

Trust-Based Prayer Expectancies, Attachment to God, and Perceived Stress

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Abstract

The current study analyzed the impact of trust-based prayer expectancies on the relationship between attachment to God and perceived stress levels. High trust-based prayer expectancies indicate a high trust in God to answer prayers in His time and in His way. It was hypothesized that trust-based prayer expectancies would mediate the relationship between attachment to God and perceived stress, since prayer expectancies are heavily reliant on trust in and a belief that God is a secure base. Three-hundred fifteen college students were surveyed on their trust-based prayer beliefs, perceived stress, and attachment to God. Results of the study indicated a significant indirect effect in which avoidance in one's attachment to God predicted perceived stress by way of trust-based prayer expectancies. However, there was not a significant indirect effect linking anxiety in one's attachment to God and perceived stress by way of trust-based prayer expectancies. Implications of the research suggest that trust-based prayer expectancies may be useful in reducing stress for individuals with avoidant attachment styles. Other possible mediators of the relationship between attachment to God and perceived stress may exist.

Trust-Based Prayer Expectancies, Attachment to God, and Perceived Stress

The effects of stress on emotional and physical health have been studied in the past. The burden of stress can lead to compromising behaviors that are damaging to the individual. However, positive coping mechanisms can be used to buffer against stressful events. The religious coping mechanism of prayer has been shown effective in reducing stress, and the current study looked specifically at trust-based prayer expectancies. Trust-based prayer expectancies function within a close relationship with God in which an individual believes God will answer prayer in His time and His way. Due to the preceding variable of closeness to God, the current study examined the relationship of avoidance and anxiety levels in one's attachment to God and perceived stress levels by way of trust-based prayer expectancies.

Stress

College students are known to have high levels of stress, and for a variety of reasons. College students find themselves burdened with academic, social, financial, and emotional stressors that can become overwhelming. In a study by Brougham, Zail, Mendoza, and Miller (2009), college students were examined to determine their main sources of stress. A sample of 166 students took a survey consisting of the Student Stress Assessment that measured five sources of stress (academics, familial relationships, finances, daily hassles, and social relationships). Results of the study indicated that in general, female students had higher levels of stress than male students. Specifically, women reported having more stress because of familial relationships, finances, daily hassles, and social relationships. Both men and women reported high stress due to

academics. It is also important to note that perceived stress, or stress that is imagined, can be just as harmful as actual pressures, such as academics. Hamaideh (2011) determined that stress that occurs in the lives of college students is due to both perceived and actual pressures, changes, conflicts, and self-imposed situations.

In one study regarding stress by Leppink, Odlaug, Lust, Christenson, and Grant (2016), 63% ($N = 1805$) of a college population reported being moderately to severely stressed. The researchers assessed the impact of severe perceived stress and found it had harmful effects on the mental health of college students. They developed The College Student Computer User Survey (CSCUS) to assess a variety of mental health and physical health related issues in college students. The survey consisted of questions regarding health history and academic achievement. In addition to this test, the Perceived Stress Scale, Internet Addiction Test, Patient Health Questionnaire, and Minnesota Impulsive Disorders Interview were used to collect data on mental health and stress responses. Students who were rated as experiencing moderate to severe stress indicated poorer physical health, mental health, academic achievement, and higher level of depressive symptoms than those experiencing mild stress. In addition to depressive symptoms, stress was associated with anxiety disorders, eating disorders, substance abuse, and panic disorder.

In response to perceived stress, students may resort to using stress-relieving behaviors that are harmful and counterproductive. In the study by Leppink et al. (2016), participants who had high levels of perceived stress showed higher rates of impulse control disorders. Specifically, participants who experienced severe stress were found to have excessive and negative internet use, compulsive buying, and problematic sexual

behavior patterns. Daily stress is unavoidable, but using positive coping mechanisms can make stress seem less intimidating.

Coping

Coping strategies are methods of preventing or relieving stress. Folkman and Moskowitz (2004) defined coping as the management of internal and external demands caused by stressful situations. Coping strategies include thoughts and behaviors that allow for, but are not limited to, emotional regulation, social support, problem solving, and rationalizing. Understanding the differences in coping strategies is important because not all coping mechanisms are equal in effect. A strategy that works for one stressful event may not work for a different event. Broughman et al. (2009) examined how college students used different coping mechanisms for different stressors. A sample of 166 college students (female = 96, male = 70) were surveyed using the COPE inventory and student stress scale. The COPE inventory measures the use of self-help, accommodation, approach, avoidance, and self-punishing coping mechanisms. Women tended to use self-help and self-punishment strategies to cope with stress more often than men. Men, on the other hand, used various coping strategies dependent upon the stressor itself. Men were more likely to use avoidance techniques and self-punishment strategies for academic stressors and daily stressors. Males also used avoidance techniques, self-punishment strategies, and self-help for family stressors and social relationships (Broughman et al., 2009).

Religious Coping

Religious coping mechanisms have been found to be a vital source of help for those in stressful situations. This method of coping involves the belief in and reliance on

God to buffer against the stressors of life. Belief in God plays a role in how some individuals assess the intensity of stress and the way some individuals respond to stress. Religious coping can be helpful for immediate relief from stressful situations. Specifically, it can give the individual confidence to endure and it can give meaning to hardships (Folkman & Moskowitz, 2004). For example, Merrill, Read, and LeChemiant, (2009) found that faith acted as a buffer for stress, and provided meaning and purpose to life, as well as comfort. Merrill et al. surveyed 742 college students using the Perceived Stress Scale to measure stress and the Santa Clara Strength of Religious Faith questionnaire to measure level of religiosity, by means of faith and belief in God. Faith, or a life's purpose, was predictive in viewing stress as an opportunity for growth. Religiosity, or a belief in God, was positively correlated with the student feeling in control and able to handle life's stressors (Merrill et al., 2009).

