent Protestant, 7 percent other, and 4 percent none. Consistent with the hypotheses, Byrd and Boe found that the avoidance dimension negatively related to Meditative and Colloquial prayer styles and anxious dimension positively related to Petitionary prayer style.

Current Study

Recent national polls consistently show that prayer is a frequent spiritual practice among Americans (Bader et al., 2007; Baker, 2008). However, despite its frequency and the important purpose it serves in the major religious traditions, very little research examines what psychological factors influence how the individual prays. Within the past decade, there has been

increased awareness within psychological research that prayer can be divided into different styles or dimensions. This led to the development of three multi-dimensional prayer measures: Prayer Questionnaire (PQ), Inward Outward Upward Prayer Model (IOUPM), and Multidimensional Prayer Inventory (MPI). Relatively few studies have been conducted that examine how different prayer styles relate to a variety of psychological constructs. However, the small amount of research that has been done is encouraging, as research shows that how someone prays can be at least as or more important than how frequently someone prays (Maltby, Lewis, & Day, 2008; Poloma & Pendleton, 1991).

While research on prayer styles is in the early stages, attachment theory has received significant research interest in the psychology of religion over the past 20 years. Specifically, within attachment theory, the correspondence hypothesis helps explain individual differences in a person's connection to God and religious conversion. However, there has only been one published study that examines whether the correspondence hypothesis can help explain individual differences in prayer style (Byrd & Boe, 2001). This studied finds that for college students who endorse a more anxious attachment, engagement in Petitionary prayer (e.g., asking for material items) is more likely. They also find that college students who endorse a more avoidant attachment are less likely to engage in meditative and colloquial prayer.

This present study will use a dimensional approach from the Relationship Scale Questionnaire to measure attachment styles, as suggested by Byrd and Boe (2001). The study will also use some of the prayer styles from the three existing prayer measures. These prayer styles will be the Meditative, Colloquial, and Petitionary from the PQ, and prayer styles from the IOUPM and MPI that appear to parallel those prayers from the PQ (i.e., Rest, Petition, Receptive, Supplication). Based upon previous research, the study will control for age, gender,

early religious involvement, and church attendance. The primary purpose of the study will be to examine the relationship between attachment and prayer styles for each of the three prayer measures.

Based upon the correspondence hypothesis and Boe and Byrd's (2001) results, it is hypothesized that:

1. The anxious dimension on the Relationship Scale Questionnaire RSQ will predict:

   a. Higher levels of Petitionary prayer on the Prayer Questionnaire (PQ);

   b. Higher levels of Petition and Intercession prayer on the Inward, Outward, Upward Prayer Model (IOUPM); and

   c. Higher levels of Supplication on the Multidimensional Prayer Inventory (MDI).

2. The avoidant dimension on the RSQ will predict:

   a. Lower levels of Meditative and Colloquial prayer on the PQ;

   b. Lower levels of Rest prayer on the IOUPM; and

   c. Lower levels of Receptive and Thanksgiving prayer on the MDI Embracing Paradox.

Chapter 2

Methods

Design

A non-experimental, cross-sectional, regression design was used to assess the relationship between attachment and prayer styles for college students enrolled in an undergraduate

psychology course. The primary predictor variables consist of the two attachment dimensions (avoidant and anxious) as measured by the Relationship Scale Questionnaire (RSQ) (Griffin & Bartholomew, 1991). The criterion variables come from the prayer styles of the three prayer measures: (1) Prayer Questionnaire (PQ), (2) Multidimensional Prayer Inventory (MPI), and (3) Inward, Outward, Upward, Prayer Model (IOUPM). The variables of interest from the PQ are Colloquial and Meditative, for the IOUPM are Rest and Petitionary, and from the MPI are Reception and Supplication. In order to help eliminate confounding variables, the study will account for participant's age, gender, early religious involvement, and stress in the hierarchical regression analyses (Boe and Byrd, 2001).

Participants

Participants were recruited from Introduction to Psychology courses at Indiana State University, a medium-sized state university in a medium-sized, rural, mid-western city.   The participants were recruited via the university's online research program and completed an online survey in order to fulfill requirements for their course. A total of 199 (145 female and 40 male) participants were recruited. Participants were between the ages of 18-24. The sample was 66.2 percent Caucasian American, 27.8 percent African American, 2 percent Hispanic, and 4 percent other. As for the religious denominational breakdown, 23.2 percent of the participants were Catholic, 32.8 percent Baptist, 7 percent Methodist, 8 percent Christian - other, 1 percent Muslim, 1.5 percent Buddhist, 1.5 percent New Age, and 7.5 percent Atheist/Agnostic.

Measures

Demographics. Participants were asked to provide basic demographic information including age, gender, religious affiliation, and how frequently they attended religious services during elementary and middle school (See Appendix E).

Student Stress Scale. Student stress level was measured with the Student Stress Scale (Insel & Roth, 1991), a measure similar in format to a widely used Social Readjustment Rating Scale (Hohmes & Rahe, 1967). However, the items are tailored to stressful events that occur during college. The scale has 31 items pertaining to possible stressful events, each weighted according to severity (e.g., death in the family = 99, change of major = 39). While there is little evidence available regarding the scale's criterion validity, it was chosen because it was used in the only previous study examining prayer and attachment style. The measure also demonstrates high content validity for the kinds of stressors likely experienced in a college sample. The participants were instructed to mark the items that occurred in the last six months or anticipated to occur within the upcoming six months. The instrument is scored by simply adding up the weighted scores of the checked items. See Appendix E for the measure.

Prayer Questionnaire. The first measure used to assess an individual's prayer style was the Prayer Questionnaire (PQ; Poloma & Gallup, 1991). The PQ consists of 15 questions that pertain to four styles of prayer (Meditative, Colloquial, Petitionary, and Ritual). The styles of prayer are all rated on a seven-point Likert-type scale with one representing "never" engaging in that type of prayer and seven representing "always" engaging in that type of prayer. In terms of the specific styles of prayer, Colloquial prayer consists of six questions, Meditative prayer consists of five questions, and Petitionary prayer and Ritual prayer both consist of two questions (see Appendix A). The item scores for each prayer style were added up and divided by the number of items to calculate the mean score for the style.

For internal consistency, Poloman and Pendleton (1991) showed good alpha levels for Colloquial (0.85), Meditative (0.81), and Petitionary (0.78) and poor reliability for Ritual (0.59); however, ritual prayer is not of interest for this study. Boe and Byrd (2001) also found similar

results for internal consistency. They also found the correlations between the prayer styles

ranging between .57 and .84, with meditation and colloquial prayer having the highest

correlation (.84). Thus, there are concerns that Meditative and Colloquial prayer represent

similar constructs.

Inward Outward Upward Prayer. A second prayer measure to assess prayer style of

participants was the Inward Outward, Upward Prayer Model (IOUPM; Ladd & Spilka, 2002).

The participants were asked to rate on a six point Likert scale the "degree to which (someone)

thinks about each of the following words or phrases during (his or her) own prayer," with one

representing that the participant "strongly disagreed" and six representing that the participant

"strongly agreed." There are 29 words or phrases in total. The item scores were then added up

and divided for each prayer style to calculate the mean (see Appendix B).

The reliability for the eight specific prayer types ranged from .72 to .82 (Ladd & Spilka,

2006); thus, the prayer styles appear reliable. The same study showed an interscale correlation

range from .20 to .41, indicating that the different prayer styles are relatively distinct. These

results were similar in an earlier study (Ladd & Spilka, 2002), indicating that the study is reliable

across time and sample.

Multidimensional Prayer Inventory. The third measure used to assess prayer style was

the Multidimensional Prayer Inventory (MPI; Laird, Snyder, Rapoff, & Green, 2004). The MPI

consists of a total of 21 questions. Fifteen questions pertain to how the person may pray. Three

questions relate to each specific prayer style, thus, creating five types of prayer. There are also

three questions that pertain to how frequently and how long an individual prays and two

questions pertaining to their belief about how prayer affects their life or other people's lives;

these questions, however, were omitted from the study because they were not critical to the

hypotheses being examined. One question asked about religious denomination, which was included in the study in order to obtain basic demographic information. There were also questions pertaining to gender and age (See appendix C).

The MPI has been used in both a college sample and a sample with rheumatoid arthritis or osteoarthritis (Laird et al., 2004). Using both samples, the Cronbach's alpha showed an internal consistency of .92 for the prayer style portion of the measure. The college student population had an interscale correlation between .28 and .64, while the arthritis population had an interscale correlation between .51 and .77. The MPI indexes were shown to have good convergent validity and were a good predictor of religiosity. It also showed good discriminate utility on a variety of constructs being measured (i.e., hope, religious orientation, affect, and subjective impact).

Relationship Scale Questionnaire. The Relationship Scale Questionnaire (RSQ; Griffin & Bartholomew, 1994) is a self-report measure that consists of 30 statements describing how adults may think or feel in romantic relationships (see Appendix D). These statements were taken from Hazan and Shaver's (1987) attachment measure and Bartholomew and Horowitz's (1991) Relationship Questionnaire. The participants were asked to rate (on a five point scale) the extent to which each statement describes characteristics of their close relationships, with one being "not at all like me" and five being "very like me." The factor analysis of the RSQ performed by Siegert, Ward, and Hudson (1995) found that two dimensions best explain the model. These dimensions can be termed avoidant and anxious. There are 18 items on the avoidance dimension and 15 items on the anxiety dimension. In a college sample, Byrd and Boe (2001) found Cronbach's alphas of .81 and .78 for the avoidant and anxious dimension on the

RSQ, respectively. The RSQ is one of the most commonly used measures for adult attachment (Bäckström & Holmes, 2001).

