EXPLORING THE RELATIONSHIP BETWEEN ATTACHMENT STYLE, STRESS PERCEPTION, AND RELIGIOUS COPING IN THE EVANGELICAL MISSIONARY POPULATION

by

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Liberty University

A Dissertation Presented in Partial Fulfillment
Of the Requirements for the Degree
Doctor of Philosophy

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ABSTRACT

This cross-sectional survey design study examined the relationships between attachment style, stress perception and religious coping in a sample of 267 cross-cultural, evangelical missionaries. No significance for effect for attachment style on perceived stress was found. However, both age and gender demonstrated significant effects on perceived stress. There was also a significant association between perception of stress and religious coping, independent of attachment style. Religious coping accounted for a small amount of the variance in perception of stress. The vast majority of the sample reported patterns of positive religious coping, which was not influenced by attachment style. A new tool for measuring missionary stress was also developed and shows good psychometric qualities. Implications for member care services and recommendations for future research are discussed.

Keywords: attachment style, stress perception, religious coping, missionary member care
Dedication

This dissertation is dedicated to the Lord Jesus Christ. He in essence was the first cross-cultural missionary who, in human form, entered the world with the Good News of salvation. He continues to call others first to Himself and then to “…go into all the world…” To You, King Eternal, I dedicate this dissertation and my entire life. May it be for Your glory and Yours alone and may this study be used to further Your Kingdom. I love belonging to You and my heart’s desire is to know You and make You known.

Secondly, this dissertation is dedicated to God’s gifts to me, my husband Ralph and our two daughters Kim and Leah. Ralph, you are the most amazing man of God I have ever met. You are love of my life, my soul mate. I could never have accomplished this goal without you. Words are inadequate to express my gratitude for your love, encouragement, and patience. Thank you, special man. Our life verse resonates deeply as we love the Lord and serve Him together. Psalm 34:3: “Come, let us rejoice in the Lord and glorify His name together.” Thank you. Guess what! I finally got “that paper” done. I love being your wife.

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To Rose and Steve, you both left this earth far too soon. I cannot wait to meet you, Dad, and to see you again, Mom. I love being your daughter. To Alice and Ray, the best in -laws a
woman could ask or pray for. You, too, left this earth way too soon. Thank you for Ralph and for welcoming me to your family so beautifully.

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Humbly submitted,

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CHAPTER ONE: INTRODUCTION

Background of the Problem

Our God is a missionary God and continues to call people to go into the world and make disciples of all nations (Matthew 28:18; Mark 16:15; Acts 1:8). Those who respond to God’s call are often on the front lines to witness God move in powerful ways above and beyond what they may have seen in their passport country. Serving as a missionary can be one of the most enriching (Foyle, 2001) and life-shaping experiences (Eenigenburg & Bliss, 2010), bringing great joy and rewards along with accelerated spiritual growth, deepening of faith, and an increased dependence on God (Eenigenburg & Bliss, 2010). On the other hand, those who respond to this call and go into cross-cultural contexts often encounter extraordinarily difficult and stressful circumstances (Bagley, 2003; Carter, 1999; Dodds & Dodds, 1997; Eenigenburg & Bliss, 2010; Gish, 1983; Irvine, Armentrout & Miner, 2006; O’Donnell & O’Donnell, 1988, 1992b, 2002; Schaefer et al., 2007). Schaefer et al. (2007) report that while pursuing purposes they strongly believe in, missionaries and aid workers expose themselves to adjustment challenges, health risks, and increased risks of trauma.

The challenges missionaries face include both normative and non-normative types of stressors (Foyle, 2001). Both types of stressors have the potential to activate the attachment system (Cozolino, 2010; Siegel, 1999), and can have a powerful influence on how the missionary will relate to others, cope under stress, and function psychologically.

The following is a review of the three main constructs that formed the basis for this study: attachment theory, perception of stress, and religious coping. Attachment theory provides the lens from which various missionary stressors as well as patterns of religious coping are viewed. As the three variables were examined, the relationship among them emerged. The
remaining sections include the limitations, assumptions and delimitations of the study, definition of terms, significance of the study, and the theoretical conceptualization.

**Attachment Theory**

Attachment theory, first proposed by Bowlby (1969, 1973, 1988) and further explored by Ainsworth (1973, 1985, 1991), Ainsworth, Blehar, Waters, and Wall (1978), and Main (1996), proposes that early relationships formed with primary caregivers lay a foundation for future relationships, as well as for psychological and emotional functioning (Bretherton, 1992). A child who has a loving primary caregiver who is responsive to the child’s needs is more likely to form a secure attachment relationship (Bowlby, 1969, 1973, 1988; Cozolino, 2010; Granqvist, Mikulincer & Shaver, 2010; Siegel, 1999; Sroufe & Siegel, 2011). This security provides a “safe haven,” which enables the child to explore the world, and have a sense of confidence and well-being. Moreover, the child learns self-regulation skills to soothe him or herself in times of distress (Ainsworth et al., 1978; Mikulincer & Shaver, 2005; Siegel, 1999).

Conversely, when early primary caregivers are not attuned to the child, and/or are unavailable or inconsistent, then the child is more likely to develop an insecure attachment relationship (Bowlby, 1973; Cozolino, 2010; Siegel, 1999). Over time, this insecure attachment relationship can result in two orthogonal dimensions of attachment, attachment anxiety or attachment avoidance, and creates distinct ways of coping (Brennan, Clark & Shaver, 1998; Mikulincer & Shaver, 2005). For instance, individuals with anxious attachment patterns resort to hyperactivation strategies to cope. These strategies are described as intense, compulsive, and clinging responses in an effort to attain proximity to or attention from the attachment figure (Shaver & Mikulincer, 2002). Those with avoidant attachment styles utilize deactivation strategies, which include suppression, distancing, and avoiding anything that may activate the
attachment system, including the attachment figure (Brennan et al., 1998; Mikulincer & Shaver, 2005; Shaver & Mikulincer, 2002). Furthermore, those with avoidant styles are overly self-reliant and avoid any type of dependence on others (Bowlby, 1973; Shaver & Mikulincer, 2002).

Experiences with caretakers are internalized in such a way that, over time, they form an internal schema or prototype for later relationships and functioning outside the family. This internal schema or mental model of security, called the “Internal Working Model,” results in two types of internal working models, one of self and one of others (Bartholomew & Horowitz, 1991). This internal working model determines how individuals perceive themselves and others in the world (Sibcy, 2010; Siegel, 1999).

The implicit memory system stores this perception of self and others (Cozolino, 2010) and acts as a filter through which the individual assesses and appraises situations and people (Hall, 2007a, 2007b). Through this filter, individuals ask basic questions about themselves as to whether or not they are loved, worthy, safe, or competent. Similar questions are posed as the individual simultaneously assesses and gauges the response and availability, or lack thereof, of others (Bowlby, 1988; Sibcy, 2010, Straub, 2009). Brennan and Shaver (1995) and Hazan and Shaver (1990) postulate that, although malleable, these attachment patterns laid down early in life are relatively stable throughout the lifespan and can impact romantic love, interpersonal attitudes, and psychiatric symptoms.

The burgeoning research on attachment theory provides a fertile conceptualization of many areas pertinent to missionary life. For example, missionaries experience separation from their primary attachment figures, home country, culture, and language (Kim, 2012). Their internal working model will be more apparent as they face multiple stressors including culture shock, social and geographical remoteness, restrictions of resources, and relational tensions.
In addition, attachment relationships may serve as catalysts of risk or of resilience (Siegel, 1999). Resilience, the ability to rebound after stressful events, is a highly valued quality in missionaries (Owen, 2002). Yet, there is a paucity of research on attachment styles in missionary populations (Mills, 2008). This study aims to add to the research by providing a glimpse into the relationships between attachment styles, experience of stress, and religious coping in missionaries serving cross-culturally.

**Religious Coping**

The extensive and cumulative research on religious coping has led to numerous advances in understanding the relationship between religious coping and well-being (Pargament, 1997). These advances have led to changes in how religious coping is measured (Pargament, Koenig & Perez, 2000). Rather than focusing on particular religious activities, such as frequency of prayer or church attendance, Pargament, Smith, Koenig and Perez (1998a) have identified specific patterns of religious coping and how they interrelate. They have observed that under stress, people resort to both positive and negative religious coping patterns. Their findings suggest that religion can be a source of distress as well as a source of solutions in coping (Pargament et al., 1998a).

Pargament et al. (1998a) describe the positive patterns of religious coping methods as seeking spiritual support, religious forgiveness, collaborative religious coping, spiritual connection, religious purification, benevolent religious reappraisal, and religious focus. Generally speaking, the researchers found that positive religious coping patterns were tied to benevolent outcomes, including fewer symptoms of psychological distress and reports of psychological and spiritual growth as a result of the stressor.

Conversely, negative patterns of religious coping were defined by a different set of
religious coping methods. These included spiritual discontent, punishing God reappraisals, interpersonal religious discontent, demonic reappraisal, and reappraisal of God's powers. Negative religious coping patterns were associated with signs of emotional distress, such as depression, poorer quality of life, psychological symptoms, and callousness towards others (Pargament et al., 1998a).