Religious coping was categorized into positive and negative methods by Pargament, Smith, Koenig, and Perez (1998). Positive religious coping involves spiritual expression, a secure relationship with God, a belief in life's meaning and purpose, and spiritual connection with others. Such factors of positive religious coping can be classified as seeking spiritual support, practicing forgiveness, and involvement in spiritual fellowship. Negative religious coping encompasses an insecure relationship with God, a cynical view of life, and a struggle to find significance. Results from a study on 1,260 middle-aged clergy members (80% = male, 20% = female) by Pargament, Tarakeshwar, Ellison, and Wulff (2001) suggested that the clergy sampled had a lower rate of depression and a higher rate of religious satisfaction than the general congregation ($N = 735$) due to their use of positive religious coping mechanisms. The study indicated a

difference in the use of positive and negative religious coping strategies and closeness to God. Specifically, positive religious coping strategies were correlated with a close relationship with God, and negative strategies were correlated with feeling abandoned by or angry with God.

Research shows the benefits of positive religious coping mechanisms. Practicing positive religious coping strategies was correlated with better mental health outcomes in a meta-analysis of 49 studies by Ano and Vasconcelles (2004). They found that positive religious coping mechanisms, such as seeking spiritual support and collaborative religious coping, were related to better adjustment to stress and growth from stress. Those who practiced negative religious strategies, such as religious avoidance and blaming the Devil for circumstances, experienced more anxiety, depression, and distress from stressful situations. Results from the meta-analysis also implied that negative religious coping, though harmful, can lead to some benefits, such as spiritual growth (Ano & Vasconcelles, 2004).

Some individuals find religious coping to be a means of problem solving, by asking for God's help, rather than simply a source of meaning or social support (Bjorck & Cohen, 1993). Surrendering to God is an example of problem solving. In a study conducted by Clements and Ermakova (2012), a sample of 460 college students and 230 pregnant women were measured on their stress levels and habits of surrender. Surrender was predicted to reduce the amount of perceived stress because the individual surrendering feels as if another individual, in this case God, is in control. Clements and Ermakova found that participants who practiced surrender reported lower levels of stress

than those who did not practice surrender. Surrendering to God is often done through prayer.

Prayer

Prayer is a form of religious coping that involves communication with God. LaBarbera and Hetzel (2015) found an association between prayer frequency and stress. A sample of 916 Christian educators from around the world were surveyed regarding perceived sources of work-related stress, job satisfaction, and their use of prayer. The sample was drawn from a larger set of participants involved with the Association of Christian Schools International. The teachers completed a survey consisting of qualitative open-ended questions and quantitative multiple choice questions to determine the influence of prayer on job satisfaction and stress. Fifty-six percent of the sample stated that prayer was the spiritual discipline they found most important in their lives and 88% stated they prayed on a regular basis. In regard to prayer as a coping mechanism, there was a negative relationship found between job-related stress and frequency of prayer. Teachers more apt to pray daily were more likely to build resilience to stress and stay satisfied with their current job (LaBarbera & Hetzel, 2015).

Other research has shown the impact of not just the frequency of prayer on stress, but also the quality of prayer on stress. Poloma and Pendleton (1989) conducted research on the quality of prayer and stress. They categorized prayer into four types: meditative, colloquial, petitionary, and ritual. Meditative prayer is a prayer of reflection on God that elicits intimacy with God. Colloquial prayer is characterized by a conversational-natured prayer to a higher being. Petitionary prayer involves the presentation of requests to God. Ritualistic prayer is praying a recited or memorized prayer.

Poloma and Pendleton (1989) surveyed 560 adults using the Akron Area Survey, which included a religious dimension. Participants answered questions regarding religious experiences in prayer, religious satisfaction, and private prayer activities (consisting of the four prayer types). Out of the four prayer types, Poloma and Pendleton found that ritualistic prayer—prayer that is recited from written material or memory—was associated with negative emotions. Those who primarily used ritualistic prayer felt lonely, sad, depressed, and tense. However, colloquial prayer—prayer that is conversational in nature and includes aspects of petition, thanksgiving, and adoration—was associated with happiness in participants. Meditative prayer also was associated with positive effects on the individual, as it was predictive of positive existential well-being and religious satisfaction (Poloma & Pendleton, 1989).

Meditative and colloquial prayer are focused on God rather than focused on what the individual desires from God. This distinction in the prayer types can explain the positive effect of colloquial and meditative prayer. Generally, it has been seen that individuals who participate in frequent colloquial and meditative prayer benefit from prayer through increases in happiness and well-being (Poloma & Pendleton, 1989). These individuals may have a more God-centered approach to prayer, where they may hold more to the belief that God will answer prayer in His time and His way. However, due to the correlational nature of the research, the opposite may be true, where individuals with a positive well-being may be more likely to partake in God-centered prayer.

Jeppsen, Pospel, Winkeljohn Black, Bjerg, and Wooldridge (2015) took the importance of personal prayer into consideration while measuring the impact of prayer on stress. In their study, 330 participants (77% = female, 23% = male, average age = 37.5)

were surveyed to better understand the association between closeness to God, God-mediated control, and prayer. Colloquial, meditative, petitionary, and ritual prayer were measured using the Prayer Types Scale. Belief about personal control and God-mediated control was measured through the Belief in Personal Control Scale, and closeness to God was measured using a three-question scale about attachment.

Results from the study by Jeppsen et al. (2015) indicated that colloquial and meditative prayer were associated with better mental health, as measured by emotional distress, whereas petitionary prayer was associated with poorer mental health. Although poor mental health may have been present in participants before data were collected on individuals who use petitionary prayer, the research showed that petitionary prayer did not have same the element of closeness to God as the other prayer types. Closeness to God was found to mediate the positive relationship between colloquial and meditative prayer types and mental health. Closeness to God did not mediate the relationship between petitionary prayer and mental health. Jeppsen et al. suggested that unlike petitionary prayer, both colloquial and meditative prayers are conversationally based and function as a two-way relationship. Such a relationship gives the individual a sense of power and ability to overcome difficulty with the help of an omnipotent God (Jeppsen et al., 2015).

Jeppsen et al. (2015) also found that God-mediated control, or a trust in God to provide, mediated a positive relationship between petitionary, colloquial, and meditative prayer and mental health. God-mediated control functioned as a coping strategy to reduce mental distress, but it was found that petitionary prayer only functioned as a coping strategy when the prayers were answered. When both closeness to God and God-

mediated control were together tested as mediators between prayer type and mental health, only closeness to God was reported as significant. Results from this study show the significance of understanding the influence of closeness to God and trust in God on how individuals pray. These results indicate that individuals using prayer cope best when they experience a secure closeness to God.