Procedures

Participants were recruited from the Psychology Department's online recruiting database. Several mass emails were sent to General Psychology students to notify them of the study. The participants first viewed an informed consent protocol (see Appendix G) and then were asked to complete the PQ, IOUPM, MPI, RSQ, and the demographic survey. It was expected that participants would spend approximately 30-45 minutes responding to the measures. Following their completion of the measures, participants viewed a debriefing script (see Appendix H).

Chapter 3

Results

Preliminary Analysis

Table 1 presents mean scores, standard deviation, range, and alpha level for prayer and attachment dimensions, early religious involvement (ERI), and student stress scale (SSS). In general, the sample can be described as praying at a low to moderate level, as many of the measures were around the lower to middle range of potential scores. The results from the SSS also suggest that the participants in this sample were experiencing higher levels of stress ($M = 306.01$; $SD = 151.25$) than the Byrd and Boe (2001) study ($M = 257.59$; $SD = 169.48$). Finally, the Cronbach's alphas were relatively similar to previous studies (Byrd & Boe, 2001; Ladd &

Spilka, 2006; Laird, Snyder, Rapoff, & Green, 2004) and showed that all the variables of interest had adequate internal consistency.

Correlation Analysis

Table 2 represents the zero order correlation between the prayer styles and the attachment dimensions. The results indicate that most of the prayer styles were significantly related in a positive direction. Consistent with what was predicted Meditative, Colloquial, and Receptive Prayer all were highly correlated, with the correlation coefficients all being above .70 ($p < .01$). Rest prayer, however, had a weaker relationship to the other styles, with the correlation coefficients ranging from .515-.602 ($p < .01$). This indicated that the prayer styles being tested with avoidant attachment are assessing a similar type of prayer, with Rest prayer being slightly different. In terms of the prayer styles being tested with anxious attachment, Petitionary and Petition prayer styles correlated well with each other ($r = .629, p < .01$). Supplication prayer, however, had a lower correlation with Petitionary ($r = .351, p < .01$) and Petition ($r = .522, p < .01$) prayers. Thus, it appears that the sample deems Supplication prayer as a more distinct type of prayer relative to the other prayer styles with anxious attachment. Table 2 also shows that avoidant and anxious attachment dimensions were highly correlated with each other ($r = .709, p < .01$), indicating for this sample the supposedly two separate dimensions may actually measure a single dimension.

Correlations between the prayer styles and attachment dimensions showed several significant relationships. The Rest prayer from the IOUPM had a significant correlation with both avoidant and anxious attachment dimensions. Petitionary prayer from the PQ, and Petition prayer from the IOUPM also had a significant relationship to both the avoidant and anxious attachment dimensions. Regression analyses will be conducted for these prayer styles and

attachment dimensions, as predicted by the correspondence hypothesis (i.e., Rest prayer and avoidant attachment, Petitionary prayer and anxious attachment, and Petition prayer and anxious attachment). Meditative and Colloquial prayers from the PQ and Receptive and Supplication prayers from the MPI were not significantly related to either the avoidant or anxious attachment dimensions; thus, no regression analyses for these prayers were needed to test the hypotheses related to these potential relationships.

Table 3 shows the relationship between the prayer styles and the SSS, ERI, and several demographic variables. The results indicate no association between any of the prayer styles with SSS or gender. ERI during both elementary and middle school showed a significant correlation with four of the seven prayer styles (i.e., Meditative, Colloquial, Receptive, and Supplication). Age significantly correlated with three of the prayer styles (i.e., Meditative, Colloquial, and Receptive) and race correlated with five of the prayer styles (i.e., Meditative, Colloquial, Petition, Receptive, and Petition).

Table 4 reviews the association of the SSS, ERI and several demographic variables to attachment. Consistent with Byrd and Boe's (2001) study, SSS significantly related to both avoidant and anxious attachment dimensions. Participants with reported higher levels on the SSS also reported higher levels of both avoidant and anxious attachment. The results also suggest that participants who are non-Caucasian have significantly lower levels of avoidant attachment. Also, participants who were older were significantly more likely to engage in anxious attachment. Gender did not have a significant relationship to any of the prayer styles or attachment dimensions, so it will not be included in the multiple regression analyses.

Multiple Regression Analysis

A series of hierarchical multiple regression analyses were completed in order to test each hypothesis. The following statistical procedures and results will be discussed as they relate to each individual hypothesis. All the hypotheses discussed utilized a three step hierarchical regression with the steps being: (1) attachment dimension (avoidant or anxious), (2) attachment dimension, ERI – elementary, ERI – middle school, and SSS, and (3) attachment dimension, ERI- elementary school, ERI – middle school, SSS, age, and race. Race was coded as Caucasian versus non-Caucasian, given the low percentage of non-Caucasian participants.

Avoidance Attachment and Rest Prayer. The hypothesis for avoidance attachment and Rest prayer suggests that there would be a negative relationship between avoidance attachment on the RSQ (predictor variable) and Rest prayer from the IOUPM (criterion variable). This hypothesis was not confirmed. While the model achieved significance with only avoidance attachment entered into the equation, $F(6,176) = 9.734$, $p < .01$, the direction was positive ($B = .168$) and, thus, the opposite of what was predicted (see table 5). The initial model predicted 4.5 percent of the variance for Rest prayer. In addition, avoidance attachment remained significant when the other variables were added into the model.

When ERI and SSS were entered into the equation, the model was significant $F(4,178) = 3.099$, $p < .05$, but only predicted 4.4 percent of the variance. Thus, it did not provide any added value of predicting the Rest prayer's variance. When age and race were entered into the equation, the model was significant, $F(6,176) = 3.299$, $p < .01$, adding predictive value to 7 percent of Rest prayer's variance; however, only age and avoidance attachment were significant. Thus, according to the third model, participants higher on avoidance attachment ($B = .165$; $p < .01$) and older ($B = .707$; $p = .05$) were more likely to report engaging in Rest prayer.

Anxious Attachment and Petitionary Prayer. The hypothesis for anxious attachment and Petitionary prayer suggests that there would be a positive relationship between anxious attachment on the RSQ (predictor variable) and Petitionary prayer from the PQ (criterion variable). The hypothesis was supported, as anxious attachment remained significant for step 1 ($B = .036$; $p < .001$), step 2 ($B = .036$; $p < .001$), and step-3 ($B = .033$; $p < .01$; see table 6). Thus, the results suggests that regardless of age, race, stress, and early religious involvement, college students who report having higher levels of anxious attachment are significantly more likely to engage in Petitionary prayer as described from the PQ.

In terms of the overall model, the first step accounted for 3.6 percent of the Petitionary prayer's variance, $F(1, 183) = 7.882$, $p < .01$. The second step accounted for 3.0 percent of the Petitionary prayer's variance $F(4, 180) = 2.411$, $p < .05$. The third step accounted for 4.9 percent of the Petitionary prayer's variance, $F(6, 178) = 2.563$, $p < .05$. Each step achieved significance. However, ERI and SSS actually reduced the predictive value of the model, as evident by the decrease in the variance being accounted for when they were included in the second step of the model. The model's predictive value increased again when age and race entered into the equation. Race approached significance ($t = -1.950$, $p = .053$), but no other variable significantly helped predict the variance for Petitionary prayer besides anxious attachment.

Anxious Attachment and Petition Prayer. The hypothesis for anxious attachment and Petition prayer suggested that there will be a positive relationship between anxious attachment on the RSQ (predictor variable) and Petition prayer from the IOUPM (criterion variable). The hypothesis was supported. Regardless of the variables entered into the model, anxious attachment remained significant in predicting the variance of Petition prayer from the IOUPM: step 1 ($B = .120$, p-value < .01), step 2 ($B = .121$, p-value < .01), and step 3 ($B = .117$, p-value =

.01; see table 10). In terms of the overall regression model, anxious attachment on its own accounted for 4.9 percent of the variance, $F(1, 180) = 10.318$, $p < .01$. When ERI and SSS were added to the model the accounted variance dropped to 4.3 percent, $F(4, 177) = 2.728$; $p = .05$, and when age and race where added the accounted variance rose to 8.3 percent, $F(6, 175) = 3.745$, $p = .01$. Besides anxious attachment, the only other variable that significantly related to Petition prayer was race, $t = -3.233$, $p < .01$. Thus, the results suggest that participants who endorsed higher levels of anxious attachment and were not Caucasian were more likely to engage in Petition prayer.

Chapter Four

Discussion

The focus of the current study has been to examine the relationship between an individual's attachment and prayer styles, while also statistically accounting for variables associated with prayer style or attachment (e.g., age, race, early religious involvement, and stress level). Based upon the correspondence hypothesis, a popular theory in psychology of religion, people who endorse higher levels of avoidant attachment are less likely to have a close relationship with God (Kirkpatrick, 2005). The correspondence hypothesis also predicts that people with anxious attachment are more likely to seek help from others and God. Prayer is also believed to be the most direct way to communicate to God (James, 1912; Heidler, 1932; Ladd et al., 2002). Thus, it was hypothesized that (1) prayer styles with the purpose of developing a relationship with God (i.e., Meditative, Rest, Colloquial, and Receptive) would be endorsed less

by participants with higher levels of avoidant attachment and (2) that prayer styles with the purpose of asking God for help (i.e., Petition, Petitionary and Supplication) would be endorsed at a higher level by people with higher levels of anxious attachment. Byrd and Boe (2001) found such a relationship when using the RSQ and the PQ. However, other prayer measures have since been developed, and there has, to date, been no other published study verifying these relationships. This study has assessed whether the correspondence hypothesis is accurate in describing a potential relationship between attachment and prayer style, as well as, including all the existing prayer style measures (PQ, IOUPM, MPI).