The way missionaries cope in everyday life and in crises is intricately connected to their message. In missionary settings, their message is often their lifestyle: how they live, relate to others, resolve conflict, and rely on God. In other words, their identity may be intricately linked with their religious vocation. Problems in religious coping may have negative repercussions on missionaries’ emotional health and identity (Pargament, Tarakeshwar, Ellison, & Wulff, 2001).

According to identity theory, individuals construct personal identities based largely on the social roles they occupy (Burke, 1991; Ellison & Lee, 2010; Stets & Burke, 2000; Stryker, 1987; Stryker & Burke, 2000). These roles are especially central to the person’s identity if the individual has made greater temporal, financial, and psychological investments in his or her particular societal role. Moreover, when individuals with highly salient social roles face situations that challenge their occupation, performance, or competence, the sense of self may be threatened. This can lead to feelings of distress or other undesirable psychological states (Ellison & Lee, 2010). This sense of self or identity may be also understood through the lens of attachment theory; that is, the spiritual stressor has activated the internal working model of self.

In effect, according to Keister (2010) and Schottenbauer et al. (2006), attachment styles influence which types of religious coping individuals are likely to engage in. For instance, Keister (2010) reports that individuals with insecure attachment styles (preoccupied, dismissing, and fearful) are more likely to resort to negative religious coping. Findings by Schottenbauer et
al. (2006) suggest that secure attachment predicts positive religious coping. They also found that when mediated by appraisal, anxious–ambivalent attachment qualities were associated with avoidant coping and negative religious coping.

While most people utilize positive religious coping (Pargament et al., 1998a), missionaries are not immune from religious struggles. In addition to increased spiritual warfare (Anyomi, 1997; Kim, 2009; O’Donnell & O’Donnell, 2009, 2012; Taylor, 1997), the inherent stresses of missionary life may be overwhelming. These struggles could result in missionaries challenging core assumptions about God and/or self and lead to negative religious coping. Furthermore, maintaining a vibrant spiritual life while serving as a missionary is often reported to be very difficult (Eenigenburg & Bliss, 2010; Parshall, 1987). In fact, maintain one’s spiritual life is often listed as a specific stressor of missionary service (Bosch, 2014; Johnson & Penner, 1981; O’Donnell & O’Donnell, 2009, 2012).

**Perceived Stress**

Missionaries may experience a large number of stressors related to their cross-cultural service (Bagley, 2003; Carr, 1994; Schaefer et al., 2007; Schubert, 1992). However, how they perceive the stress is a function of their attachment style (Kemp & Neimeyer, 1999; Kim, 2009). Gish (1983) points out that stress depends in part on whether or not the missionary appraises a given situation as benign, neutral, or stressful. Gish adds that even if the situation is appraised as stressful, it may not result in distress, as some may view it as a challenge. However, Gish (1983) adds that if a person sees harm, loss, or threat in the stress, the result may be different. Lazarus and Folkman (1984) concur and describe psychological stress as a particular relationship between the person and the environment. If the stress is appraised as taxing or exceeding an individual’s resources, it may endanger his or her well-being. Therefore, it is more often how
the stress is perceived rather than the amount or type of stress that matters (Huff, 2001). The perception of stress activates the underlying coping mechanisms, which are largely determined by attachment style (Kim, 2009).

**Review of Missionary Stressors Related to Attachment Style**

Missionaries are ordinary people and can experience stressors common to most, such as normal life transitions, work, finances, relationships, health, marriage, the raising and education of children, and aging parents. For those serving in cross-cultural settings, each of these normal life stressors can be amplified and exacerbated by the strain and hassles of cross-cultural living (Foyle, 2001). Non-normative stressors can range in severity from acculturation stressors to hostile and violent uprisings, wars, evacuations, natural disasters, or epidemics (Bagley, 2003; Carr, 1994; Grant, 1995; Ng, 1997; O’Donnell & O’Donnell, 2009, 2012; Spruyt, Lloyd, & Schudel, 1999).

Kim (2009, 2012) reported that missionaries’ responses to stress are likely to be related to their attachment styles regardless of physical, emotional, interpersonal, and spiritual growth. Kim (2009) explains that based on the internal working model, secure attachment style is associated with positive views of self and others. For those with a secure attachment style, the perception of stress is lower and there is an innate belief that they have the capacity to handle stress and that others will be available when needed (Kim, 2009). Conversely, those with insecure attachment patterns perceive stress as higher, have low self-esteem and unstable emotional patterns, and may consider even minor stressors to be major (Kim, 2009). In cases of insecure attachment styles, the overtaxing stress has the propensity to lead to ineffective coping and poorer psychological and spiritual outcomes (Keister, 2010).

O’Donnell and O’Donnell (2009, 2012) have identified 10 common areas of stress cross-
cultural workers encounter. These 10 areas, represented by the acronym CHOPS, include Cultural, Crises, Human, Historical, Occupational, Organizational, Physical, Psychological, Support, and Spiritual (see O’Donnell & O’Donnell, 2009, 2012 for review). While each category of stressors may be significant to the individual, it is typically the accumulation of stressors that impair missionary service (Chester, 1983). Of the 10 areas identified as potential stressors by O’Donnell and O’Donnell (2009, 2012), only those most pertinent to this study will be examined below. It is important to understand these stressors in light of our current understanding of attachment style in order to provide a contextualized framework.

**Cultural stressors.**

Acculturation stress is one of the more obvious and consistent stressors missionaries face. The acculturation process can be understood through the lens of attachment theory (Wang & Mallinckrodt, 2006). Stress activates the attachment system (Cozolino, 2010; Shaver & Mikulincer, 2002), revealing the underlying internal working model (Kim, 2012). These internal schemas factor into overall resilience (Schore, 2000; Siegel, 1999) along with subsequent functioning in the adjustment process. For most, adapting to a new and different culture is not a one-time event, but rather a process with many facets which taps into and challenges core beliefs about one’s self, self-adequacy, and personal identity (Haupner-Kipna, 2000). The concepts of self-esteem and self-competency intricately relate to one’s attachment style (Foster, Kernis, & Goldman, 2007; Lopez & Brennan, 2000; Sibcy, 2010; Straub, 2009; Van Buren & Cooley, 2002). In effect, identity and self-esteem can be severely disrupted in the multifaceted process of acculturation (Dodds & Dodds, 2003; Eenigenburg & Bliss, 2010).

A number of attachment-related factors have been identified within the broad context of acculturation. These factors include appraisal (Mikulincer & Florian, 1995) and locus of control
(Dilmaç, Hamarta, & Arslan, 2009). Other factors are the types of support sought, expectancy of support (Mikulincer & Shaver, 2009; Shaver & Mikulincer, 2002), as well as the perception of support received (DeFronzo, Panzarella, & Butler, 2001; Huff, 2001; Kim, 2009; Ognibene & Collins, 1998; Priel & Shamai, 1995; Smith, 2004). Attachment style also influences pro-social behaviors (Mikulincer & Shaver, 2010), along with social competencies (Mallinckrodt, 2000, 2001), social connectedness (Wei, Wang, Heppner, & Du, 2012), and dependence on others (Wei, Russell, Mallinckrodt, & Vogel, 2007). Help-giving behaviors (Keister, 2010; Mallinckrodt & Wei, 2005; Mikulincer, Shaver, Gillath, and Nitzberg, 2005; Vogel & Wei, 2005), gratitude, altruism, and compassion (Mikulincer & Shaver, 2005) are also are functions of attachment. In addition, attachment schemas influence psychological help-seeking behaviors (Shaffer, Vogel, & Wei, 2006), attitudes toward self-disclosure (Mikulincer & Nachshon, 1991) and specifically self-disclosure about emotional states (Zech, de Ree, Berenschot, & Strobe, 2006). Attachment style also affects other areas pertinent to missionary service, such as sense of humor (Besser, Luyten, & Mayes, 2012), self-compassion, and empathy (Wei, Liao, Ku, & Shaffer, 2011), as well as perceived racial discrimination (Wei et al., 2012).

**Crises and stress.**

With increased upheaval across the globe, missionaries often face situations far more traumatic than their compatriots (Bagley, 2003; Carr, 1994, 1997; Carr & Schaefer, 2010; Goode, 1995; Grant, 1995; Irvine et al., 2006; Jensma, 1999; Lindquist, 1982; Miersma, 1993; Schaefer et al., 2007). Under stress, attachment schemas activate and resultant emotional regulatory mechanisms manifest (Kring & Sloan, 2010; Kring & Werner, 2004; Mallinckrodt & Wei, 2005; Schore, 2000; Shaver & Mikulincer, 2002; Sroufe, 2005; Wei, Vogel, Ku, & Zakalik, 2005; Werner & Gross, 2009). Nevertheless, how missionaries regulate emotions can be a
determining factor in their overall success in missionary service (Cousineau, Hall, Rosik, & Hall, 2010; Foyle, 2001; Graybill, 2001; Lindquist, 1997).