Ellison, Bradshaw, Flannelly, and Galek (2014) found that individuals who have a positive relationship with God benefitted from prayer. They collected data from 1,511 participants (54% = female, 46% = male, average age = 56) using scales measuring general anxiety disorder, social anxiety disorder, and obsessive compulsive disorder. The participants also answered questions regarding frequency of prayer and attachment to God. Participants who prayed more were found to have a more trusting and strong relationship with God. On the other hand, those who viewed God as distant and cold were less likely to pray. These relationships between relationship with God and prayer were associated with mental health. A secure relationship and higher prayer frequency indicated better mental health whereas the opposite indicated poorer mental health.

Prior research has found there was a positive correlation of praying frequently and stress reduction and a positive correlation of praying focused on God and stress reduction (Ellison et al., 2014; Jeppsen et al., 2015; LaBarbera & Hetzel, 2015; Poloma & Pendleton, 1989). However, little research has been devoted to prayer expectancies. Prayer expectancies focus on the way an individual expects prayer to be answered. When an individual prays, the individual expects either the prayer to be answered by God, or the prayer not to be answered by God. Possel, Winkeljohn Black, Bjerg, Jeppsen, and Wooldridge (2014) explained that prayer expectations require trust, and thus named this

concept trust-based prayer expectancies. Individuals who have high trust-based prayer expectancies believe God will answer prayer in His time and in His way whereas those with low trust-based prayer expectancies assume God will not answer prayer.

Krause (2004) developed the idea of trust-based prayer expectancies through researching the connection between trust in God, answered prayer, and mental health. The concept behind trust-based prayer expectancies is the timing of answered prayers and the way prayers are answered. Those who have high trust-based prayer expectancies believe that God will answer prayers at the best time and in the best way, even if it is not what the individual had originally wanted. Exercising trust-based prayer expectancies is a method through which an individual can hand over control to God. This type of prayer requires trust in God, believing that he is in control, and that he is a secure base.

Krause (2004) suggested that high trust-based prayer beliefs are positively correlated with psychological well-being. One thousand and five hundred Christian adults (60% = female, 40% = male, average age = 74) were randomly sampled from a list of individuals receiving Medicare or Medicaid services. Participants answered questions regarding trust-based prayer expectancies, frequency of private prayer, and self-esteem. Results from Krause indicated that those who had a stronger belief that God answered prayers and answered prayers in the best way had higher self-esteem than those who did not. Having high self-esteem was indicative of feeling valued by God. Trust-based prayer expectancies, over frequency of private prayer, was related to self-esteem.

In addition, Pospel et al. (2014) hypothesized that higher frequency of private prayer and more trust-based beliefs about prayer would be associated with better mental health. It was also hypothesized that trust-based beliefs about prayer would mediate the

relationship of prayer frequency and mental health. In their study, Possel et al. found that prayer frequency was positively associated with trust-based beliefs about prayer, and low trust-based beliefs about prayer were positively associated with anxiety, confusion, and depression. Specifically, trust-based beliefs about prayer fully mediated the relationship of prayer frequency and depression. These findings indicated that frequency of prayer impacts depression indirectly through trust-based prayer expectancies. In addition, prayer frequency partially mediated the relationship between prayer frequency and anxiety and confusion.

Having high trust-based expectancies necessitates trust in God to answer such prayers. Trust in God can be termed attachment to God. Prior research on trust-based expectancies has indicated the possible relation between attachment to God and prayer expectancies (Possel et al., 2014). In addition, Byrd and Boe (2001) measured attachment, stress levels, and prayer types in a sample of college students and found that the avoidant attachment style was related to less meditational and colloquial prayer. They suggested that these results are due to the necessity of closeness required by meditational and colloquial prayer types. Anxiously-attached individuals found the closeness comforting and practiced these types of prayer in times of stress. Pertinent to the current study is how an individual's attachment style influenced that individual's belief in God answering prayer in His timing and in His way.

Attachment to God

Attachment to God is expressed as an individual's view of God being, or not being, a secure and trustworthy figure. Attachment to God is derived from attachment theory proposed by John Bowlby (1969), where an infant develops an attachment, either

secure or insecure, to a primary caregiver who responds to the infant in times of stress. Secure attachment is developed when the individual trusts the caregiver and views the caregiver as a safe base. Insecure attachment is characterized by a distrust of the caregiver and can result in an anxious (fear of abandonment) or avoidant (fear of intimacy) attachment. God can serve as an attachment figure, with whom an individual can form a secure or insecure attachment (Reiner, Anderson, Lewis Hall, & Hall, 2010). Individuals will respond to God during stressful situations based on their attachment style. Generally, a secure attachment to God has been shown to play a role in healthy coping and was associated with lower levels of stress (Ano & Pargament, 2013).

Nine-hundred six members (57% = female, 43% = male, average age = 61) from the U.S. Presbyterian Church were evaluated in a longitudinal study by Ellison, Bradshaw, Kuyel, and Marcum (2011) to determine the effect of attachment to God on corresponding distress levels. Ellison et al. suggested that individuals seek out relationship, and the religious seek out a relationship with God, when stressful seasons come. Based on attachment theory, those with a secure relationship with God will find God as a safe-base during distress and those with an insecure attachment, namely avoidant or anxious, will not see God as a safe-base during distress. Ellison et al. found that those who had a secure attachment to God prayed more frequently, and had less anxiety and obsessive compulsive behaviors.

Reiner et al. (2010) also found a relationship between attachment anxiety and stress. A sample of 276 undergraduate students (186 = female, 90 = male, average age = 18.5) took a survey using the Spiritual Experiences Questionnaire that included the Perceived Stress Scale, Experiences in Close Relationships questionnaire, and the

Attachment to God Inventory. Reiner et al. found that attachment to God influenced perceived stress, where more insecurity in attachment led to more perceived stress. Reiner et al. specifically found that attachment anxiety to God was a better predictor of perceived stress than attachment avoidance. Being anxiously attached to God was shown to contribute to spiritual struggles because of the individual's tendency to feel abandoned by God amid instability.