The first research hypothesis was not supported by the data. The results indicated that there was either no relationship between the prayer styles and avoidance attachment (i.e., Meditative, Colloquial, and Receptive) or that the relationship is actually positive (i.e., Rest). A possible explanation as to why the results did not support the correspondence hypothesis and the findings from Byrd and Boe's (2001) study is the difference in sample. The results from the descriptive statistics indicated that the sample from the present study was significantly different on several important factors. Compared to Byrd and Boe (2001), the sample in the current study prayed significantly less in terms of Meditative prayer ($t = -12.70$, $p < .01$, $D = 1.33$), Colloquial prayer ($t = -8.28$, $p < .001$, $D = .87$) and Petitionary prayer ($t = -8.28$, $p < .001$, $D = .92$). These large effects could help explain why the results differed between the two studies.

A possible explanation for this large difference in prayer could be the difference in the amount of stress, as the present sample reported being significantly more stressed ($t = 2.60$, $p < .01$, $D = .27$). However, previous research has shown that in a variety of populations stress increases prayer frequency (Fry, 1990; Loveland, 1968; Neighbors, Jackson, Nowman, & Gurin, 1983; Rosenstiel & Keefe, 1983; Tuttle, Shutty, & DeGood, 1991). In addition, the SSS did not

significantly correlate with any of the prayer styles. As a result, this would be inadequate explanation for the inconsistent results between studies.

There was also a significant difference in the gender composition between the Byrd and Boe (2001) sample and the present sample (p-value < .001; χ^2 = 15.19). Specifically, there was a significantly higher percentage of females in the present study compared to Byrd and Boe's (2001). Interestingly, studies have shown gender differences in prayer within various types of situations (Coleman et al. 2006; Tait, Laditka, Laditka, Nies, & Racine, 2011). There was also likely a racial difference between the present study and Byrd and Boe's (2001) study. Unfortunately, Byrd and Boe (2001) did not report this information. Thus, a direct comparison cannot be formulated, but the fall enrollment in 2001 at the university where the study was conducted reported 87 percent of the student population was Caucasian, 5 percent was "non-resident aliens," 3 percent was any non-Caucasian race, and 5 percent were unknown (University of Nebraska - Kearny, 2012). Thus, it is probable that the sample in their study was essentially Caucasian.

In contrast, the present study consisted of about 66 percent Caucasian and 28 percent African American, with the rest being of another race. Thus, while Byrd and Boe (2001) reported that race did not have any significant association with prayer style, their non-Caucasian sample could have been so insignificant that a possible relationship may not have been possible. This explanation is important to consider, given that the regression analyses in the present study indicated a significant relationship between race and many of the prayer styles in this study, including Meditative, Colloquial, and Receptive, ones that were not statistically significant. The relationship between prayer and race has also been supported by ample research that has found that racial differences in prayer do exist (Gillum & Griffith, 2009; Krause & Chatters, 2005;

Taylor et al., 2004). This potential difference in race and actual difference in gender and stress

could mean that the two samples are coming from two fundamentally different populations; thus,

creating the difference in prayer.

Another potential reason for the hypothesis not being confirmed is the nature of the

attachment dimensions from the RSQ. The bivariate correlation indicated that the avoidant and

anxious attachment dimensions had a .709 correlation, resulting 50 percent of the variance

overlapping. This was much higher than Byrd and Boe's (2001) study that reported a correlation

of only .20, resulting in only a 4 percent overlap between the two attachment dimensions. The

high correlation in the present study is surprising given that, theoretically, the two attachment

dimensions aim toward two opposing processes. This could indicate that for this study both

attachment dimensions were actually assessing a single dimension. It could help explain how the

results differ from Byrd and Boe's (2001) study, and how no prayer style had a significant

relationship to just one attachment dimension (i.e., either to both attachment dimensions or

neither). The strong overlap also provides some evidence that distinct and consistent attachment

styles may not clearly exist (Caron, Lafontaine, Bureau, Levesque, and Johnson, 2012).

Another unexpected finding was that Rest prayer actually had a positive relationship with

avoidance attachment.   A potential reason for this is that the IOUPM indicates less of a direct

connection to God than both the PQ and MPI. Both the PQ and MPI mention God in their

questions or directions. In addition, the items in those prayer styles also suggest a more active

attempt to make a connection to God. For example, one of the Receptive prayer's three

statements is "I opened myself up to God for insight into my problems." The Meditative and

Colloquial prayers also have items related to "adoring God," "quietly thinking about God,"

"speaking and listening to God," and trying to be in the "presence of God." The Rest prayer,

however, has a more secular tone to it with the participant being asked to rate how highly they think about the words "stillness," "silence," "quietude," "private experience." Thus, participants could engage in such a prayer without believing they are developing a relationship with God. In addition, someone who has an avoidant attachment perspective may view periods of "silence" and "private experience," as a natural fit within their attachment style.

The idea of the IOUPM being more secular is also supported by the fact that both of the IOUPM prayer styles (i.e., Rest and Petition) did not significantly correlate with the ERI variables, whereas four of the five prayer styles form the PQ and MPI showed a significant correlation. In addition, previous research has shown that even some atheists and agnostics engage in prayer (Bader et al., 2007; Baker, 2008; Greenley, 1996), and meditation has become an increasingly secular practice (Benson, Greenwood, & Klemchuk, 1975), which has been related to more contemplative and restful types of prayers (Ferguson, Willemsen, & Castaneto, 2010). Thus, the results and previous research suggests that someone who adopts an avoidant attachment can also engage in restful types of prayers.

The second research hypothesis predicted a positive relationship between the anxious attachment dimension and the Petitionary prayer style from the PQ, the Petition prayer style from the IOUPM, and the Supplication prayer style from the MPI. The research hypothesis was supported for both the Petitionary and Petition prayer styles, as the anxious attachment dimension accounted for a significant portion of variance in the prayer styles. This was true even when accounting for variables that are shown to be associated with prayer or attachment (i.e., age, race, early religious involvement, and stress level). However, the overall models were only able to predict 4.9 percent and 8.3 percent of the variance for Petitionary and Petition prayer, respectively. Thus, the actual utility of the model appears limited. Nevertheless, the

results from the Petitionary and Petition prayer supports the correspondence hypothesis that people with higher levels of anxious attachment will turn to God to alleviate their material issues.

No significant relationship was found between anxious attachment and Supplication prayer. This difference is less surprising, given that the correlation between the Supplication and Petitionary and Petition has a lower correlation. A possible explanation for the difference is that Supplication prayer concentrates on general concerns (e.g., I made various requests of God, I asked for assistance with my daily problems), whereas Petitionary/Petition prayers focus on material items (e.g., Petitionary – "asking God for material things for oneself or others;" Petition – "requesting material things," "asking for things I need"). As a result, the participants may have higher levels of concern for material items than other types of concerns, and research has shown that material concerns rank high for college students (Norvilitis, Merwin, Osberg, Roehling, Young, & Kamas, 2006; Purutcuoglu, 2009). In addition, the increasing amount of debt (e.g., credit card and academic) for college students has resulted in increased distress (Stone, Wier, & Bryant, 2008). This may make college students more likely to pray about their material concerns compared to other types of concerns.

Limitations

Although this study provides further insight into the relationship between people's attachment and prayer style, there are several limitations to the study that are important to note. First, the sample of participants was relatively homogeneous. In terms of race, essentially two-thirds of the sample reported being Caucasian, while a little over a quarter reported being African Americans. Nevertheless, and as indicated earlier, this sample may have been more racially diverse than the previous study assessing the relationship between attachment and prayer style. Thus, it probably provides additional insight about the relationship between prayer style and

race. The sample was also relatively homogenous for gender. The study consisted of 80 percent

women, so any conclusions about the relationship between attachment and prayer style for men

should be made with caution. The limited age range (18-24) also limits how generalizable the

results can be to older adults and children. Given these limitations in the sample, conclusions

can best be made for people who are White, female, and in college. Incidentally, race and age

are especially important factors to consider given that both demonstrated a significant

relationship with several of the prayer styles.

Another limitation is the inconsistency in the RSQ model between this study and Byrd

and Boe's (2001) study. Even though the same initial model was implemented from Sieger,

Ward, and Hudson (1995), certain items had to be eliminated in the interest of achieving a more

reliable model. This was also true of the study by Byrd and Boe (2001) but, unfortunately, they

did not indicate which items they dropped and added from the original model. Essentially, Byrd

and Boe used 17 items for the avoidance dimension and 10 items from the anxious dimension of

the RSQ, whereas the present study used 12 items from the avoidant dimension and 13 items

from the anxious dimension. Thus, a direct comparison in attachment style could not be

established.

Also, as indicated earlier, there was a very high correlation between the avoidant and

anxious attachment dimensions. Even though the researcher examined the individual items of

each dimension from the RSQ to reduce the correlation between the dimensions, the researcher

ultimately decided to not remove items that would lower its reliability. The researcher was also

concerned that removing such items may result in measuring an attachment style that the initial

model did not intend. Regardless, the high correlation indicates that within this sample, the two

dimensions that were intended to be separate might actually have been assessing more of a

singular dimension. This may help explain why the prayer styles that significantly correlated with one attachment dimension did so with the other attachment dimension as well.

Future Research

Given that the results are inconsistent with those from the only previous study relating to prayer and attachment style, there remain fundamental questions regarding the correspondence hypothesis as it relates to prayer. First, further research is needed to assess whether the correspondence hypothesis is actually accurate at explaining the relationship between prayer and attachment style. Given that the sample from this study and the previous study was different (e.g., prayer levels, gender, stress, and probably race), it is possible that the explained relationship between prayer style and attachment merely needs to be refined. It is also possible that no meaningful relationship may be present or that a new theory needs to be developed. Subsequent studies will need to be done before such claims can be made.