    Generally speaking, individuals with anxious attachment systems demonstrate an inability to regulate emotions well (Wei et al., 2005). They have a tendency to overreact and even small stressors can lead to catastrophic thinking (Mikulincer & Florian, 1998). Those with avoidant attachment style suppress emotions, which may manifest themselves in physical illness or complaints (Feeney, 2000; Zech et al., 2006).

    **Human/interpersonal stress.**

    A central factor in studies of intercultural effectiveness/competence and adjustment of expatriates is the development of appropriate interpersonal relationships (Cerny, Smith, Ritchard, & Dodd, 2007). Missionaries are surrounded by a web of relationships (Ritchey & Rosik, 1993). These relationships hold the power to promote health and wellness or sickness and stress for the missionary. For example, if the relationships are positive in nature, then they provide a major source of support and care that sustains missionaries throughout their careers. However, if these relationships are conflict-ridden and draining, then their impact contributes to the stress experienced by missionaries (Ritchey & Rosik, 1993).

    Interpersonal relationships form the core of our understanding of attachment styles (Bartholomew & Horowitz, 1991; Bowlby, 1969, 1973, 1988; Hazan & Shaver, 1987; Mallinckrodt & Wei, 2005; Siegel, 1999) as well as missionary service (Hiebert, 1992; Kim, 2009). Those with secure attachments report better quality of relationships than non-secure types (Collins & Read, 1990; Simon & Baxter, 1993). Moreover, those with secure attachments have more confidence and skill in building and maintaining relationships (Kim, 2009), have longer-term relationships (Feeney & Noller, 1991; Hazan & Shaver, 1987), and enjoy greater intimacy
(Bartholomew & Horowitz, 1991), as well as report more positive perceptions of partners (Young & Acitelli, 1998).

Unsurprisingly, missionaries cite interpersonal relationships as one of the larger stressors of their lifestyles (Bosch, 2014; Carr, 1994; Dipple, 1997; Dodds & Dodds, 1997; Eenigenburg & Bliss, 2010; Foyle, 2001; Gish, 1983; Johnson & Penner, 1981). Such stressors may contribute to early departure from the mission field (Allen, 1986; Taylor, 1997; Trimble, 2006). Generally speaking, attachment style may predict how individuals perceive and address interpersonal conflict (Bowlby, 1969, 1973; O’Connell-Corcoran & Mallinckrodt, 2000; Pistole & Arricale, 2003), as well as attitudes toward authority and leadership styles (Davidovitz, Mikulincer, Shaver, Izsak, & Popper, 2007).

**Physical and psychological stressors.**

Physical health is frequently cited as a source of stress due to language barriers, inadequate or unfamiliar health care systems, disease outbreaks, and the cumulative effect of the ministry workload (Eenigenburg & Bliss, 2010; Foyle, 2001). Physical health is paramount to successful missionary service (Foyle, 2001; Lindquist, 1997). In addition, it is intricately related to attachment style (Maunder & Hunter, 2008; Taylor, Mann, White, & Goldberg, 2000). Physical health is related to psychological health (Koenig, 2009). The psychological health of missionaries is of the highest priority to member care personnel who provide a myriad of targeted services across the lifespan of ministry (Hall & Schram, 1999; Johnson, 2002; Johnson & Penner, 1981, 1988; Lindquist, 1996, 1997, 2002; O’Donnell, 1992, 1997, 1998, 1999; O’Donnell & O’Donnell, 1988a; 1992a, 1998; Pollock, 2002; Schubert, 1999; Schwandt & Moriarty, 2008). Because of this, the importance of this study is amplified, as there is a direct connection between attachment style and psychological functioning (Cozolino, 2010; Jones,
Member care workers are reporting that the newer generation of missionary candidates (Donovan & Myors, 1997) are coming to the field more “bruised” with unresolved family of origin or childhood issues (Dipple, 1997; Lindquist, 1997; Richardson, 1992; Schubert, 1992). These issues may include (a) adults who were victims of child abuse or neglect; (b) adult children of alcoholics; (c) adult survivors of sexual abuse; (d) unresolved grief, guilt, anger, or fear; (e) issues of adoption and divorce; (f) sexual identity problems; (g) previous sexual behavior on the part of the candidate, including past abortions; and (h) vulnerability or previous exposure to demonic involvement (Schubert, 1992). In cross-cultural contexts, these emotional issues invariably become amplified (Graybill, 2001; Lindquist, 1997). Moreover, they have the potential to cause a negative ripple effect throughout the mission community and beyond.

Understanding how early unresolved emotional experiences affect psychological functioning is important in the context of this study, as there is overwhelming support for the association of psychiatric disorders with unresolved and difficult early relationships (Fonagy et al., 1996). In other words, early childhood trauma often predisposes a person to future psychological distress (Cozolino, 2010; LeDoux, 2002; Schore, 2000; Siegel, 1999). In fact, attachment theorists have linked early childhood trauma to the development of insecure attachment styles (Schore & Schore, 2008; Sibcy, 2000; Sroufe & Siegel, 2011).

**Spiritual stressors.**

The spiritual life of a missionary may also be affected by a cross-cultural sojourn. In addition to a greater degree of spiritual warfare (Anyomi, 1997; Kim, 2009; Ng, 1997; O’Donnell & O’Donnell, 1992b, 2009, 2012; Taylor, 1997), missionaries may experience doubts, disappointments, and disillusionments, and have unmet expectations of God.
These challenges may lead to negative religious coping. Moreover, missionaries often live a “fishbowl” experience (Eenigenburg & Bliss, 2010; Foyle, 2001) in which their lives are continually in view of others. They are expected to be “spiritual giants”; therefore, some of their spiritual needs may go unrecognized or unmet (Ng, 1997).

Summary of the Problem

Attachment style influences missionaries in their cross-cultural lives and ministries in many overlapping ways. The attachment style and internal working model are activated under stress and largely determine how missionaries perceive the stress and ultimately cope religiously.

Missionaries experience both normative and non-normative types of stress (Foyle, 2001). Some of the more salient stressors include acculturation stress, interpersonal relationships, physical health, psychological issues, as well as spiritual stressors (O’Donnell & O’Donnell, 2009, 2012). Some stressors missionaries experience may be traumatic in nature (Bagley, 2003; Irvine et al., 2006; Schaefer et al., 2007). The activated attachment schemas tap into many confluent areas such as overall resilience (Schoré, 2000; Siegel, 1999), perception of self and others (Lopez & Brennan, 2000; Sibcy, 2010), help-seeking behaviors (Vogel & Wei, 2005), perception of support (Priel & Shamai, 1995), and emotion regulation (Kring & Werner, 2004; Werner & Gross, 2009). Under stress, coping mechanisms, including religious coping, are engaged (Pargament et al., 1998a).

Religious coping patterns may be either positive or negative and lead to either beneficial or unfavorable outcomes (Pargament et al., 1998a; Pargament, Koenig, Tarakeshwar, & Hahn, 2004). This study proposed that a relationship exists between the variables of attachment styles, stress perception, and religious coping. However, the lack of research on the three variables together provided a key rationale for the study.
The Purpose of the Study

The purpose of this study was to examine the relationships between attachment styles, perception of stress, and religious coping in a sample of cross-cultural evangelical missionaries. A theoretical model of how these variables interacted is presented in Chapter Two.

Research Questions

The following reflect the research questions for this study. Specific hypotheses for these questions are addressed in Chapter Three.

1. Does attachment style predict the level of perceived stress in missionary populations?
2. Does the experience of stress predict positive or negative religious coping strategies missionaries employ?
3. Does the perception of stress interact with attachment style on religious coping?
4. Does religious coping account for unique variance in perceived stress?
5. In this sample of cross-cultural evangelical missionaries, will there be a greater pattern of positive or negative religious coping methods?

Limitations and Assumptions of the Study

Limitations of Sampling Characteristics

Missionaries are unique individuals and do not comprise a population of monolithic personalities or backgrounds (Johnston, 1988). Therefore, no study of evangelical missionaries can generalize all missionaries and results may be limited to the unique qualities of this
particular sample. Also, there was an intentional exclusion of short-term missionaries, or missionaries with service ranging from 1 week to 3 months (Lindquist, 2014), and those with less than 3 months of service. It is possible that such new missionaries will be in the acute stages of what is often called the “honeymoon phase” of their new assignment (Oberg, 1960).

**Limitations of Research Design**

The format of the study was an internet-based cross-sectional survey design with invitations sent via list serves, mission agencies, and snowball sampling. These types of sampling have generalizability concerns (Keister, 2010). Koteskey (2007) noted an overuse of surveys on missionaries, so they may have been less motivated to respond to such research. In addition, missionaries with no or limited access to the internet or in restricted countries may not have had the ability to participate. Furthermore, despite efforts to secure data, password protection was no guarantee of cyber security.

Another limitation of the study is that is difficult to determine and unclear from cross-sectional designs whether attachment styles are causes, consequences, or merely concomitants of the correlated variables examined (Mickelson, Kessler, & Shaver, 1997). Therefore, assessing missionaries at one point in time provided valuable information, but may not accurately reflect functioning across all contexts or constructs. A more appropriate format would have been a longitudinal design over a longer course of missionary service, but such a design was unfeasible both due to the costs involved and the time constraints of this researcher.