There are several theories proposed on how individuals attach to God. Some theorists propose that attachment to God can be viewed through the attachment security primacy model or the need satisfaction primacy model. In the attachment security primacy model, an individual who feels that God has provided biological needs will feel safe going to God to fulfill psychological needs (Miner, Dowson, & Malone, 2014). On the other hand, if the individual does not feel his/her needs have been met by God, the individual will be less likely to go to God for psychological needs. In contrast, the need satisfaction primacy model suggests that after psychological needs have been provided, an individual will form an attachment to God that is either secure or insecure. Miner et al. conducted a survey to determine if the attachment security primacy model or the need satisfaction primacy model can account better for insecure attachment, perception of met psychological needs, and perception of psychological symptoms.

Miner et al. (2014) distributed a survey to 225 adults (134 = female, 91 = male, average age = 35) using the Need Satisfaction Scale to measure need satisfaction by God, the Attachment to God Inventory to measure attachment to God, and the Depression Anxiety Stress Scale to measure psychological symptoms. Results of the study indicated that more positive perceptions of God were derived from the need satisfaction primacy

model resulting in fewer instances of insecure attachment classifications and fewer psychological symptoms. Participants who felt God could meet their needs were less likely to display anxious or avoidant attachment tendencies.

Other theorists believe that attachment to God can be explained by the correspondence or compensation hypothesis, which states that an individual either attaches to God in the same way as he/she attaches to others—correspondence—or develops a secure attachment to God despite an insecure attachment with others—compensation (Reiner et al., 2010). Based on research by Grandqvist (2005) on the correspondence and compensation hypothesis, insecurely attached individuals tended to seek out God in stressful situations more than their counterparts. Adults from Sweden ($N = 197$, 22% = male, 78% = female, average age = 38) were surveyed on perceived attachment history with parents, parental religiosity, and religious coping strategies. They also answered questions to determine their attachment to God based on the correspondence and compensation model. The results suggested that in line with the compensation hypothesis, those with insecure attachments defer their problems to God, where secure individuals believe they are responsible for solving issues themselves.

Attachment to God can also act as a buffer in stressful situations. Wei et al. (2012) surveyed 183 Chinese Christians (46% = male, 54% = female, average age = 33.8 years) in the United States. Participants answered questions from the Perceived Stress Scale to measure stress, the Attachment to God Scale to measure insecure attachment, the Emotionally Based Religiosity Scale to measure secure attachment, and the Satisfaction with Life Scale to measure general life satisfaction. Results from the study by Wei et al. showed that Chinese immigrants with high stress levels had low life satisfaction.

However, those with a secure attachment to God had a high level of life satisfaction, despite stressful situations.

The relationship between attachment to God and psychological stress was further developed by Ellison et al. (2011). The researchers evaluated 906 participants (57% = female, 43% = male, average age = 60 years) on psychological distress, attachment to God, and stress levels over the course of twelve months and found that secure attachment acted as a buffer against stress. Results of the study supported the hypothesis that secure attachment is associated with improvements in distress over time. The researchers found that secure attachment to God was related to a reduction in the emotional reactivity to stress and helped build a resilience in the face of loss and conflict. In addition, there was a significant correlation found between the relationship between anxious attachment to God and increases in distress over time. Those who had a baseline secure attachment to God had improved distress levels by the end of the study. Having a secure attachment acted as a buffer to negative life events, as those individuals showed less emotional reactivity to conflict and loss. The study indicated that individuals who use positive religious coping strategies usually have a close relationship with God, and those who feel abandoned or angry with God practice negative strategies.

In addition, attachment to God and religious coping strategies were examined in a study by Belavich and Pargament (2002) with a group of 155 individuals (67% = female, 33% = male, average age = 44 years) undergoing a stressful situation. Participants were waiting for a loved one undergoing major surgery. The study employed a forced choice attachment to God measure that asked participants to read three paragraphs about attachment to God, representing avoidant, anxious, and secure attachment, then pick

which paragraph best described them. They also took the Religious Problem Solving Scales to assess spiritual coping. Various scales were used to measure adjustment including a religious outcome scale, general outcome scale, and a stress-related growth scale. About 64% of the sample indicated a secure attachment, 29.7% an anxious attachment, and 6.5% an avoidant attachment. Different attachment styles corresponded with different coping responses. Securely attached individuals were found to use more positive religious coping than the other groups. Avoidant and anxious attached individuals reported high levels of religious discontentment and used self-directive coping mechanisms. Of those participants who reported using positive religious coping, they had better religious and general outcomes that led to lower levels of distress. These individuals felt a loving presence of God and experienced more growth from the trial. The religious coping mechanism of religious pleading, which involves bargaining with God, questioning God, and asking for a miracle, was related to high levels of distress. Anxiously attached individuals showed patterns of religious pleading.

Closeness to God can play a role in how an individual approaches God in prayer. Research by Krause and Hayward (2014) examined the positive religious coping mechanism of prayer in the form of trust-based prayer expectancies. It was hypothesized that an individual's relationship with God is influential in the process of building trust-based prayer expectancies. Having a secure attachment to God (measured by closeness to God) gives way for a foundation of trust to be built. Out of trust flows the belief that God is good, that he will answer prayers, and that he will answer them in the best possible way (Krause & Hayward, 2014). In other words, an individual who is close to God is more likely to experience trust-based prayer expectancies than an individual who is

distant from God. One-thousand and five Mexican American adults (58% = female, 42% = male, average age = 79) were surveyed on their relationship with God, trust-based prayer expectancies, and church attendance. Results of the study indicated that those who were close to God did indeed experience more trust-based prayer expectancies than those who were not (Krause & Hayward, 2014). Such results are consistent with findings by Byrd and Boe (2001) that prayer is associated with closeness to God.