To help answer these concerns, a larger and more diverse sample would be needed, especially since the present study found that Black college students are more likely to engage in Meditative, Colloquial, Petitionary or Petition types of prayer than White students. In terms of age, even though the present sample consisted of only 18 to 24 year-olds, surprisingly age was significantly related to several styles of prayer. An older population is presented with different challenges, and has a different maturity level than traditional college students, so it would be understandable that their prayer styles would be different. Given that the present studies have only included traditional college students, using an older population would be beneficial. This could provide knowledge about how the prayer styles may change across a human lifespan.

Finally, a further comparison between the different prayer measures would be beneficial. As the results indicate, some prayer styles may be assessing similar constructs, but others are

relatively unrelated, despite the similar face validity (e.g., Rest prayer versus Meditative and Receptive prayer). In addition, no clear distinctions between the different prayer measures were evident. For example, in the first hypothesis the PQ's Meditative prayer significantly correlated with MPI's Receptive prayer, but neither correlated with IOUPM's Rest prayer. However, for the second hypothesis, PQ's Petitionary prayer and IOUPM's Petition prayer were significantly correlated, but neither correlated as well to MPI's Supplication prayer. Even though certain prayer styles may appear similar, the results suggest that the different prayer measures are testing somewhat different constructs. Some of this is understandable, as different measures are never going to perfectly overlap. For example, the IUOPM provides a word or brief phrase, and asks the participant how frequently she thinks about that word or phrase while she prays. Thus, the IOUPM measure appears assess a person's cognitive experience while praying. Conversely, the PQ and the MPI assesses the experience and intention of prayer, as they ask what the person does, wants, asks, or behaves while praying.

In addition, the PQ and MPI provide a more explicit spiritual tone by having multiple references to God, whereas the IOUPM makes no reference to God. As a result, the IOUPM may be more suited for a more secular population than either the PQ or the MPI. Finally, the specific prayer styles assessed are not identical across measures. The Colloquial prayer asks questions that align with multiple types of prayers from both the IOUPM and MPI. Also, the IOUPM has prayers that do not exist on both the PQ and MPI. These differences between the different prayer measures limit the comparison that the researcher can make, which could potentially inhibit the development in this area. Nevertheless, additional studies that incorporate all the different prayer measures would be beneficial to further assess how they relate to each other.

Clinical Utility

Spiritual interventions have been increasingly utilized within psychotherapy and can be particularly useful for African Americans (Abernethy, Houston, Mimms, and Boyd-Franklin, 2006). Clients have also indicated that they would welcome the increased use of spiritual interventions in psychotherapy (Lehman, 1993; Quackenbos, Privette, & Kletz, 1985). Not surprisingly, people report positive effects when using spirituality in therapy (Ellison & Smith, 1991; Powell, Shahabi, & Thoresen, 2003), and spiritually oriented clients view therapists as more competent when they incorporate spirituality into the session (Keating & Fretz, 1990; McCullough & Worthington, 1995). However, using spiritual interventions, such as prayer, can also lead to negative consequences (Beach, Fincham, Hurt, McNair, & Stanley, 2008). Thus, it would benefit clinicians to have some knowledge of common spiritual practices, such as prayer.

The results from this study help contribute to that knowledge. Specifically, the study indicates that non-Caucasian, and likely African Americans, are more apt to engage in a variety of prayer styles. This should not come as a surprise given that African Americans are more likely to seek a spiritual leader for psychological help than a mental health worker (Mattis, 2005; Sue & Sue, 2008). Thus, potentially integrating prayer when treating a client who identifies as African American may be something worth exploring in session. While this information cannot replace collaborating with the client about if and how the client and therapist pray in session, but it can at least provide a reference point.

The client's age and religious involvement as a child can also provide insight into prayer preferences. Even though the age range was relatively small, it provides some evidence that people that are older are more likely to participate in Meditative, Colloquial, and Rest types of prayers. Thus, if the client is older and the therapist and client decided to utilize prayer during

the session, it may benefit the therapist to engage in a prayer style that parallels those types of prayers. Also, many of the prayer styles positively correlated with the early religious involvement. Therefore, if the client explores her childhood religious involvement during the therapy session, it may be beneficial for the therapist to enquire if the client desires to use prayer in session.

Conclusion

The current study helps further the understanding of how prayer style relates to attachment. Results from the current study provided only adequate support for the correspondence hypothesis in terms of prayer style. Specifically, none of the prayer styles (e.g., Meditative, Colloquial, Rest, Receptive) that are believed to help develop a relationship with God had a negative relationship with avoidant attachment. However, two of the three prayers styles (Petitionary and Petition) designed to ask God for help had a positive relationship with anxious attachment. The prayer that did not relate to anxious attachment, Supplication, also had a lower correlation with Petition and Petitionary prayer, indicating that it is a more distinctive form of prayer. Since Petition and Petitionary prayer deal more with material requests than Supplication, college students with higher anxious attachment may seek God more for material gain. The results also indicated that age, race, and religious involvement during childhood all significantly influence many styles of prayer. Thus, they should also be considered in subsequent studies regarding prayer style. The results also indicated that the prayer measures do not perfectly overlap when related to attachment. Additional research will need to be done to further assess how prayer styles are related to each other and to a variety of other constructs.

A possible reason for the inconsistency in the results between this study and the previous study (Byrd and Boe, 2001) is the difference sample characteristics (e.g., prayer level, gender,

stress level, and probably race) from the previous study on prayer and attachment style. Also, there was a very high correlation between the avoidant and anxious attachment dimension indicating that the two intended dimensions may not have been too different in this sample. This may help explain why none of the prayer styles with avoidant dimensions were significant in the negative direction. Overall, the results indicate that no firm conclusion can be established regarding the relationship between prayer style and attachment. Subsequent studies will need to be conducted to assess if the correspondence hypothesis is an adequate theory for explaining the potential relationship between these two constructs.

References

Abernethy, A. D., Houston, T. R., Mimms, T., Boyd-Franklin, N. (2006). Using prayer in psychotherapy: Applying Sue's differential to enhance culturally competent care. *Cultural Diversity and Ethnic Minority Psychology, 12*, 101-114.

Ainsworth, M. D. (1969). Object relations, dependency, and attachment: A theoretical review of the infant-mother relationship. *Child Development, 40*(4), 969-1025. doi: 10.2307/1127008

Ainsworth, M. D. (1985). Attachments across the life span. *Bulletin Of The New York Academy Of Medicine, 61*(9), 792-812.

Argyle, M., & Beit-Hallahmi, B. (1975). *The social psychology of religion*. Oxford England: Routledge & Kegan Paul.

Armstrong, K. (1993). *A History of God: The 4000-Year Quest of Judaism, Christianity and Islam*: Knopf.

Backstrom, M. & Holmes, B. M. (2001). Measuring adult attachment: A construct validation of two self-report instruments. *Scandinavian Journal of Psychology, 42*, 79-86.

Bader, C. D., Mencken, F. C., Froese, P. (2007). American piety 2005: content and methods of the Baylor Religion Survey. *Journal for the Scinetific Study of Religion, 46*(4), 447-463

Baker, J. O. (2008). An investigation of the sociological patterns of prayer frequency and content. *Sociology of Religion, 69*(2), 169-185

Bartholomew, K., & Horowitz, L. M. (1991). Attachment styles among young adults: A test of a four-category model. *Journal of Personality and Social Psychology, 61*(2), 226-244. doi: 10.1037/0022-3514.61.2.226

Beach, S. R. H., Fincham, F. D., Hurt, T. R., McNair, L. M., & Stanley, S. M. (2008). Prayer and marital intervention: A conceptual framework. Journal of Social and Clinical Psychology, 27, 641-669.

Benson, H., Greenwood, M. M., & Klemchuk, H. (1975). Relaxation response: psychophysiologic aspects and clinical applications. *International Journal of Psychiatric Medicine, 6*, 87-98.

Bowlby, J. (1969). *Attachment and loss: Vol. 1. Attachment.* New York: Basic.

Bowlby, J. (1973). *Attachment and loss: Vol. 2. Seperation: Anxiety and anger. .* New York: Basic.

Bowlby, J. (1980). *Attachment and loss: Vol. 3. Loss.* New York: Basic.

Byrd, K. R., & Boe, A. (2001). The correspondence between attachment dimensions and prayer in college students. *International Journal for the Psychology of Religion, 11*(1), 9-24. doi: 10.1207/s15327582ijpr1101_02

Caron, A., Lafontaine, M., Bureau, J., Levesque, C., & Johnson, S. (2012). Comparison of close relationships: An evaluation of relationship quality and patterns of attachment to parents, friends, and romantic partners in young adults. Canadian Journal of Behavioral Science, 44, 245-256.

Dittmer, H. (2005). Compulsive buying – a growing concern? An examination of gender, age, and endorsement of materialistic values as predictors. British Journal of Psychology, 96, 467-491.

Dozier, M., & Lee, S. W. (1995). Discrepancies between self- and other-report of psychiatric symptomatology: Effects of dismissing attachment strategies. *Development and Psychopathology, 7*(1), 217-226. doi: 10.1017/s095457940000643x

Ellison, C. W. & Smith, J. (1991). Toward an integrative measure of health and well-being.

    Journal of Psychology and Theology, 19, 35-48.

Ferguson, J. K., Willemsen, E. W., & Castaneto, M. V. (2010). Centering prayer as a healing

    response to everyday stress. *Pastoral Psychology, 59*, 305-329.

Foster, R. J. (1992). Prayer: Finding the hearts true home. New York, NY: Harper Collins

    Publisher.