**Limitation of Measurement Tools**

Self-reports, the most commonly used measures, have inherent limitations (Kazdin, 2003) and are susceptible to common method bias and inflation of correlations owing to spurious variables such as momentary moods or test-taking attitudes (Mallinckrodt & Wei, 2005). Collins
and Feeney (2000) described a debate in the literature on whether self-report or interview methods are most appropriate for assessing adult attachment styles (Bartholomew & Shaver, 1998; Kemp & Neimeyer, 1999). However, Bartholomew and Shaver (1998) suggested that the Adult Attachment Interview (AAI; George, Kaplan, & Main, 1985) and self-report measures may examine different domains of attachment, which is tantamount to measuring different sides of the same coin.

**Rationale for Social Desirability Scale**

Numerous studies have alluded to the fact that missionaries are often reluctant to share vulnerabilities (Chester, 1983; Dipple, 1997; Eeinenburg & Bliss, 2010; Mills, 2008; Rosik, Richards, & Fannon, 2005). Missionaries may therefore want to respond in socially desirable ways, thus skewing results. For that reason, the shortened form of the Marlowe-Crowne Social Desirability Scale (MCDS; Crowne & Marlowe, 1960; Reynolds, 1982) was utilized.

**Delimitations of the Study**

**Literature Review**

This study focused on adult attachment style and not on God attachment; the literature review was conducted accordingly. Furthermore, there are many varying measurable constructs related to religious coping. However, the focus of the literature review was on positive and negative religious coping based on the studies by Pargament and colleagues (1998a) and did not include information on general coping methods or other forms of religious coping.

**Sample Population**

There are many missionaries from both Old Sending Countries (OSC) and New Sending Countries (NSC) that serve in their own countries. While their service is often sacrificial and
ripe with many similar stressors, the intent of this study was to capture the component of cross-cultural living, which has been known to be one of the greatest stressors missionaries face.

**Measurement Tools-Attachment Style**

The research attempted to obtain scores that reflect the characterizations of the attachment dimensions that are most likely to cause problems in missionary service. Those with high levels on either dimension of anxiety or avoidance, or both in combination, are assumed to have an insecure adult attachment orientation (Mallinckrodt & Wei, 2005; Wei et al., 2007). However, Keister (2010), whose study did not support previous attachment findings, postulated that by grouping the preoccupied, dismissive, and fearful attachment styles into an overall insecure attachment category, the nuances of each insecure attachment style were lost. That being said, this study did reveal further limitations of the measurement tools for this population, which are discussed with the findings.

**Social Desirability Scale**

There are several short forms of the Marlowe-Crowne Social Desirability Scale MCSD (Crowne & Marlowe, 1960; Reynolds, 1982; Strahan & Grabesi, 1972); however, the short form C designed by Reynolds (1982) contains language that is conducive to a missionary setting and meets psychometric integrity (Loo & Thorpe, 2000).

**Brief RCOPE**

Pargament et al. (1998a) noted that with use of the Brief RCOPE, only 33% of the total variance of religious coping was explained by the factor analyses of the positive and negative religious coping methods. The tool was not intended to be a substitute for a more thorough analysis of specific religious coping methods, but it can serve complementary purposes.
It was anticipated that certain items on the Brief RCOPE might be subject to discussion for this sample population. For example, “reappraisal of the demonic” is listed as a negative coping pattern. This may be considered “negative” religious coping in secular settings. However, in evangelical Christian circles, spiritual warfare is considered a valid part of faith and missionary service (Anyomi, 1997; Kim, 2009; O’Donnell & O’Donnell, 1992b, 2009, 2012; Taylor, 1997). Recognizing spiritual demonic forces can be considered healthy and appropriate. Overemphasis on the demonic or “seeing a demon under every rock” is considered unhealthy and excessive. Therefore, statistical consideration was made to isolate this question and consider its factor loading scores.

**Definition of Terms**

For the purposes of this study, the following definitions are supplied.

Definitions related to attachment theory:

Attachment Style: Based on social and personality psychology, attachment styles are conceptualized as systemic patterns of expectations, needs, emotions, emotion-regulation strategies, and social behaviors that result from the interaction of an innate attachment behavioral system (Bowlby, 1969, 1988; Shaver & Mikulincer, 2002) and history of attachment experiences that usually begin in relationships with parents and/or early primary caregivers (Fraley & Shaver, 2000; Schore, 2002). These representations may influence a person's expectations, emotions, defenses, and relational behavior in all close relationships and extend into adulthood, where they can be seen in the domains of parenting and close peer relationships, including romantic relationships (Bartholomew &

Attachment Anxiety: Defined as involving a fear of interpersonal rejection or abandonment, attachment anxiety is an excessive need for approval from others, and distress when one’s partner is unavailable or unresponsive (Wei et al., 2007).

Attachment Avoidance: Defined as involving fear of dependence and interpersonal intimacy, attachment avoidance is an excessive need for self-reliance, and reluctance to self-disclose (Wei et al., 2007).

Insecure Attachment Style: Those who score highly on either or both of the dimensions of anxiety or avoidance are assumed to have an insecure adult attachment orientation (Wei et al., 2007). Insecure attachment style also encompasses those described as Preoccupied, Dismissing, or Fearful (Bartholomew & Horowitz, 1991).

Secure Attachment: People with low levels of attachment anxiety and avoidance can be viewed as having a secure adult attachment orientation (Brennan et al., 1998; Lopez & Brennan, 2000; Mallinckrodt, 2000). This type of attachment is characterized by a positive view of self and a positive view of others. Individuals with this type of attachment are generally comfortable with intimacy and autonomy. They are willing to rely on others for support and are confident that others value them (Collins & Feeney, 2000; Sibcy, 2010).

Definitions related to stress perception:

Perceived Stress, Experience of Stress, Stress Perception: The degree to which situations in one’s life are appraised as stressful (Cohen, Kamarck, & Mermelstein, 1983).
Psychological stress: A particular relationship between the person and the environment that is appraised by the person as taxing or exceeding his or her resources and endangering his or her well-being (Lazarus & Folkman, 1984).

Definitions related to sample population:

Attrition: A general term which refers to departure from the field service by missionaries, regardless of the cause (Taylor, 1997).

Evangelical: "Evangelicals emphasize the Gospel of forgiveness and regeneration through personal faith in Jesus Christ, affirm orthodox doctrine and the truth of historical biblical Christianity, regard the Scriptures as the inspired and infallible Word of God for every generation, and believe in the urgency of missionary outreach" (Miethe, 1988, p. 86).

Host Country: The cross-cultural setting or foreign country in which the missionary lives and serves.

Member Care: “Member care is the ongoing investment of resources by mission agencies, churches, and other mission organizations for the nurture and development of missionary personnel. It focuses on everyone in missions (missionaries, support staff, children, and families) and does so over the course of the missionary life cycle, from recruitment through retirement “(O’Donnell, 2002c, p. 4).

Missionary: "A missionary is someone who goes out for the sake of the Name, accepting nothing from the Gentiles. Private material gain must not be the motive. And even genuine humanitarian concern, though crucial, is not the driving motive. Rather the missionary is propelled by a deep love for the Name and glory of God. Like the apostle
Paul, the missionary's aim is to "bring about the obedience of faith among all the Gentiles, for His name's sake" (Romans 1:5) " (Piper, 1993, pp. 227-228).

New Sending Countries (NSC): Refers to eight nations with a younger history of modern missions. These eight are Ghana, Nigeria, Costa Rica, Brazil, India, South Korea, the Philippines, and Singapore (Taylor, 1997).

Old Sending Countries (OSC): Refers to six nations with a longer history of modern missions. They are Australia, Canada, Denmark, Germany, the United Kingdom, and the United States (Taylor, 1997).

Passport Country: The country where the missionary was born and where his or her passport was issued. In some cases, a person may have been born in one country and raised in another. Therefore, for the sake of this study, the passport country will be considered to be the country with which the missionary is most familiar, call “home,” or from which he or she was sent or to which he or she will return after missionary service.

Premature or Preventable Attrition: A more delicate issue of attrition and refers to attrition that could have been avoided by better initial screening or selection, more appropriate equipping or training, or more effective shepherding during missionary service (Taylor, 1997).

Unpreventable Attrition: Understandable or acceptable attrition such as retirement, completion of a contract, medical leave, or “legitimate call” to another ministry (Taylor, 1997).

Definitions related to religious coping:

Negative Religious Coping: Spiritual discontent, punishing God reappraisals,
interpersonal religious discontent, demonic reappraisal, and reappraisal of God's powers (Pargament et al., 1998a).

Positive religious coping: Seeking spiritual support, religious forgiveness, collaborative religious coping, spiritual connection, religious purification, benevolent religious reappraisal and religious focus (Pargament et al., 1998a).

Religious coping: The use of religious beliefs or practices to respond to a perceived stress, threat, or loss (Nelson, 2009).

Spirituality: Spirituality is a search for the sacred (Pargament, 1997).