Current Study

Coping strategies for dealing with stress have been an interest of researchers in the past. However, the effect of prayer expectancy on the relationship between attachment to God and stress levels has not been widely researched. If trust-based prayer expectancies mediated the relationship between attachment to God and stress, trust-based prayer expectancies can have implications for prayer times, stress relief, and personal relationships with God. The reasoning behind this research hypothesis is due to previous research by Krause and Hayward (2014) who found that a secure relationship with God is important in expecting God to answer prayers. Those with insecure attachments lack that basis of trust and are hypothesized not to expect God to answer their prayers. More specifically, these individuals will be less likely to believe that God will answer prayers in the right time and way. More trust in God will lead to healthier, more positive prayer times that are hypothesized to lead to lower stress levels. With the limited amount of research in the area of trust-based prayer expectancies, especially in relation to attachment to God, this study adds depth to the understanding of the connection. The current study investigated if trust-based prayer expectancies mediate the link between

anxious attachment to God and perceived stress and if trust-based prayer expectancies mediate the link between avoidant attachment to God and perceived stress.

Method

Participants

The current study recruited undergraduate students from a large, Mid-Atlantic, Christian university. Students were invited to participate in the study via the psychology department webpage. Through completing the survey, students were given five points in the form of a psychology activity credit that counted towards their final grade. In total, there were 327 participants involved in this study; however due to incomplete data, only 315 of the original participants were retained. Of the participants, 22% ($n = 70$) were male and 78% ($n = 245$) were female. The age range for participants was between 18 and 48 ($M = 20$, $SD = 2.65$). Of the sample, 29% of the students were freshmen, 30% were sophomores, 22% were juniors, and 18% were seniors. Regarding prayer, 1.6% of the population selected that they never pray, 1.6% less than once a month, 1% once a month, 4.1% a few times a month, 3.2% once a week, 20.3% a few times a week, 21.6% once a day, and 46.7% several times a day.

Measures

Demographics. The participants were asked to report their age, gender, and frequency of private prayer. Frequency of private prayer was measured on an eight-point Likert scale (1 = *never*; 2 = *less than once a month*; 3 = *once a month*; 4 = *a few times a month*; 5 = *once a week*; 6 = *a few times a week*; 7 = *once a day*; 8 = *several times a day*).

Perceived Stress Scale. The Perceived Stress Scale (PSS-14; Cohen, Kamarck, & Mermelstein, 1983) included 14 questions and measured the amount of appraised stress

an individual experienced within the last month. The scale included questions such as “In the last month, how often have you been upset because of something that happened unexpectedly?” and “In the last month, how often have you felt difficulties were piling up so high that you could not overcome them?” Questions were answered on a four-point Likert scale (0 = *never* and 4 = *very often*). Each score was summed for a total perceived stress score and scores could range from 0-56. The average perceived stress score was 23.18 for college males ($SD = 7.31$) and 23.67 for college females ($SD = 7.79$) found in a study by Cohen et al. (1983). In previous studies, the scale demonstrated high test-retest reliability and internal consistency ($\alpha = .78$) in studies using college aged samples. The current study had a coefficient alpha of $\alpha = .84$ and an average perceived stress score of 29.50 ($SD = 7.40$).

The Attachment to God Inventory. The Attachment to God Inventory (AGI; Beck & McDonald, 2004) consisted of 28 questions and was used to measure the attachment dimensions of avoidance of intimacy and anxiety of abandonment in regard to one’s relationship with God. The avoidance subscale was based on an individual’s self-reliance and lack of dependency and emotionality with God. Participants were to rate how much they agreed with statements on the avoidance scale such as “I just don’t feel a deep need to be close to God” and “I am uncomfortable being emotional in my communication with God.” The anxiety subscale included fear of abandonment, anger and jealousy towards God, and worry about the relationship itself. Participants were asked to rate how much they agreed with statements on the anxiety scale such as “I am jealous at how close some people are to God” and “I worry a lot about damaging my relationship with God.” The Attachment to God Inventory assessed participants’

attachment style to God using a seven-point Likert scale (1 = *strongly disagree* and 7 = *strongly agree*). Items from the two subscales were separately summed to develop an avoidance and an anxiety subscale. Scores could range from 14-98 for both the avoidance and anxiety subscales. The avoidance and anxiety subscales demonstrated good internal consistency with an alpha coefficient of $\alpha = .84$ for avoidance and $\alpha = .80$ for the anxiety items (Beck & McDonald, 2004). In the study on college students by Beck and McDonald a mean avoidance score of 41.06 ($SD = 11.42$) and a mean anxiety score of 47.03 ($SD = 13.11$). The avoidance subscale demonstrated an alpha coefficient of $\alpha = .90$ and the anxiety subscale $\alpha = .89$ in the current study. The average score in the current study for the avoidance subscale was 40.73 ($SD = 13.81$) and the average score for the anxiety subscale was 49.40 ($SD = 14.79$).

Trust-Based Beliefs about Prayer Scale. Possel et al. (2014) adapted the trust-based prayer expectancies scale by Krause (2004) to develop the trust-based beliefs about prayer scale. The scale measured trust-based prayer expectancies and asked participants three questions regarding their belief in answered prayer (“When you pray by yourself, how often is your prayer answered?”), their belief about the timing of answered prayer (“Learning to wait for God’s answer to my prayer is an important part of my faith.”) and their belief in how prayer will be answered (“When I pray, God does not always give me what I ask for because only God knows what is best.”). Responses to question one were recorded using a four-point Likert scale (1 = *never* and 4 = *regularly*). Questions two and three used a four-point Likert scale (1 = *strongly disagree* and 4 = *strongly agree*). There was a total possible highest score of 12 and lowest possible score of 3. Items were summed with higher scores indicating more trust-based beliefs about prayer. The Trust-

based Beliefs about Prayer scale demonstrated an internal consistency of $\alpha = .73$ (Possel, et al., 2014). The current study had an alpha coefficient of $\alpha = .63$ and an average of 7.07 ($SD = 1.05$).

Procedure

After the Institutional Review Board approved the study and the participants read the informed consent and clicked to agree to participate, the self-report survey was distributed. The survey was distributed via Qualtrics through the university's department of psychology webpage. Participants were prompted to agree to the informed consent before beginning the survey. Those who agreed answered demographic questions followed by the Perceived Stress Scale, Attachment to God Inventory, and Trust-Based Beliefs about Prayer Scale. The Perceived Stress Scale and Attachment to God Inventory were randomized to ensure that participants were not primed by either survey. Items from each scale were summed and totaled according to their scoring guidelines. Data were gathered through Qualtrics and analyzed using the PROCESS macro software by Hayes (2012) on SPSS software (version 23). Model four, which is the simple mediation model displayed in Figure 1, was utilized.