Fraley, R. C., & Spieker, S. J. (2003a). Are infant attachment patterns continuously or

    categorically distributed? A taxometric analysis of strange situation behavior.

    Developmental Psychology, 39(3), 387-404. doi: 10.1037/0012-1649.39.3.387

Fraley, R. C., & Spieker, S. J. (2003b). What are the differences between dimensional and

    categorical models of individual differences in attachment? Reply to Cassidy (2003),

    Cummings (2003), Sroufe (2003), and Waters and Beauchaine (2003). *Developmental

    Psychology, 39*(3), 423-429. doi: 10.1037/0012-1649.39.3.423

Francis, L. J. & Brown, L. B. (1991). The influence of home, church and school on prayer

    among sixteen-year-old adolescents in England [Article]. *Review of Religious Research,

    33*(2), 112.

Francis, L. J. & Brown, L. B. (1990). The predisposition to pray: A study of the social influence

    on the predisposition to pray among eleven-year-old children in England. *Journal of

    Empirical Theology, 3*(2), 23-34.

Freud, S. (1927). *Future of an illusions*. Oxford, England: Doubleday.

Freud, S. (1930). *Civilization and its discontents*. Oxford England: Hogarth.

Freud, S. (1939). *Moses and Monotheism*. Oxford, England: Knopf.

Fry, P. S. (1990). A factor analytic investigation of home-bound elderly individuals' concerns about death and dying, and their coping responses. *Journal of Clinical Psychology, 46*(6), 737-748. doi: 10.1002/1097-4679(199011)46:6<737::aid-jclp2270460607>3.0.co;2-l

Gallup Poll. (1987). Religious America. In R. N. 259 (Ed.). Princeton, NJ.

Gallup Poll. (1993). Life magazine survey on prayer. In G. Organization (Ed.). Princeton, NJ: Gallup Organization.

Gallup Poll. (2001). Survey on Religion in America. Retrieved April 9, 2001

Gillum, F. & Griffith, D. M. (2009). Prayer and spiritual Practices for health reasons among American adults: The role of race and ethnicity. *Journal of Religious Health, 49*, 283-295.

Goldberg, S. (2000). *Attachment and development*. London: Arnold.

Goldman, A. L. (1991, April 10). Portrait of religion in U.S. holds dozens of surprises. *The New York Times,* p. pp. A18.

Granqvist, P. (1998). Religious and perceived childhood atttachment: On the question of compensation or correspondence. J*ournal for the Scientific Study of Religion, 37*, 350-367.

Granqvist, P., Ivarsson, T., Broberg, A. G., & Hagekull, B. (2007). Examining relations among attachment, religiosity, and new age spirituality using the Adult Attachment Interview. *Developmental Psychology, 43*(3), 590-601. doi: 10.1037/0012-1649.43.3.590

Granqvist, P. & Kirkpatrick, L. A. (2004). Religious conversion and percieved childhood attachment: A meta analysis. *International Journal for the Psychology of Religion, 14*(4), 223-250.

Greeley, A. M. (1996). *Religion as poetry*. New Brunswick, NJ: Transaction.

Griffin, D. W., & Bartholomew, K. (1994). The metaphysics of measurement: The case of adult attachment. In K. Bartholomew & D. Perlman (Eds.), *Attachment processes in adulthood.* (pp. 17-52). London England: Jessica Kingsley Publishers.

Hamilton, C. E. (2000). Continuity and discontinuity of attachment from infancy through adolescence. *Child Development, 71*(3), 690-694. doi: 10.1111/1467-8624.00177

Hazan, C., & Shaver, P. (1987). Romantic love conceptualized as an attachment process. *Journal of Personality and Social Psychology, 52*(3), 511-524. doi: 10.1037/0022-3514.52.3.511

Heiler, F. (1932). *Prayer; a study in the history and psychology of religion*. Oxford England: Oxford.

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

Hoge, D. R. (1996). Religion in America: The demographics of belief and affiliation. In E. P. Shafranske (Ed.), *Religion and the clinical practice of psychology.* (pp. 21-41). Washington, DC US: American Psychological Association.

Hohmes, T. H. & Rahe, R. H. (1967). The social readjustment rating scale. J*ournal of Psychosomatic Research, 11*, 213-218.

Hunsberger, B. (1976). Background religious denomination, parental emphasis, and the religious orientation of university students. *Journal for the Scientific Study of Religion, 15*(3), 251-255. doi: 10.2307/1386088

Insel, P. M. & Roth, W. T. (1991). *Core concepts in health (6ᵗʰ ed.)*. Palo Alto, CA: Mayfield.

James, W. (1902). *The Varieties of Religious Expereinces*. New York, New York: The Classical Penguin Paperback.

Jung, C. G. (1938). *Psychology and religion*. Oxford England: Yale Univ. Press.

Keating, A. M. & Fretz, B. R. (1990). Christians' anticipation about counselors in response to

    counselors description. *Journal of Counseling Psychology, 31*, 68-76.

Kirkpatrick, L. A. (1992). An attachment-theory approach to the psychology of religion.

    International Journal for the Psychology of Religion, 2(1), 3-28. doi:

    10.1207/s15327582ijpr0201_2

Kirkpatrick, L. A. (1998). God as a substitute attachment figure: A longitudinal study of adult

    attachment style and religious change in college students. *Personality and Social*

    Psychology Bulletin, 24(9), 961-973. doi: 10.1177/0146167298249004

Kirkpatrick, L. A. (2005). *Attachment, evolution, and the psychology of religion*. New York, NY

    US: Guilford Press.

Kirkpatrick, L. A., & Shaver, P. (1992). An Attachment-Theoretical Approach to Romantic Love

    and Religious Belief. *Personality and Social Psychology Bulletin, 18*(3), 266-275.

Kirkpatrick, L. A., Shillito, D. J., & Kellas, S. L. (1999). Loneliness, social support, and

    perceived relationships with God. *Journal of Social and Personal Relationships, 16*(4),

    513-522. doi: 10.1177/0265407599164006

Krause, N., & Chatters, L. M. (2005). Exploring race differences in a multidimensional battery

    of prayer measures among older adults. Sociology of Religion, 66, 23–43.

    doi:10.2307/4153114.

Kurdek, L. A. (2002). On being insecure about the assessment of attachment styles. *Journal of*

    Social and Personal Relationships, 19, 811-834.

Ladd, K. L., Ladd, M. L., Ashbaugh, P., Trnka, D., Harner, J., Pierre, K. S., et al. (2007). Inward,

    outward, upward prayers and personal character. *Research in the Social Scientific Study*

    of Religion, 18, 209-231.

Ladd, K. L., Ladd, M. L., Harner, J., Swanson, T., Metz, T., Pierre, K. S., et al. (2007). Inward, outward, upward prayer and Big Five personality traits. *Archiv für Religionspsychologie/ Archive for the Psychology of Religions, 29*, 151-175. doi: 10.1163/008467207x188711

Ladd, K. L., & Spilka, B. (2002). Inward, outward, and upward: Cognitive aspects of prayer. *Journal for the Scientific Study of Religion, 41*(3), 475-484. doi: 10.1111/1468-5906.00131

Ladd, K. L., & Spilka, B. (2006). Inward, outward, upward prayer: Scale reliability and validation. *Journal for the Scientific Study of Religion, 45*(2), 233-251. doi: 10.1111/j.1468-5906.2006.00303.x

Laird, S. P., Snyder, C. R., Rapoff, M. A., & Green, S. (2004). Measuring private prayer: Development, validation, and clinical application of the multidimensional prayer Inventory. *International Journal for the Psychology of Religion, 14*(4), 251-272. doi: 10.1207/s15327582ijpr1404_2

Lehman, C. (1990, January 30). Faith-based counseling gains favor. Washington Post, pp. B7-B8.

Levin, J. S. & Taylor, R J. (1997). Age differences in patterns and correlates of the frequency of prayer. *The Gerontologist, 37*, 75-88.

Loveland, G. G. (1968). The effects of bereavement on certain religious attitudes and behavior. *Sociological Symposium, 1*, 17-27.

Main, M., Kaplan, N., & Cassidy, J. (1985). Security in infancy, childhood, and adulthood: A move to the level of representation. *Monographs of the Society for Research in Child Development, 50*(1), 66-104. doi: 10.2307/3333827

Main, M., & Solomon, J. (1986). Discovery of an insecure-disorganized/disoriented attachment

    pattern. In T. B. Brazelton & M. W. Yogman (Eds.), *Affective development in infancy.*

    (pp. 95-124). Westport, CT US: Ablex Publishing.

Maltby, J., Lewis, C. A., Day, L. (2008). Prayer and subjective well-being: The application of a

    cognitive-behavioral framework, *Mental Health, Religion & Culture, 11*, 119-129

Masters, K. S., & Spielmans, G. I. (2007). Prayer and health: Review, meta-analysis, and

    research agenda. *Journal of Behavioral Medicine, 30*(4), 329-338. doi: 10.1007/s10865-

    007-9106-7

Mattis, J. S. (2005). Religion in African American Life. In V. C. McLoyd, N. E. Hill & K. A.

    Dodge (Eds.), African American family life: Ecology and cultural diversity. (pp.189-

    210). New York, NY US: Guiford Press.

McCullough, M. E. (1995). Prayer and health: Conceptual issues, research review, and research

    agenda. *Journal of Psychology & Theology, 23*(1), 15-29.

McCullough, M. E., & Worthington, E. L. (1995). College students' perception of a

    psychotherapist's treatment of a religious issue: Partial replication and extension.

    Journal of Counseling and Development, 73, 626-634.