**Significance of the Study**

Overall, large gaps exist in the research on missionary populations (Hawley, 2004; Keckler, Moriarty, & Blagen, 2008; Kim, 2009; Navara & James, 2002, 2005; O’Donnell, 1995), and specifically in ways that bridge theory with research (Hawley, 2004). Moreover, there is a gaping hole in the literature on the proposed theoretical model. While individually each construct (attachment style, stress perception, religious coping) represents an important component of missionary service, synergistically the interrelatedness might make the difference between effective and ineffective service.

The assessment of these constructs and how they do or do not interrelate may be considered in pre-field assessments, ministry placement, level of support needed, or the provision of specific interventions to address perception of stress or spiritual coping (Pargament et al., 1998a) or to boost attachment security (Mikulincer & Shaver, 2007).

**Perceived Stress Scales**

Numerous studies have been conducted to measure the types of stressors missionaries
endure (Bagley, 2003; Carter, 1999; Chester, 1983; Gish, 1983; Irvine et al., 2006; Schaefer et al., 2007). Several lengthy scales exist, such as the 65-item scale utilized by Gish (1983) and Carter (1999), and one with over 100 items, developed by Bosch (2014). The adapted CHOPS Stress Inventory is much shorter and was used alongside the psychometrically tested 10-item Perceived Stress Scale (Cohen et al., 1983). As results of this study demonstrated potential utility, the adapted CHOPS Stress Inventory (O’Donnell, O’Donnell, & Tone, 2014) may provide a new shortened quantitative scale to measure perceived missionary stress.

**Larger Societal Impact**

There are many segments of society similar to the missionary population that may indirectly benefit from this study. Embassy workers, international businesspeople, military personnel, and humanitarian aid workers share occupations with similar pressures and experiences as missionaries. Many secular agencies also struggle with choosing the right candidates and reducing premature attrition (Anderson, 2005; Cerny et al., 2007; Jun, Lee & Gentry, 1997; White, Absher, & Huggins, 2011). Findings of this study have clear implications for missionary agencies and perhaps indirect implications for other secular service organizations.

**Summary of the Significance of the Study**

Research has already made a connection between attachment style and perceived stress (Kemp & Neimeyer, 1999; Kim, 2009) and attachment style and religious coping (Keister, 2010; Schottenbauer et al., 2006). Yet there was no published research on the connection between the three constructs (attachment style, perceived stress, and religious coping) in longer-term missionaries, an understudied population (Keckler et al., 2008). Missionaries’ unique characteristics provided a rich base from which the proposed variables could be studied. The
research questions for the study investigated a potential model for these three variables in relationship, which has also had not been addressed in any study with any population.

Research on this unique and untapped population can inform both missionaries and those who care for them how these three variables interplay. Consider that over the past few decades, member care services have grown exponentially in their sophistication and service delivery (O’Donnell, 2002b, 2002c, 2006). Mission agencies strive to send out people who are equipped physically, emotionally, and spiritually for the task at hand (Britt, 1983; Lindquist, 1997; Schubert, 1999; York, 1993) as well as to provide targeted support throughout their missionary career (Erikkson, 2012; O’Donnell, 1988; Pollock, 2002). The desire to reduce the number of missionaries who prematurely leave missionary service (Hay, Lim, Blöcher, Ketelaar, & Hay, 2007; Taylor, 1997) or who may resort to negative religious coping due to the inherent stressors of missionary life is of utmost importance. A more thorough discussion of the theoretical model that was tested is provided in Chapter Two.

The social relevance of this study extends across the spectrum of the missionary endeavor from the missionaries to mission sending agencies, member care workers, and churches (Engel & Dyrness, 2000; Taylor, 1997). This study also has the potential to be helpful to senders of other sojourners such as embassy and military personnel, humanitarian aid workers, and business executives, all of whom struggle with choosing the right candidates and reducing premature attrition (Anderson, 2005; Cerny et al., 2007; Jun et al., 1997).

Theoretical/Conceptual Framework

The theoretical model for the proposed study was based on the current understanding of attachment theory, perception of stress, and religious coping. Attachment theory provided a rich
conceptualization of how early patterns of relationships formed in the implicit memory system affect future relationships and psychological functioning. The attachment system is activated under stress, and a confluence of internal processes allows the individual to assess and appraise the stress and to subsequently seek relief through coping mechanisms.

For many individuals, coping mechanisms include religious coping, which may consist of positive or negative religious coping methods. Positive religious coping may lead to beneficial outcomes and a reduction in the perception of stress. Negative religious coping may lead to a greater level of perceived stress, with the potential for less favorable outcomes.

The model proposed a relationship existed between the variables of attachment style, perception of stress, and religious coping. Yet to date, this proposed model had not been tested with any population. This study aimed to test this model in a missionary population. Although the model was not fully supported, it still may have implications for program evaluation or development in member care services. Results may also provide missionaries a better understanding of how these three variables interplay in their lives and ministries.

**Organization of Remaining Chapters**

The following chapters include the literature review as it related to the constructs of this study in missionary or religious populations (Chapter Two), the methods section (Chapter Three), statistical analysis and results (Chapter Four), and a discussion of the findings, along with implications and recommendations for future research (Chapter Five).
Chapter One Summary

Missionaries are a unique population (Navara & James, 2002, 2005) who respond to a Biblical mandate to cross cultures to serve in difficult and often stressful conditions (Eenigenburg & Bliss, 2010; Foyle, 2001; O’Donnell & O’Donnell, 1992a). The stressors missionaries experience can be both normative and non-normative and may include traumatic stress (Bagley, 2003; Carr, 1994; O’Donnell & O’Donnell, 2009, 2012). Stress activates the underlying attachment schemas (Cozolino, 2010; Siegel, 1999) and reveals the internal working models of self and others (Kim, 2009). Attachment style largely determines how the missionary perceives the stress (Kemp & Neimeyer, 1999; Kim, 2009) along with how they will cope religiously (Keister, 2010; Schottenbauer et al., 2006). Religious coping can be either positive, leading to beneficial outcomes which will attenuate the perception of stress, or negative, leading to less favorable outcomes and furthering the perception of stress.

Missionaries are a largely understudied population and this study provided a promising context from which to examine the relationship between three key variables: attachment style, stress perception, and religious coping. The significance of the study involved the testing of a model to understand how these three variables relate. The model, although not fully supported, does lead to important program implications for sending agencies in pre-screening, ministry placement, member care services, and targeted intervention strategies. Results of the study may have implications for other sojourner groups such as military personnel, international business executives, embassy workers, or humanitarian aid workers.
CHAPTER TWO: LITERATURE REVIEW

Overview

This chapter reviews the pertinent literature relating to adult attachment style, perception of stress, and religious coping. It begins with an explanation of the proposed theoretical model that suggested a relationship between these three variables. Due to the limited research on these three variables together, a review of the literature on various combinations of each of two variables will follow. The following combinations of variables will be reviewed in the literature: attachment style and perception of stress, attachment style and religious coping, and the bi-directional relationship between perceived stress and religious coping. As the research literature is reviewed, the relationship between the three variables emerged, including the rationale for the proposed model and study.

Introduction to the Theoretical Model

This study proposed a theoretical model regarding the relationship between three variables: adult attachment style, perception of stress and religious coping. To provide an appropriate context for the model, a brief review of each variable is offered.

Attachment Style

According to attachment theory, early experiences with primary caregivers are embedded in the implicit memory system of the child (Cozolino, 2010; Siegel, 1999). Children who have a primary caregiver who is reliable, available, and nurturing in a consistent pattern are more likely to develop secure attachment styles (Bowlby, 1969, 1973, 1988; Siegel, 1999). Conversely, children who have a primary caregiver who is not nurturing or is inconsistent or unavailable are
more likely to develop insecure attachment styles (Bowlby, 1969, 1973, 1988; Cozolino, 2010; Sroufe & Siegel, 2011).

Over time, these early relationships with attachment figures lead to the development of a schema or mental model of security called the Internal Working Model. The Internal Working Model provides a lens through which the person views him or herself and views the world (Bartholomew & Horowitz, 1991; Kim, 2009; Sibcy, 2010). This Internal Working Model in turn forms a prototype that influences later relationships outside the family (Ainsworth, 1973, 1985, 1991; Ainsworth et al., 1978; Bartholomew & Horowitz, 1991; Cozolino, 2010; Siegel, 2010). The person utilizes this internal lens, subconsciously filtering people and situations through this grid and making assessments of safety, security, self-worthiness, self-efficacy and a host of other appraisals (Sibcy, 2010; Straub, 2009).

Both secure and insecure attachment schemas shape and impact the individual in key areas of functioning across the lifespan and in a variety of ways. Under stress, attachment-based internal working models activate, leading to thoughts, emotions, and behaviors consistent with the particular internalized working model (Cozolino, 2010; Kemp & Neimeyer, 1999).