Results

To test the relationships of attachment to God and perceived stress by way of trust-based prayer, a mediation model was used based on Hayes' (2012) design (see Figure 1). The current study analyzed two mediation models, one with the predictor variable of avoidant attachment, controlling for anxious attachment, and the second with the predictor variable of anxious attachment, controlling for avoidant attachment. In both models, the outcome was perceived stress and the mediator was trust-based prayer

expectancies. Both models also controlled for gender based on previous research by Brougham et al. (2009) that found women had a higher level of stress than men.

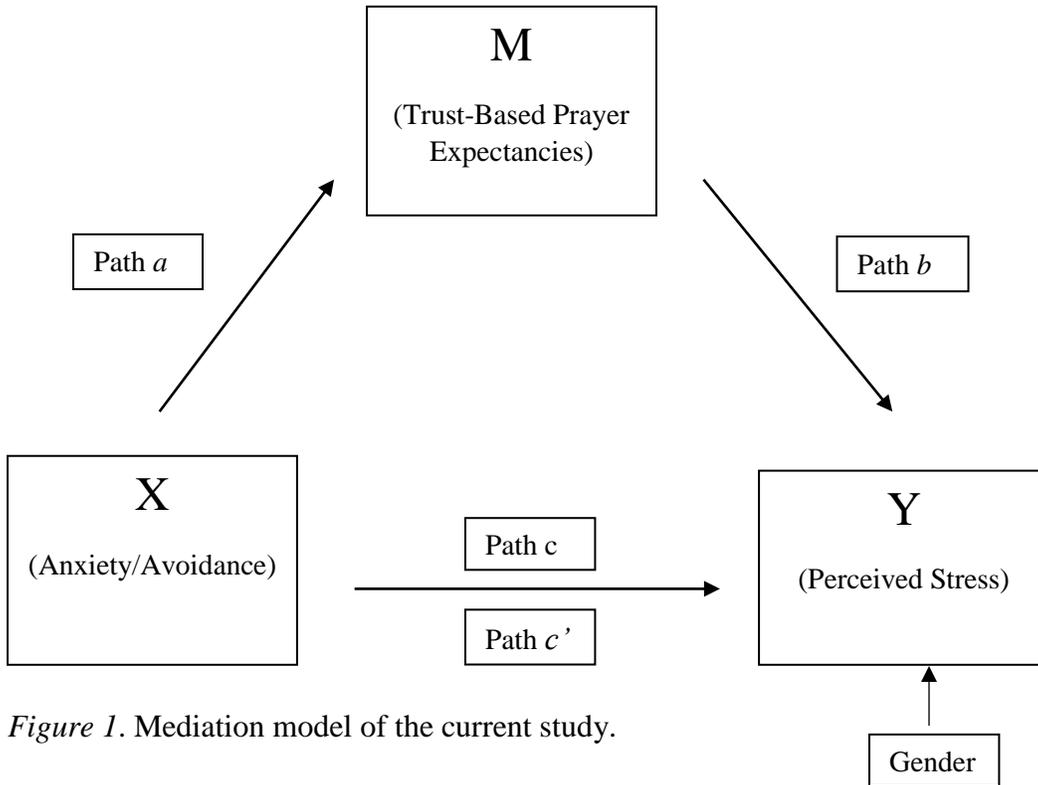


Figure 1. Mediation model of the current study.

Anxious Attachment to God Model

For the mediation model with anxiety levels in one's attachment to God as the predictor variable, paths *a*, *b*, and *c* were tested as well as the indirect effect (see Figure 2). The results showed that anxiety levels in attachment to God did not predict trust-based prayer expectancies ($a = -.002, p = .536$). However, participants who had lower levels of trust-based prayer expectancies had higher levels of perceived stress ($b = -.896, p < .01$). In addition, high levels of anxiety in one's attachment to God predicted high levels of perceived stress ($c = .301, p < .001$). There was also a significant association between gender and perceived stress, with females exhibiting higher levels of stress. In addition, there was not a significant indirect effect between anxious attachment and perceived

stress by way of trust-based prayer expectancies (.0021, $Z = .5631$, $p = .5734$, 95%

Bootstrap CI = -.0044 to .0127).