Miller, W. R., Thoresen, C. R. (2003) Spirality, Religion, and Health. *American Psychologist,*

    58, 24-35.

Nicholson, A., Rose, R., & Bobak, M. (2010). Associations between different dimensions of

    religious involvement and self-rated health in diverse European populations. *Health*

    Psychology, 29, 227-235.

Norvilitis, J. M., Merwin, M. M., Osberg, T. M., Roehling, P. V., Young, P., & Kamas M. M.
(2006). Personality factors, money attitudes, financial knowledge, and credit card debt in
college students. Journal of Applied Social Psychology, 36, 1395-1413.

O'Brien, M. (1982). Religious faith and adjustment to long-term hemodialysis. *Journal of
Religion and Health, 21*(1), 68-80.

Pargament, K. I., Ensing, D. S., Falgout, K., Olsen, H., et al. (1990). God help me: I. REligious
coping efforts as predictors of the outcomes to significant negative life events. *American
Journal of Community Psychology, 18*, 793-824.

Poloma, M. M., & Gallup, G. H. (1991). *Varieties of prayer: A survey report.* Philadelphia.

Poloma, M. M., & Pendleton, B. F. (1991). The effects of prayer and prayer experiences on
measures of general well-being. *Journal of Psychology & Theology, 19*(1), 71-83.

Powell, L. H., Shahabi, L., & Thoresen, C. E. (2003). Religion and spirituality: Linkage to
physical health. *American Psychologist, 58*, 36-52.

Pratt, J. B. (1910). An Empirical Study of Prayer. *Amer. J. of Relig. Psychol., 4*, 48-67.

Quackenbos, S., Privette, G., & Klentz, B. (1985). Psychotherapy: Sacred or secular? Journal of
Counseling and Development, 63, 290-293.

Reinert, D. F., Edward. C. E., & Hendrix, R. R. (2009). Attachment theory and religiosity: A
summary of empirical research with implications for counseling Christian clients.
Counseling and Values, 53(2), 112-125.

Roderick, M. (2006). Religion. In Papadopoulos, R. K. (Ed.), *The handbook of Jungian
psychology: Theory, practice, and applications* (296-323). New York, NY: Routledge.

Rohner, R. P. (1976). *They love me, they love me not*. New Haven, CT US: HRAF Press.

Siegert R. J., Ward T., & Hudson S. (1995). The structure remance: A factor-analytic examination of the relatinoship scale questionnaire. *New Zealand Journal of Psychology, 24*, 13-20.

Snyder, C. R. (2000). *Handbook of hope: Theory, measures, and applications*. San Diego, CA US: Academic Press.

Spilka, B., Hood, R. W., Hunsberger, B., & Gorsuch, R. (2003). *The psychology of religion: An empirical approach (3rd ed.)*. New York, NY US: Guilford Press.

Spong, J. S. (2005). *The Sins of Scripture: Exposing the Bible's Texts of Hate ro Reveal the God of Love*. San Francisco, CA: Harper One.

Sroufe, L. A., & Waters, E. (1977). Heart rate as a convergent measure in clinical and developmental research. *Merrill-Palmer Quarterly, 23*(1), 3-27.

Stone, D. N., Weir, B., & Bryant, S. M. (2008). Reducing materialism through financial literacy. CPA Journal, 78, 12-14.

Strong, A. L. (1909). *The Psychology of Prayer*. Oxford, England: Univ. of Chicago Press.

Sue, D. W., & Sue, D. (2008). Counseling the culturally diverse: Theory and practice (5th ed.). Hoboken NJ US: John Wiley & Sons, Inc.

Tamminen, K. (1994). Religious experiences in childhood and adolescence: A viewpoint of religious development between the ages of 7 and 20. *International Journal for the Psychology of Religion, 4*(2), 61-85. doi: 10.1207/s15327582ijpr0402_1

Taylor, R. J., Chatters, L. M., & Levin, J. (2004). Religion in the lives of African Americans: Social, psychological and health perspectives. Thousand Oaks, CA: Sage Publications Inc.

University of Nebraska - Kearny (2012). Fall Headcount Enrollment by Ethnicity (data file).

Retrieved from http://www.unk.edu/uploadedFiles/factbook/enrollment/Ethnicity(1).pdf.

Waters, E., Merrick, S., Treboux, D., Crowell, J., & Albersheim, L. (2000). Attachment security

    in infancy and early adulthood: A twenty-year longitudinal study. *Child Development,*

    71(3), 684-689. doi: 10.1111/1467-8624.00176

Waters, E., Beauchaine, T. P. (2003) Are there really patterns of attachment? comment on Fraley

    and Spieker (2003). *Developmental Psychology, 39*, 417-422.

Wulff, D. M. (2006). How attachmeed should we be to attachment theory? T*he International*

    Journal for the Psychology of Religion, 16, 29-36.

Appendix A

How often do you spend time just "feeling" or being in the presence of God.

1	2	3	4	5	6	7
Never			Sometimes			Always

How often do you spend time just quietly thinking about God?

1	2	3	4	5	6	7
Never			Sometimes			Always

How often do you spend time worshiping or adoring God?

1	2	3	4	5	6	7
Never			Sometimes			Always

How often do you spend time reflecting on the Bible (or other sacred text)?

1	2	3	4	5	6	7
Never			Sometimes			Always

Ask God to speak and then listen for his answer?

1	2	3	4	5	6	7
Never			Sometimes			Always

How often do you read from a book of prayers?

1	2	3	4	5	6	7
Never			Sometimes			Always

How often do you recite prayers that you have memorized?

1	2	3	4	5	6	7
Never			Sometimes			Always

How often do you ask for material things that you may need?

1	2	3	4	5	6	7
Never			Sometimes			Always

How often do you ask for material things that your friends or relatives may need?

1	2	3	4	5	6	7
Never			Sometimes			Always

How often do you ask for God to provide guidance in making decisions?

1	2	3	4	5	6	7
Never			Sometimes			Always

How often do you thank God for his blessings?

1	2	3	4	5	6	7
Never			Sometimes			Always

How often do you ask God to forgive you for your sins?

1	2	3	4	5	6	7
Never			Sometimes			Always

How often do you talk with God in your own words?

1	2	3	4	5	6	7
Never			Sometimes			Always

How often do you ask God to lessen world suffering?

1	2	3	4	5	6	7
Never			Sometimes			Always

How often do you spend time telling God how much you love him?

1	2	3	4	5	6	7
Never			Sometimes			Always

Appendix B

Please use the scale below to indicate the degree to which you THINK about each of the following words or phrases during your own prayer.

Never think about *During Prayer*				*Always think about* *During Prayer*	
1	*2*	*3*	*4*	*5*	*6*

_____ devoting myself

_____ stillness

_____ engaging in rituals

_____ examining myself

_____ silence

_____ seeking assistance for others

_____ misery

_____ accepting the pain of others

_____ radical approaching

_____ grieving

_____ agonizing with others

_____ assertiveness

_____ connecting with traditions

_____ committing

_____ asking for help for other people

_____ judging myself

_____ seeking to be revolutionary

_____ making personal appeals

_____ carrying the distress of other people

_____ exploring sacraments

_____ searching on behalf of someone else

_____ quietude

_____ evaluating my inner life

_____ requesting material things

_____ sadness

_____ boldness

_____ asking for things I need

_____ private experiences

_____ asking for physical things to be me

Appendix C

Directions: Using the scale provided below please answer the following questions according to how often **during the past month** your prayers included each of the activities described below. For example, if you circle the number "4", this indicates that "About half of the time" your prayers **during the past month** included the described activity. (Note: Some prayers combine these different activities. Also, do not be concerned if some of the items appear to overlap with one another.)

	Never	Little of the time	Some of the time	About half of the time	Much of the time	Most of the time	All of the time
	1	2	3	4	5	6	7

1. I made specific request.

    1   2   3   4   5   6   7

2. I offered thanks for specific things.

    1   2   3   4   5   6   7

3. I tried to be open to receiving new understanding of my problems.

    1   2   3   4   5   6   7

4. I worshiped God.

    1   2   3   4   5   6   7

5. I admitted inappropriate thoughts, feelings, and behaviors.

    1   2   3   4   5   6   7

6. I expressed my appreciation for my circumstances.

    1   2   3   4   5   6   7

7. I tried to be receptive to wisdom and guidance.

    1   2   3   4   5   6   7

8. I made various requests of God.

    1   2   3   4   5   6   7

9. I confessed things that I had done wrong.

    1   2   3   4   5   6   7

10. I praised God.
    1   2   3   4   5   6   7

11. I opened myself up to God for insight into my problems.
    1   2   3   4   5   6   7

12. I thanked God for things occurring in my daily life.
    1   2   3   4   5   6   7

13. I asked for assistance with my daily problems.
    1   2   3   4   5   6   7

14. I acknowledged faults and misbehavior.
    1   2   3   4   5   6   7

15. I devoted time to honoring the positive qualities of God.
    1   2   3   4   5   6   7

Appendix D

Please read each of the following statements and rate the extent to which you believe each

statement best describes your feelings about <u>close relationships</u>.