Adult attachment researchers have identified four prototypic attachment styles derived from two underlying dimensions: anxiety and avoidance (Bartholomew & Horowitz, 1991; Brennan et al., 1998; Collins & Feeney, 2000; Fraley & Waller, 1998). The anxiety dimension refers to the sense of self-worth and acceptance, or lack thereof, one feels in relation to others. The avoidance dimension refers to the degree to which one either approaches or avoids intimacy and interdependence with others (Collins & Feeney, 2000).

Briefly, securely attached adults are low in both attachment-related anxiety and avoidance and are comfortable with intimacy. Furthermore, they are willing to rely on others for
support, and are confident that they are valued by others (Collins & Feeney, 2000). Preoccupied (anxious-ambivalent) adults are high in anxiety and low in avoidance. They have an exaggerated desire for closeness and dependence, as well as a heightened concern about being rejected (Collins & Feeney, 2000). Dismissing avoidant individuals are low in attachment-related anxiety but are high in avoidance. They view close relationships as relatively unimportant, and they value independence and self-reliance (Collins & Feeney, 2000). Fearful avoidant adults are high in both attachment anxiety and avoidance. Although they desire close relationships and the approval of others, they avoid intimacy because they fear being rejected (Collins & Feeney, 2000).

The two orthogonal dimensions of anxiety or attachment result in characteristic ways of coping (Brennan et al., 1998; Mikulincer & Shaver, 2005). Those with anxious attachment styles typically resort to hyperactivating strategies to cope. Mikulincer and Shaver (2005) described these as intense efforts to attain proximity to attachment figures to ensure their attention and support. People who rely on these hyperactivating strategies compulsively seek proximity and protection. They are hypersensitive to signs of possible rejection or abandonment, and are prone to ruminating on personal deficiencies and threats to relationships (Mikulincer and Shaver, 2005).

Conversely, persons with an avoidant attachment style utilize deactivation strategies to cope. These strategies include inhibition of proximity-seeking inclinations and actions. They involve the suppression or discounting of any threat that might activate the attachment system. Those who rely on these strategies tend to maximize distance from others. They experience discomfort with closeness, strive for personal strength and self-reliance, and suppress distressing thoughts and memories (Mikulincer and Shaver, 2005). Furthermore, individuals with avoidant
attachment schemas, who perceive relationships as unsupportive, behave in compulsively self-reliant manners (Bowlby, 1973). They are not able to turn to others for support in stressful situations, nor do they possess internalized resources for comfort (Solomon, Ginzburg, Mikulincer, Neria, & Ohry, 1998).

These coping strategies are critical for the population to be studied. A myriad of attachment-related constructs emerge as the missionary navigates the cross-cultural environment. In fact, the acculturation process itself is related to attachment theory (Wang & Malinckrodt, 2006). As the stress activates the attachment system, the internal working models influence the overall locus of control and appraisal (Dilmaç et al., 2009; Miluklincer & Florian, 1995; Nyklicek, Vingerhoets, & Zeelenberg, 2011), as well as the concepts of self-esteem and self-efficacy (Bovier, Chamot, & Perneger, 2004; Foster et al., 2007; Lopez & Brennan, 2000; O’Connell-Corcoran & Mallinckrodt, 2000; Sibcy, 2010; Straub, 2009; Van Buren and Cooley, 2002).

The internal schemas influence whether or not the person will seek support (DeFronzo et al., 2001) and specifically psychological help (Shaffer et al., 2006). The attachment style also influences attitudes toward self-disclosure (Mikulincer & Nachshon, 1991), as well as self-disclosure about emotional states (Zech et al., 2006). Most importantly, attachment style affects interpersonal and romantic relationships (Bartholomew & Horowitz, 1991; Brennan & Shaver, 1995; Brennan et al., 1998; Collins & Read, 1990; Feeney & Noller, 1991; Fraley & Waller, 1998; Lopez & Brennan, 2000; Schwartz & Begley, 2002; Siegel, 1999, 2010; Sroufe & Siegel, 2011; Wei et al., 2005), which are often cited as a source of stress (O’Donnell & O’Donnell, 2009, 2012). Conflict with other workers, the sending agency, or nationals is commonly reported in missionary settings (Chester, 1983; Dipple, 1997; Eenigenburg & Bliss, 2010;
Johnson & Penner, 1981; Kim, 2009; Tayler, 1997). How conflict is managed is a function of attachment (O’Connell-Corcoran & Mallinckrodt, 2000; Pistole & Arricale, 2003), as are general attitudes toward leadership and authority (Davidovitz et al., 2007).

In addition to relationship issues, attachment style influences numerous other areas pertinent to missionary life. For example, attachment styles affect overall general coping patterns (Mikulincer & Florian, 1995, 1998; Ognibene & Collins, 1998; Sroufe, 2005), including religious coping (Corsini, 2009; Granqvist, 2005; Keister, 2010; Schottenbauer et al., 2006), which is a key variable of the proposed study. Moreover, attachment style influences the relationship with God. Numerous studies suggest that God serves as an attachment figure (Cooper, Bruce, Harman, & Boccaccini, 2009; Granqvist, 2005; Granqvist, Mikulincer, & Shaver, 2009; Granqvist et al., 2010; Kirkpatrick, 1997, 1998; Kirkpatrick & Shaver, 1990).

Attachment styles influence the overall perception of stress (Kemp & Neimeyer, 1999; Kim, 2009; Koopman et al., 2000; Krenke-Seiffge, 2006) as well as how well emotions are regulated (Kring & Sloan, 2010; Kring & Werner, 2004; Mikulincer & Florian, 1995, 1998; Schore, 2000, 2002; Schore & Schore, 2008; Wei et al., 2005). Emotion regulation can be an important indicator of the overall ability to cope under stress. That being said, both emotional health and physical health are essential to missionary service (Foyle, 2001). Physical health is also influenced by attachment styles (Maunder & Hunter, 2008; Taylor et al., 2000), as is perception of pain (Kolb, 1982; Meredith, Strong, & Feeney, 2006; Mikail, Henderson & Tasca, 1994). Additionally, social ties are linked with physical health (Cohen, 2004; House, Landis, & Umberson, 1988), and attachment style influences numerous areas related to pro-social behaviors (Vogel & Wei, 2005), such as social connectedness (Wei et al., 2012), perception of support (Mikulincer and Shaver, 2009) and specifically perception of social support (Declercq &
Palmans, 2006; Priel & Shamai, 1995). Physical health is also implicated in emotional or psychological health (Koenig, 2009) and attachment theorists have long linked attachment schemas to overall psychological functioning (Fraley, Fazzari, Bonanno, & Dekel, 2006; Jones, 1996; Sibey, 2000; Siegel, 1999, 2010).

Additional areas influenced by attachment style and pertinent to missionary life include care-giving behaviors (Mikulincer et al., 2005; Vogel & Wei, 2005), gratitude, altruism, empathy (Mikulincer & Shaver, 2005), and self-compassion (Wei et al., 2011). Missionary life may also be affected by perceived racial discrimination, which is related to attachment style (Wei et al., 2012), as are styles of adaptive and maladaptive humor (Besser, Luyten & Mayes, 2012), perfectionism (Wei, Heppner, Russell & Young, 2006), social status (Ross, 2007) and general satisfaction with life (Hastings, 2012). Cross-cultural ministry has the potential to impact positively or negatively anyone of these attachment related constructs.

While each of these areas apply to missionaries who often live and serve in highly stressful environments, only two of these were focused upon in this study. Therefore, for the purposes of this study, two key constructs related to attachment style were examined: that of the experience or perception of stress and religious coping.

**Perception of Stress**

Stress is common to the human experience and can actually be beneficial and necessary for growth (Joseph & Linley, 2005). However, too much stress over an extended period of time can lead to a number of negative health and interpersonal consequences (Cohen, Janicki-Deverts, & Miller, 2007; Jennings, 2007). It is rarely the stress itself but rather the perception of stress that can lead to negative results (Cohen et al., 1983; Cohen & Williamson, 1988). Generally speaking, perception of stress as a construct is found within the framework of the appraisal and
coping literature. For example, as highlighted previously, Lazarus and Folkman (1984) described psychological stress as a particular relationship between the person and the environment that is appraised by the person as taxing or exceeding his or her resources and endangering his or her well-being. The cognitive appraisal process includes a primary appraisal in which the person evaluates potential harm or benefit to self or loved ones, goals, values, or commitments. In a secondary appraisal, the person evaluates what can be done to prevent harm or improve benefits, and what coping options are available (Folkman, Lazarus, Dunkel-Schetter, DeLongis, & Gruen, 1986). How well a person copes with stress depends on a variety of factors such as the internal resources of mastery, self-esteem, and external resources such as social support (Bovier et al., 2004), which are subsequently influenced by attachment style.

Previous research has linked the perception of stress to the individual’s attachment style (Kemp & Neimeyer, 1999; Kim, 2009). Those with secure attachment styles perceive less stress while those with anxious and insecure attachment styles are more likely to have an increased perception of stress (Kemp & Neimeyer, 1999). Thus, the literature supports attachment style as a variable that influences the perception of stress.