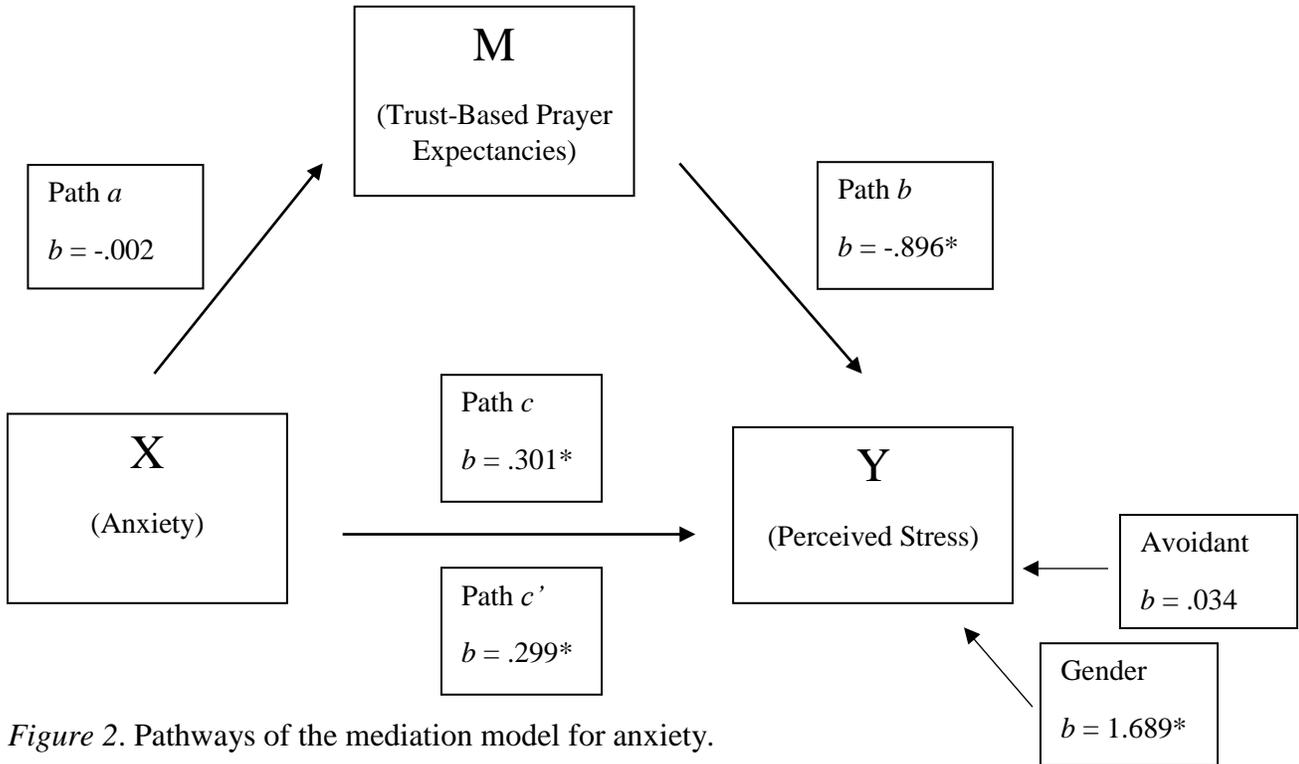


Figure 2. Pathways of the mediation model for anxiety.

* indicates significance ($p < .05$)

Avoidant Attachment to God Model

For the mediation model with avoidance in one's attachment to God as the predictor variable, paths a , b , and c were tested as well as the indirect effect (see Figure 3). The results showed that avoidant attachment to God did predict trust-based prayer expectancies ($a = -.036$, $p < .001$). In addition, participants who had high levels of trust-based prayer expectancies had low levels of perceived stress ($b = -.896$, $p < .01$). As displayed in Figure 3, there was a significant indirect effect of avoidant attachment to God and perceived stress by way of trust-based prayer expectancies (.0323, $Z = 2.433$, $p < 0.01$, 95% Bootstrap CI = .0081 to .0598), such that high avoidance predicted low trust-

based prayer expectancies, which, in turn, predicted high perceived stress. There was also a significant association between gender and perceived stress with females reporting higher levels of stress.

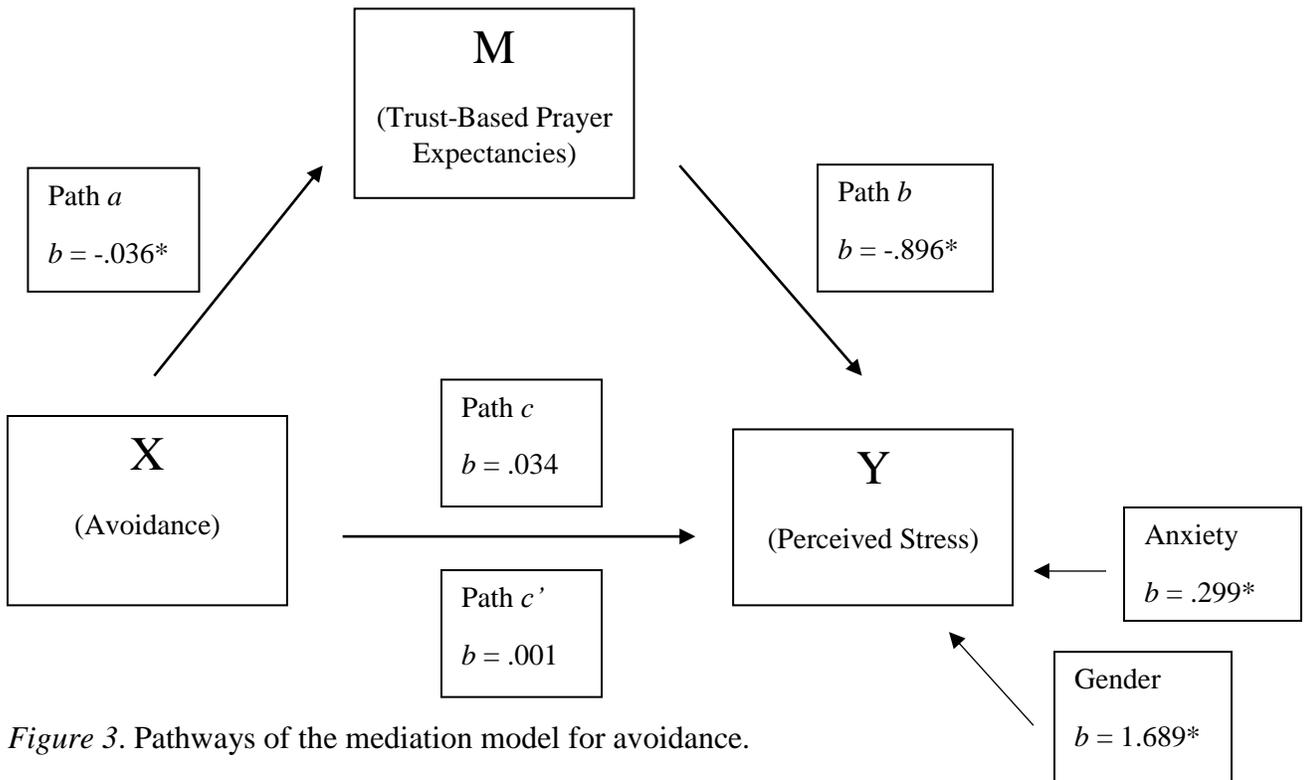


Figure 3. Pathways of the mediation model for avoidance.