1. I find it difficult to depend on other people (Fear)

1	2	3	4	5
Not at all like me				Very like me

2. It is very important to me to feel independent (Dis)

1	2	3	4	5
Not at all like me				Very like me

3. I find it easy to get emotionally close to others (Sec)

1	2	3	4	5
Not at all like me				Very like me

4. I want to merge completely with another person.

1	2	3	4	5
Not at all like me				Very like me

5. I worry that I will be hurt if I allow myself to become too close to others (Fear)

1	2	3	4	5
Not at all like me				Very like me

6. I am comfortable without close emotional relationships. (Dis, Pre-R)

1	2	3	4	5
Not at all like me				Very like me

7. I am not sure that I can always depend on others to be there when I need them.

1	2	3	4	5
Not at all like me				Very like me

8. I want to be completely emotionally intimate with others.

1	2	3	4	5
Not at all like me				Very like me

9. I worry about being alone. (Sec-R)

1	2	3	4	5
Not at all like me				Very like me

10. I am comfortable depending on other people. (Sec)

1	2	3	4	5
Not at all like me				Very like me

11. I often worry that romantic partners do not really love me.

1	2	3	4	5
Not at all like me				Very like me

12. I find it difficult to trust others completely. (Fear)

1	2	3	4	5
Not at all like me				Very like me

13. I worry about others getting to close to me.

1	2	3	4	5
Not at all like me				Very like me

14. I want emotionally close relationships.

1	2	3	4	5
Not at all like me				Very like me

15. I am comfortable having people depend on me. (Sec)

1	2	3	4	5
Not at all like me				Very like me

16. I worry that others don't value me as much as I value them. (Pre)

1	2	3	4	5
Not at all like me				Very like me

17. People are never there when you need them.

1	2	3	4	5
Not at all like me				Very like me

18. My desire to merge completely sometimes scares people away.

1	2	3	4	5
Not at all like me				Very like me

19. It is important to me to feel self0sufficient. (Dis)

1	2	3	4	5
Not at all like me				Very like me

20. I am nervous when anyone gets too close to me.

1	2	3	4	5
Not at all like me				Very like me

21. I often worry that romantic partners won't want to stay with me.

1	2	3	4	5
Not at all like me				Very like me

22. I prefer not to have other people depend on me. (Dis)

1	2	3	4	5
Not at all like me				Very like me

23. I worry about being abandoned.

1	2	3	4	5
Not at all like me				Very like me

24. I am uncomfortable being close to others. (Fear)

1	2	3	4	5
Not at all like me				Very like me

25. I find that others are reluctant to get as close as I would like. (Pre)

1	2	3	4	5
Not at all like me				Very like me

26. I prefer not to depend on others. (Dis)

       1   2   3   4   5
  Not at all   Very like me
   like me

27. I know that others will be there when I need them.

       1   2   3   4   5
  Not at all   Very like me
   like me

28. I worry about having others not accept me. (Sec-R)

       1   2   3   4   5
  Not at all   Very like me
   like me

29. Romantic partners often want me to be closer than I feel comfortable being.

       1   2   3   4   5
  Not at all   Very like me
   like me

30. I find it relatively easy to get close to others.

       1   2   3   4   5
  Not at all   Very like me
   like me

Appendix E

Please complete the following questions about yourself. Click on the bubble next to the response that best describes you. You may choose more than one bubble if applicable. For any items without bubbles, indicate your response in the area provided.

Age (just enter a number)

Gender: Male   Female

Race

1. White/Caucasian/European-American

2. Black/African-American

3. Black/ African

4. Black/ Caribbean

5. Black/ Caribbean-American

6. Hispanic/Latino(a)

7. Native American/American

8. Indian Asian/Asian American

9. Biracial/Multiracial

10. Other (please specify) _____

Please indicate where you would place your beliefs.
1. My religious beliefs are most closely related to (**Check One**):

Catholicism: _____

Protestantism:

Baptist ____   Episcopalian_____   Methodist_____

LDS (Morman)____ Lutheran_____   Presbyterian____

Other Protestant (please specify) _____

Judaism

Conservative_____   Reformed _____   Orthodox

Buddhism_____

Hinduism_____

Muslim_____

New Age_____

Atheism_____

Agnosticism_____

Other (please specify)_____

How often did you attend religious services during your elementary school years?

1	2	3	4	5	6	7
Never			Once a Month			More than Once A Week

How often did you attend religious services during your middle school years?

1	2	3	4	5	6	7
Never			Once a Month			More than Once A Week

Appendix F

Check the items that occurred the last six months or expect to occur in the next 6 months:

1. Death of a close family member ____

2. Death of a close friend ____

3. Divorce between parents ____

4. Jail term ____

5. Major personal injury or illness ____

6. Marriage ____

7. Fired from job ____

8. Failed important course ____

9. Change in health of a family member ____

10. Pregnancy ____

11. Sex problems ____

12. Serious argument with close friend ____

13. Change in financial status ____

14. Change of major ____

15. Trouble with parents ____

16. New girl or boyfriend ____

17. Increased workload at school ____

18. Outstanding personal achievement ____

19. First quarter/semester in college ____

20. Change in living conditions ____

21. Serious argument with instructor ____

22. Lower grades than expected ____

23. Change in sleeping habits ____

24. Change in social activities ____

25. Change in eating habits ____

26. Chronic car trouble ____

27. Change in number of family get togethers ____

28. Too many missed classes ____

29. Change of college ____

30. Dropped more than one class ____

31. Minor traffic violations ____

Appendix G

You are being invited to participate in a web-based research study on prayer and close relationships. This research is being conducted by doctoral student, Nathan A. Lamkin and Dr. Patrick Bennett of the Psychology Department at Indiana State University. Your participation in this study is entirely voluntary. Please read the information below prior to deciding whether or not you will participate in the study.

If you choose to participate in this study, you will be asked to answer online questionnaires about your how you pray, if you do, and how you describe your feelings about close relationships. Most items will ask you to click on the bubble(s) next to the appropriate response. A few items may ask for "fill in the blank" responses that may require using the keyboard to type in a short response (e.g., a number). The total time that is needed to read and fill out the questionnaires should not exceed 30-45 minutes. The software will inform you when the study is complete. If agreed upon by your instructor, you will receive class credit for participation in this study.

Efforts will be made to keep your identification and responses strictly anonymous and confidential. At no time will you be asked to put any identification with your responses. The software being used for the study specializes in Internet-based research, and is designed to enhance the privacy of all participants. All data collected will be kept in a secure database designed to maintain anonymity of internet-based research. The University's online experiment system will track your participation for the purpose of receiving extra credit; however, this information is separate from the software used to record and store your responses.

You can choose whether or not to participate in this study. If you volunteer to be in this study, you may withdraw at any time without consequences of any kind or loss of credit to which you are otherwise entitled. You may do so by closing your browser at any point during the study. You may also refuse to answer any questions you do not wish to answer. Regardless of your participation, you will not be contacted in any way by the researchers.

Risks of participation are minimal and are not expected to be greater than what you would encounter in day-to-day activities. You may experience some mild anxiety when completing some of the questions due to examining your own beliefs. By participating in this experiment you may benefit by learning about scientific psychological research and having a chance to explore some of your beliefs and reactions. In addition, the benefits to society include the contribution to our understanding of prayer and close relationships.

This project has been reviewed and approved by the Institutional Review Board (IRB) of Indiana State University as adequately safeguarding the participant's privacy, welfare, civil liberties, and rights. If you have any questions about your rights as a research subject, you may contact the Indiana State University Institutional Review Board (IRB) by mail at 114 Erickson Hall, Terre Haute, IN 47809, by phone at (812) 237-8217, or e-mail the IRB at irb@indstate.edu.

Any questions or concerns about this research can be directed toward the primary researcher, Nathan A. Lamkin, in the ISU Psychology Clinic at 812-237-3317, or by email, nathan.lamkin@indstate.edu. The project supervisor, Patrick Bennett, can also be contacted in the Department of Psychology at 812-237-2446, or by e-mail at patrick.bennett@indstate.edu.

By clicking 'yes' below, you are confirming that you are at least 18 years old, and that you understand the information described above. In addition, you are agreeing to participate in this study. Before beginning the study, you may print a copy of this consent form for your records. If you do not choose to participate, you may now close the browser.

Appendix H

Thank you for your participation! In this study, we are interested in college students' perceptions of children of different races, including multiracial children. If you have any questions about the study or if you are interested in the results of the study, you can email the primary researcher, Nathan A. Lamkin, at nathan.lamkin@indstate.edu. If you experience any distress as a result of participating in this study, you can access psychological services at the University's Student Counseling Center (812-237-3939) or the Psychology Clinic in Root Hall (812-237-3317). Also, please do not discuss this study with your friends or other undergraduate students, because it may influence their responding if they participate in the future.

Table 1

Descriptive Statistics for Scores on all Study Measures

Variable	Range of Measure	Range of Scores	Mean	Standard Deviation	Cronbach's Alpha Level
MPI: Supplications	3-21	3-21	13.94	4.44	0.81
MPI: Receptive	3-21	3-21	13.74	4.97	0.86
PQ: Meditative	5-20	5-20	12.84	3.63	0.85
PQ: Petitionary	2-8	2-8	4.73	1.69	0.78
PQ: Colloquial	6-24	6-24	18.05	4.54	0.87
IOUPM: Rest	4-24	4-24	13.09	4.88	0.75
IOUPM: Petitionary	4-24	4-24	13.03	4.96	0.83
RSQ: Avoidant	5-25	5-25	13.94	4.77	0.83
RSQ: Anxious	6-30	6-30	17.89	5.61	0.86
SSS Total	0-1277	29-834	301.01	149.72	_____
Early Religious Involvement: Elementary	1-7	1-7	5.24	1.94	_____
Early Religious Involvement: Middle School	1-7	1-7	4.96	1.90	_____

Table 2

Zero order correlations between prayer and attachment styles.