Perception of stress, however, is not a monolithic construct. In fact, in the larger construct of attachment theory, multiple confluent factors can influence how stress is perceived. For example, how much control a person has over a situation will determine the extent to which it is perceived as stressful (Foyle, 2001). In addition to locus of control issues, other attachment related schemas (internal working models) previously mentioned also converge, such as self-esteem, self-efficacy, perception of support, pro-social attitudes and behaviors, and whether missionaries will seek help if needed. Each of these attachment-related factors influence the perception of stress.
Previous research has identified a number of confluent and overlapping stressors missionaries are exposed to over the course of missionary service (Bagley, 2003; Carr & Schaefer, 2010; Carter, 1999; Chester, 1983; Gish, 1983; Irvine et al., 2006; Johnson & Penner, 1981; O’Donnell & O’Donnell, 1992b, 2009, 2012; Schaefer et al., 2007). Some of this stress is normative and expected, while other types of stressors are non-normative and can include wars, violent uprisings, natural disasters, kidnappings, disease outbreaks, or increased spiritual warfare (Anyomi, 1997; Bagley, 2003; Kim, 2009; Irvine et al., 2006; O’Donnell & O’Donnell, 1992b, 2009, 2012; Schaefer et al., 2007). Due to the increasing upheaval and instability around the world, some cross-cultural missionaries are exposed to a higher degree of traumatic stressors than their counterparts (Bagley, 2003, Irvine et al., 2006; Schaefer et al., 2007). Yet, little is known about how missionaries’ attachment style factors into how they perceive the stressors or how they cope religiously.

In summary, missionaries are exposed to a multitude of stressors across a wide domain of functioning. High stress amplifies the attachment style already present. Understanding how these constructs interact is an important and untapped area of exploration. As previously mentioned, attachment style also affects how someone will cope religiously (Granqvist, 2005; Keister, 2010; Schottenbauer et al., 2006), which leads us to explore briefly the third construct of this proposed study: religious coping.

**Religious Coping**

While general coping strategies are important in the overall discussion of stress, religious coping is extremely important in missionary populations due to the religious vocation they have chosen (Burke 1991; Ellison & Lee, 2010; Pargament, Koenig, Tarakeshwar, & Hahn, (2001a; Stets & Burke, 2000; Stryker, 1987; Stryker & Burke, 2000). It is critical to explore how
missionaries cope as their personhood is intricately tied to their religious vocation (Pargament, et al., 2001b) and is largely an unexplored area of research. The most vital relationship a missionary has is with God. Therefore, how missionaries cope religiously intuitively appears important to their physical, emotional, and spiritual well-being. How the missionary copes religiously is also important to the missionary endeavor. Patterns of religious coping that emerge during missionary service can have either a helpful or harmful effect that ripples through the mission community and beyond to the host nation.

Individuals cope under stressful circumstances in a variety of ways (Pargament, 1997). In brief, Pargament and colleagues (1998a) have uncovered two distinct patterns of religious coping, a positive pattern and a negative pattern. The positive patterns of religious coping styles are described as seeking spiritual support, religious forgiveness, collaborative religious coping, spiritual connection, religious purification, benevolent religious reappraisal, and religious focus which largely result in positive outcomes, especially in the realm of mental health. Positive results include benevolent outcomes, such as fewer symptoms of psychological distress, and psychological or spiritual growth as a result of the stressor (Pargament et al., 1998a).

Pargament et al. (1998a) have also identified negative patterns of religious coping, reflective in a different set of religious coping methods. They include spiritual discontent, punishing God reappraisals, interpersonal religious discontent, demonic reappraisal, and reappraisal of God's powers. These coping methods typically result in negative stress-related outcomes such as signs of emotional distress, depression, poorer quality of life, psychological symptoms, and callousness towards others. Negative religious coping and negative beliefs can damage mental health (Ellison & Lee, 2010; Exline, Yali, & Lobel, 1999; Weber & Pargament, 2014). Conversely, based on findings by Ano and Vasconcelles (2005), negative religious
coping may sometimes result in positive growth. Thus, negative religious coping may have mixed impact on one’s perception of stress.

Thus, current findings suggest that religious coping can produce increased perceived stress or reduced stress, depending on how religious resources are applied (Pargament, 2002a; Pargament et al., 1998a, 1998b). This is consistent with findings by Koenig (2009), who reported that while religious beliefs and practices represent powerful sources of comfort, hope, and meaning, they are often entangled in neurotic and psychotic disorders. Without a doubt, religious coping has a complex relationship with perceived stress. For that reason, this model suggests a bi-directional relationship between perceived stress and religious coping.

**Relating the Three Variables**

How the three constructs of attachment style, perception of stress, and religious coping interplay in missionary populations is an important and untapped area of research. Our current understanding of the three variables helped inform this research. As previously pointed out, one’s attachment style has the potential to influence a myriad of areas pertinent to missionary work, potentially exacerbating or mitigating the perception of stress. The level of perceived stress will ultimately lead to coping mechanisms to manage the stress.

Missionaries are likely to turn to their faith or religion to cope. Religious coping can be either positive or negative with outcomes that can either exacerbate or mitigate stress. The theoretical model proposed that these three constructs--attachment style, perception of stress and religious coping--interplay in a convergent and dynamic process as illustrated by the following diagram.
As the diagram illustrates, it was theorized that attachment style influences both the perception of stress and religious coping. In the interaction between attachment style and perceived stress, it was hypothesized that those with secure attachment would perceive the stress as less threatening. Those with insecure attachment styles (anxious or avoidant) would perceive the stress at a higher level than those with a secure attachment style. Based on this model, the perception of stress, in turn, affected to which religious coping styles individuals would turn. It was hypothesized that those with secure attachments would perceive less stress, resulting in higher levels of positive patterns of religious coping. Those with anxious or avoidant attachment styles would perceive the stress as more threatening. Although positive religious coping might
have increased as a result, it was also possible that negative religious coping would increase at higher levels for those with insecure attachment schemas.

However, as seen by the two-way arrow, it was hypothesized that the perception of stress and religious coping were bi-directional, in that the perception of stress influenced religious coping and religious coping in turn influenced the perception of stress. In other words, if the perception of stress resulted in positive religious coping, the person may sense peace or that God has allowed the circumstances for a higher purpose. The stress would therefore result in positive outcomes. This, ultimately, would lead to a reduction in perception of stress, more benevolent religious outcomes, and potentially toward psychological or spiritual growth.

Conversely, if the perception of stress leads to negative religious coping, the outcome is less certain. The individual may perceive the stressor as a punishment of God or feel abandoned by God, increasing the perception of stress resulting in negative outcomes physically, emotionally, and/or spiritually. As noted previously, in some circumstances, a positive outcome from the negative religious coping may occur (Ano & Vasconcelles, 2005).

As the model depicts, attachment style also affects religious coping. It was hypothesized that those with a secure attachment will choose more positive forms of religious coping. Those with anxious or avoidant attachment style may choose more negative forms of religious coping.

To summarize, this model proposed that there is a relationship among three variables: attachment style, perception of stress, and religious coping. The relationships between attachment style, the perception of stress and religious coping were hypothesized as being unidirectional. The relationship between perception of stress and religious coping was hypothesized to be bi-directional. Examining these three constructs in cross-cultural missionaries provided a
fertile and unexplored area of research, considering that attachment schemas were likely to be activated under multiple stressors in this religiously oriented population.

**Review of the Literature**

**Literature Search Strategy**

This study was important because the three variables examined had not been previously investigated in relationship with each other. In fact, no published literature examining these three constructs together in either general or missionary populations was found. Literature reviews were conducted using key words and variations of such of adult attachment style, stress, and religious coping. Various combinations of terms were utilized in an effort to find relevant research of these constructs. Further detail is provided below.

Using Liberty University library resources along with internet websites, searches were conducted in general search engines such as Google Scholar and Liberty Summons. Specific search engines were also utilized, such as Education Resources Information Center (ERIC) and Counseling and Psychology search engines, including the American Psychological Association (APA) resources PsycINFO, PsycARTICLES, PsycBOOKS, PsycCRITIQUES, and PsycEXTRA, and the American Theological Library Association of Religion (ATLAS), Proquest Religion. Additionally, a search of dissertations was conducted in the Proquest Dissertations and Thesis database, the Liberty University Digital Commons database, along with the International Bulletin of Missionary Research. Further research was conducted on specific missionary websites such as Member Care Resources, Missionary Care Resources, Link Care Center, World Evangelical Fellowship (WEF), Heart Stream Resources, and Barnabas International.
What surfaced from an extensive literature review revealed studies highlighting only two of the three variables, but never the three simultaneously. For example, previous studies have examined the link between attachment style and the perception of stress in the general population (Besser, Neria & Haynes, 2009; Cordon, Brown, & Gibson, 2009; Fraley et al., 2006; Krenke-Seiffge, 2006; Kemp & Neimeyer, 1999; Koopman et al., 2000; Mikulincer & Florian, 1998; Reiner, Anderson, Hall, & Hall, 2010) and also in one sample of missionaries (Kim, 2009). Other researchers have linked attachment style and religious coping (Corsini, 2009; Granqvist, 2005; Keister, 2010; Schottenbauer et al., 2006) and life stressors and religious coping (Ano & Vasconcelles, 2005; Bjorck & Kim, 2009; Bjorck & Thurman, 2007; Bong-Jae, 2007; Ellison, Roalson, Guillory, Flannelly, & Marcum, 2010; Exline et al., 1999; Harrison, Koenig, Hays, Eme-Akwari, & Pargament, 2001; Koenig, 2009; Lee, Roberts, & Gibbons, 2013; McConnell, Pargament, Ellison, & Flannelly, 2006; Pargament et al., 1990, 1994, 1998a; 1998b; 2000; Pargament, Feuille, & Burdzy, 2011; Pargament et al., 2001a; Tix & Frazier, 1998; Weber & Pargament, 2014; Zwingmann, Wirtz, Müller, Körber, & Murken, 2006). Yet, to date no published study was found that examines the relationship between attachment style, perception of stress, and patterns of religious coping in either the general or in missionary populations.