* indicates significance ($p < .05$)

Discussion

Research has shown the benefits of prayer for stress reduction (Ellison et al., 2014; Jeppsen et al., 2015; Poloma & Pendleton, 1989). Of interest for the current study was the relationship of trust-based prayer expectancies with perceived stress. Research by Krause (2004) has suggested that trust-based prayer expectancies affected how individuals prayed and how often they prayed. In addition, trust-based prayer expectancies require individuals to trust in God's timing to answer prayer and His way of answering prayer. Due to this requirement of trust, it was hypothesized that trust-based

prayer expectancies would mediate the relationship between attachment to God and perceived stress. Specifically, attachment to God is associated with perceived stress by way of trust-based prayer expectancies.

Results of the study only partially supported the hypothesis. The indirect effect of avoidance in attachment to God and perceived stress by way of trust-based prayer expectancies was significant. Specifically, high avoidance predicted low trust-based prayer expectancies, which predicted high perceived stress. Trust-based prayer expectancies helped explain the relationship between avoidance in one's attachment to God and perceived stress. Individuals who have high levels of avoidance are less likely to use trust-based prayer expectancies and experience more stress.

However, the relationship between anxiety in one's attachment to God and perceived stress was not mediated by trust-based prayer expectancies. Regardless of trust-based prayer expectancies, anxiety in attachment to God did predict perceived stress. There was not an established predictive relationship between anxious attachment to God and trust-based prayer expectancies. However, there was a relationship established between trust-based prayer expectancies and perceived stress, with high trust-based prayer expectancies predicting low perceived stress. Both the avoidance and anxiety models showed that gender was significantly associated with perceived stress, with females exhibiting more perceived stress.

The results of the current study did not support earlier research by Byrd and Boe (2001) that found that anxious attachment, not avoidant attachment, was positively related to prayer through closeness to God. However, Reiner et al. (2010) found that anxious attachment was positively related to higher levels of distress. Insecure attachment

is based on a lack of trust, and anxiously attached individuals lack trust due to a fear of abandonment. It can be suggested that the current study's results align with Reiner and colleagues' work as it is possible that anxiously attached individuals are more likely to doubt God, due to their fear of and history of being abandoned, and continue to experience stress despite prayer.

The results may suggest that low trust-based prayer expectancies are a result of an insecure relationship with God. High scores on the Attachment to God Inventory, and therefore indicative of an insecure attachment, were associated with low trust-based prayer expectancies for avoidance. These individuals may have low trust-based prayer expectancies because of a lack of trust in God to provide. Prior research by Possel et al. (2014) has shown the importance of closeness to God in trust-based prayer expectancies. In addition, other research has shown the beneficial influence of closeness to God on stress reduction (Ellison et al., 2011).

Limitations

The sample was collected by means of convenience and therefore may lack external validity. The current study may not generalize to the larger population of undergraduate students because participants were not randomly selected. In addition, the sample selected is primarily female (77.5%), indicating that the results may not be generalizable to males. The sample is from a large mid-Atlantic Christian university. The school's demographics should be considered when interpreting the results for the current study.

For the purposes of the study, it was assumed that the participants in the sample identified as Christian because of their affiliation with a large Christian university. A

demographic question regarding the individual's religious affiliation should have been included to establish belief in God. The individual's belief in God will affect responses to the scales on attachment to God and trust-based prayer expectancies. Since the Trust-Based Prayer Beliefs Scale and Attachment to God Inventory did not give participants an option of stating they do not pray, or do not have an attachment to God, participants who did not pray or did not have an attachment to God would have had irrelevant answers. Therefore, the scales may have included systematic measurement error. In addition, there was a ceiling effect regarding trust-based prayers, with most students ranking high in trust-based prayers. Such an effect may indicate a lack of variability in the data for trust-based prayers.

Another limitation of the study was the type of stress experienced. Stress in college is linked to a variety of factors, as concluded by Hamaideh (2011). Time of year may have played a role in the primary type of stress that the sample was experiencing. The survey was launched during the middle of an academic semester, where there may have been added pressure from course work. Moreover, Broughman et al. (2009) found that specific types of coping mechanisms are most useful with specific types of stressors. Academic course work may have been a type of stressor that requires more problem solving coping mechanisms rather than religious coping mechanisms. Future research should test the effect of other coping mechanisms on academic stress.

Future Research

Future studies on the relationship between attachment to God, trust-based prayer expectancies, and perceived stress levels should consider using longitudinal data. In order to see the true effect of attachment to God on stress by way of trust-based prayer

expectancies, participants should be tested over an extended period of time. In doing such, an individual would be surveyed during times of low, moderate, and high stress as time progressed. If the data revealed that overall trust-based prayer expectancies are related to lower perceived stress levels, it should stand to reason that no matter the amount of stress, trust-based prayer expectancies would be a helpful coping mechanism.

Other variables that may mediate the relationship between attachment to God and perceived stress should be explored in future studies. Other variables such as self-esteem, depression, and resilience would give insight to the reasons why an individual may be more or less apt to have a secure or insecure attachment to God and engage in higher or lower levels of trust-based prayer expectancies. In addition, adding a demographic question to assess the individual's view of God would contribute to understanding the individual's attachment style.

Implications

Understanding the links between attachment to God and trust-based prayer expectancies gives insight into how college students can practically reduce stress. In a population where stress is common, it is essential to have coping mechanisms in place that are effective at reducing stress. Based on the data from the current study, in both the anxiety and avoidance models, high trust-based prayer expectancies predicted low perceived stress. Previous research by Krause (2004), Krause and Hayward (2014) and Possel et al., (2014) also have found the importance of expecting God to answer prayer in His timing and in His way in reducing stress.

The current study offers insight to the benefits of a secure attachment to God. Those with insecure attachments to God would benefit from sessions through which they

can explore their attachment to God and work on building corrective attachment figures (Reiner et al., 2010). Using the correspondence and compensation hypotheses, individuals could undergo sessions to develop intimacy and trust with God and other secure bases. The data from the current study showed the possible usefulness of trust-based prayer expectancies especially for those with avoidant attachment styles. Having a secure attachment to God would give an individual a secure base to trust and rely on during times of stress. In addition, the results show that 68.3% of the population identified as praying at least once per day. If these students are already using the coping mechanism of prayer, it stands to reason that prayer is important to those individuals. As seen in prior research by Possel et al. (2014), prayer is associated with positive well-being. Prayer should be considered as a valid mechanism of coping with stress.

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