	PQ: M	PQ: C	PQ: P	MPI: R	MPI: S	IOUPM: R	IOUPM: P	RSQ - Avoid	RSQ - Anxious
PQ: M	1	.772*	.300*	.702*	.497*	.570*	.377	.015	.007
PQ: C		1	.346*	.717*	.591*	.602*	.454	.037	.018
PQ: P			1	.237*	.351*	.370*	.629*	.199*	.200*
MPI: R				1	.628*	.515*	.372*	.043	.117
MPI: S					1	.442*	.522*	.031	.050
IOUPM: R						1	.580*	.224*	.191*
IOUPM: P							1	.223*	.239*
RSQ: Avoid								1	.709*
RSQ: Anxious									1

Note. Prayer Questionnaire: Meditative (PQ: M), Prayer Questionnaire: Colloquial (PQ: C), Multidimensional Prayer Inventory: Receptive (MPI: R), Multidimensional Prayer Inventory: Supplication (MPI – S), Inward Outward Upward Prayer Model: Rest (IOUPM: R), Inward Outward Upward Prayer Model: Petition (IOUPM:P), Relationship Scale Questionnaire: Avoidant (RSQ: Avoid), Relationship Scale Questionnaire: Anxious (RSQ: Anxious).

*$p < .01$

Table 3

Correlation between prayer styles, stress, early religious involvement, and demographic

variables.

Demographic Variable	PQ: M	PQ: C	PQ: P	MPI: R	MPI: S	IOUPM: R	IOUPM: P
SSS	.032	-.026	.024	.032	.049	-.005	.054
ERI: Elem	.263**	.315**	.015	.226**	.246**	.053	.008
ERI: MS	.214**	.267**	-.063	.194**	.163**	.064	.018
Age	.156*	.179*	.113	.131	.048	.206**	.082
Gender (Male)	-.014	-.044	.040	-.056	-.031	.098	.002
Race (Caucasian)	-.206**	-.226**	-.173*	-.200**	-.096	-.120	-.261**

Note. Prayer Questionnaire: Meditative (PQ: M), Prayer Questionnaire: Colloquial (PQ: C),

Multidimensional Prayer Inventory: Receptive (MPI: R), Multidimensional Prayer Inventory:

Supplication (MPI – S), Inward Outward Upward Prayer Model: Rest (IOUPM: R), Inward

Outward Upward Prayer Model: Petition (IOUPM:P), Student Stress Scale (SSS), Early

Religious Involvement: Elementary (ERI: Elem), Early Religious Involvement: Middle School

(ERI: MS).

* p < .05, ** p < .01.

Table 4

Correlation between attachment variables, stress, early religious involvement, and demographic variables.

Demographic Variable	RSQ: Avoidant	RSQ: Anxious
SSS	.279**	.253**
ERI: Elem	-.097	-.044
ERI: MS	-.130	-.075
Age	.114	.154*
Gender (Male)	-.027	-.057
Race (Caucasian)	-.267**	-.044

Note: Relationship Scale Questionnaire: Avoidant (RSQ: Avoidant), Relationship Scale Questionnaire: Anxious (RSQ: Anxious) Student Stress Scale (SSS), Early Religious Involvement: Elementary (ERI: Elem), Early Religious Involvement: Middle School (ERI: MS).

*p < .05, **p< .01.

Table 5

Hierarchical Regression of avoidant dimension and other variables predicting Rest prayer from the Inward Outward Upward Prayer Model.

	Step 1 Beta (SE)	Step 2 Beta (SE)	Step 3 Beta (SE)
RSQ – Avoidant	.168 (.054)**	.192 (.057)**	.165 (.058)**
Early Religious Involvement & Stress			
ERI – Elementary School		.060 (.255)	.076 (.255)
ERI – Middle School		.212 (.261)	.197 (.258)
SSS		-.003 (.002)	-.002 (.002)
Demographics			
Age			.707 (.279)*
Race (Caucasian)			-.512 (.714)
Adjusted R^2 (F score)	.045 (9.734)**	.044 (3.099)*	.070 (3.299)**

Note. DF = 6, 176. Relationship Scale Questionnaire (RSQ), Early Religious Involvement (ERI), Student Stress Scale (SSS).

*p < .05, **p < .01

Table 6

Hierarchical Regression of anxious dimension and other variables predicting Petitionary prayer

from the Prayer Questionnaire.

	Step 1	Step 2	Step 3
	Beta (SE)	Beta (SE)	Beta (SE)
RSQ – Anxious	.036 (.013)***	.036 (.013)***	.033 (.013)**
Early Religious Involvement & Stress			
ERI – Elementary School		.118 (.091)	.104 (.091)
ERI – Middle School		-.108 (.093)	-.103 (.093)
SSS		.000 (.001)	.000 (.001)
Demographics			
Age			.115 (.099)
Race (Caucasian)			-.518 (.265)*
Adjusted R^2 (F score)	.036 (7.882)**	.030 (2.411)**	.049 (2.563)**

Note. DF = 6, 178. Relationship Scale Questionnaire (RSQ), Early Religious Involvement

(ERI), Student Stress Scale (SSS).

- *p = .053, **p < .05, ***p < .01.

Table 7

Hierarchical Regression of anxious dimension and other variables predicting Petition prayer

from the Inward Outward Upward Prayer Model.

	Step 1	Step 2	Step 3
	Beta (SE)	Beta (SE)	Beta (SE)
RSQ – Anxious	.120 (.037)**	.121 (.039)**	.117 (.039)**
Early Religious Involvement & Stress			
ERI – Elementary School		.022 (.262)	-.073 (.258)
ERI – Middle School		.147 (.270)	.198 (.266)
SSS		.000 (.002)	-.001 (.002)
Demographics			
Age			.140 (.284)
Race (Caucasian)			-2.456 (.760)**
Adjusted R^2 (F score)	.049 (10.318)**	.037 (2.728)*	.083 (3.745)**

*Note. DF = 6, 175*Relationship Scale Questionnaire (RSQ), Early Religious Involvement (ERI),

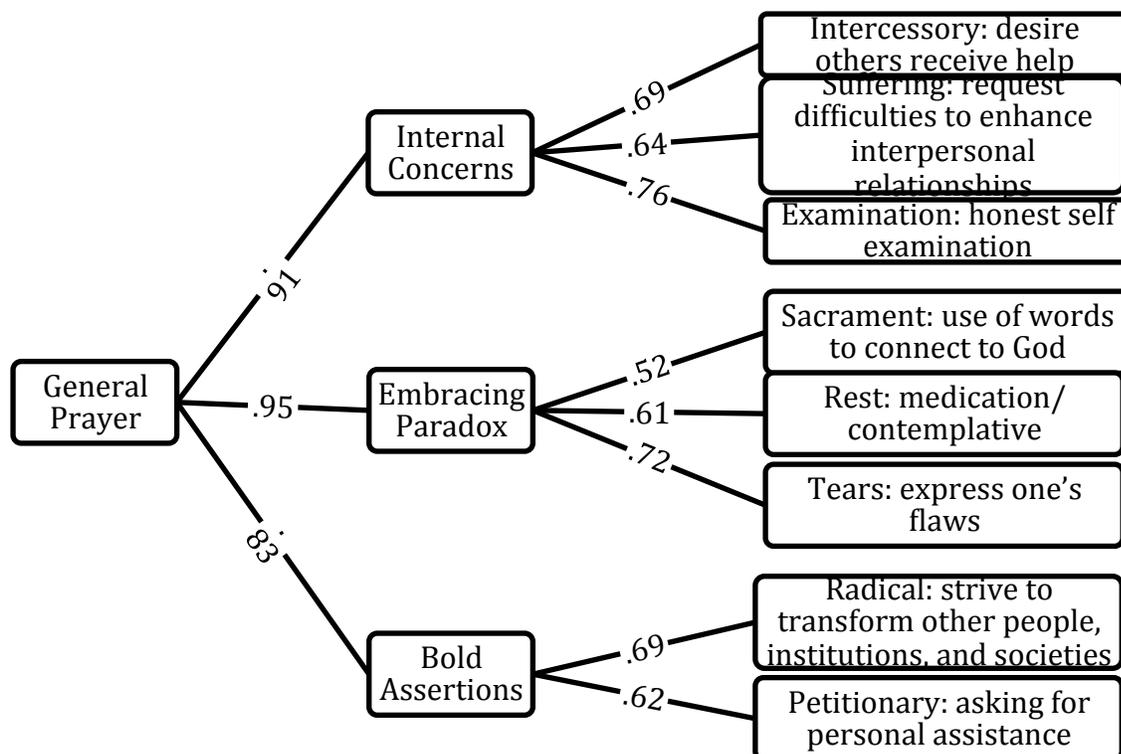Student Stress Scale (SSS).

*p < .05, **p < .01.

Figure 1. Correlation between factors and prayer themes in the Inward Outward Upward Prayer Model.

Attachment Measure	Method	Age	Secure	Insecure		
Strong Situation	Observation	Infancy/Childhood	Secure	Avoidant	Anxious/ Ambivalent	Disorganized
Adult Attachment Interview	Interview	Adult	Autonomous	Dismissing	Preoccupied	N/A
Hazan & Shavor	Self-report	Adult	Secure	Avoidant	Anxious	N/A
Relationship Questionnaire	Self-report	Adult	Secure	Dismissing	Preoccupied	Fearful

Figure 2. Attachment style organization and terms across different measures and how they relate

to one another.

	Positive IWM of self	Negative IWM of self
Positive IWM of others	Secure (Positive view of self and others) Self: Perceive God more loving and caring Others: Perceive God as close and personal	Preoccupied (Negative view of self; Positive view of others) Self: Perceive God less loving and caring Others: Perceive God as distant and impersonal
Negative IWM of others	Dismissing (Positive view of self; Negative view of others) Self: Perceive God as more loving and caring Others: Perceive God as distant and impersonal	Fearful (Negative view of self and others) Self: Perceive God as less loving and caring Others: Perceive God as distant and impersonal

Figure 3. Individual differences in perception of God as a function of adult attachment styles.