Given the above, this study aimed to investigate the three variables in concert. The following literature review highlights the most salient of the studies which discuss any two of the three variables. Based on the proposed theoretical model, the following combinations of variables will be examined in the literature: attachment style and religious coping, attachment style and perception of stress, and the bi-directional relationship between stress and positive and negative religious coping.
Attachment Style and Religious Coping

Much of the literature on attachment style and religious coping utilize components of this study, but none were found utilizing the same projected constructs. For example, numerous studies have investigated the relationship between God attachment and religious coping (Belavich & Pargament, 2002) and despite its relevance, God attachment as a unique variable is not part of this study. The rationale for the exclusion of the God attachment variable includes previous findings and the goals of the proposed study.

Belavich and Pargament (2002) suggested that attachment to God was predictive of spiritual coping, which, in turn, was predictive of adjustment. Belavich and Pargament postulated that attachment to God provides a useful framework for understanding why individuals choose particular coping strategies. In the same fashion, findings by Reiner, Anderson, Hall, and Hall (2010) suggested that like adult attachment anxiety, the God attachment anxiety was a unique and significant predictor of perceived stress. Nonetheless, this study aimed to understand the role of adult attachment only and its significance in influencing the other variables (perception of stress and religious coping). Therefore, by isolating adult attachment as a variable, it was possible to measure its influence on both perceived stress and religious coping. In other words, by removing the influence of God attachment as a variable, it was anticipated that there would not be a competing attachment style that might confound the results. In addition, the amount of statistical power (and hence number of participants for the study) would have needed to be higher if God attachment was included in this preliminary model.

Other studies have explored religious coping and attachment but utilized other measurements of religious coping. For example, Belavich and Pargament (2002) employed the
Religious Problem Solving Scale (RPSS; Pargament, Kennell, Hathaway, Grevengoed, Newman, & Jones, 1988). This tool measures styles of religious coping identified as *deferring*, *collaborative*, or *self-directed* (Pargament et al., 1988). Others have examined attachment style and religious activities in coping utilizing the Religious Coping Activities Scale (RCAS; Pargament et al., 1990; Corsini, 2009) or Ways of Religious Coping Scale (WORCS; Boudreaux, Catz, Ryan, Amaral-Melendez, & Brantley, 1995) along with other scales to measure religious coping (Keister, 2010).

Despite the disparities in measurement or term variations, Granqvist (2005) has theorized the bridge from secular adult attachment to religious coping. Granqvist (2005) suggested that the two share many of the same theoretical constructs. For example, he suggested that religious coping is particularly prevalent in situations that activate the attachment system and when confronted with stressful situations. He added that people with different attachment-related experiences and representations are likely to cope differently with the situations.

As highlighted previously, Granqvist (2005) examined different variables of attachment and religious coping. Specifically, he used God attachment, attachment history, religious coping, and parental religiosity. Additionally, Granqvist (2005) used a different form of measurement for attachment and religious coping than this study utilized. Granqvist’s (2005) study used an attachment history questionnaire, using mother and father prototypes of Hazan (1990) and the Religious Problem Solving Scale (RPSS) of *deferring*, *collaborative*, and *self-directed* as identified by Pargament et al. (1988). Nevertheless, in Granqvist’s study (2005), the relations between attachment history and religious coping were not significant.

However, results of Schottenbauer et al. (2006) do show a relationship between attachment style and religious coping. As part of a larger study, in a sample of 1,289 Christian
adults, Schottenbauer et al. (2006) replicated and extended previous research on mediators of attachment qualities and outcome (affective resolution), including appraisal, coping, and religious coping. The authors measured attachment quality utilizing the Measure of Attachment Qualities, (MAQ; Carter, 1997, as cited in Schottenbauer et al., 2006) and the RCOPE (Pargament et al., 2000) to measure religious coping. The authors reported that overall, they found substantial similarities between the models for general coping and religious coping, with unique patterns of appraisal, coping, and affective resolution for each attachment quality. Results of the general coping outcomes parallel similar findings in attachment literature. The results suggest that secure attachment qualities are associated with a more optimistic, resilient outlook, along with healthier coping methods and greater capacity for dealing with stress (Schottenbauer et al., 2006).

Conversely, individuals with ambivalent attachment qualities may react to stress with cognitive exaggerations, less adaptive coping styles, and strong negative affect. Avoidant attachment qualities are typically accompanied by withdrawal, less helpful coping attempts, and internalized distress related to exaggerated self-reliance (Schottenbauer et al., 2006).

Results of religious coping measures found that secure attachment predicted positive religious coping. They also found that anxious-ambivalent attachment qualities were associated with avoidant coping and negative religious coping, as mediated by appraisal. Furthermore, those with anxious-ambivalent attachment qualities were more likely to either perceive situations as more stressful or to encounter more stressful situations. Thus, their appraisals are more closely linked to the coping process.

For religious coping, the link between avoidant attachment qualities and affective resolution was direct. The authors found that this relationship was significant only in non-
interpersonal situations. They surmised that with various aspects of stressful events, persons who exhibit avoidant attachment qualities tend to choose forms of coping that avoid interpersonal and emotional engagement (Schottenbauer et al., 2006).

A similar study by Corsini (2009) examined the relationship between religious coping strategies, attachment beliefs, and emotion regulation in a mixed sample of college students. Corsini examined both God and adult attachment and religious coping by utilizing the Religious Coping Activities Scale (RCAS), which examines different nuances of religious coping such as Spiritually Based Activities, Good Deeds, Discontent, Religious Support, Plead, and Religious Avoidance (Pargament et al., 1990). The general findings of Corsini’s (2009) study indicated that individuals who report secure attachment with God and secure adult attachment are also more likely to use collaborative forms of religious coping. Additional findings show that individuals who reported using deferring and self-directing forms of religious coping were more likely to report less secure attachments with both God and adults (Corsini).

Two additional findings from Corsini’s (2009) study warrant attention. Corsini based two of his hypotheses on the conceptualization of religious coping outlined by Pargament et al. (1990) along with the attachment literature. Corsini’s study identified two Religious Coping subscales which were significantly correlated in the opposite direction with Emotion Regulation and Attachment than what was expected and hypothesized (2009). Corsini postulated that evangelicals utilize religious coping in ways that might be different than what Pargament et al. (1990) conceptualized. This hypothesis provided additional rationale for the study in a distinctly evangelical population who are very likely to turn to religion to cope.

Keister (2010) also examined the relationship between attachment style and religious coping strategies. In a sample of 189 Christian adults, Keister examined the three religious
problem-solving measures of deferring, self-directed, and collaborative, using the Religious Problem Solving Scale-Short Form (Pargament et al., 1988). Keister also used the Brief RCOPE (Pargament et al., 1998a), measuring positive and negative religious coping. Internal/private and external/social religious coping strategies were examined using the Ways of Religious Coping scale (WORCS; Boudreaux et al., 1995). Attachment style was measured utilizing the Experience in Close Relationships Revised (ECR-R; Fraley, Waller & Brennan, 2000; Keister, 2010).

Keister (2010) hypothesized that those with overall secure attachment would utilize more positive forms of religious coping than those with overall insecure attachment styles (i.e., preoccupied, dismissing, and fearful). A one-way, between-subjects ANOVA was conducted comparing the means of the secure and a composite score from the insecure attachment subscale of the Experience in Close Relationships-R (Fraley et al., 2000) and a composite score from the positive religious coping scale of the Brief RCOPE (Pargament et al., 1998a). The results were not statistically significant (Keister, 2010). No significant difference between how those with secure attachments and how those with insecure attachments utilized positive religious coping strategies were noted. Keister (2010) added that this result is not consistent with previous findings (e.g., Schottenbauer et al., 2006) and attributed the discrepancy to the possibility that by grouping the preoccupied, dismissive, and fearful attachment styles into an overall insecure attachment category, the nuances of each insecure attachment style were lost (Keister, 2010).

Keister’s (2010) second hypothesis predicted that those with insecure attachment styles (preoccupied, dismissing, and fearful) would use significantly more negative forms of religious coping than those with secure attachment styles. To test this hypothesis, Keister utilized the attachment style subscale of the ECR-R (Fraley et al., 2000) along with the composite score from
the negative religious coping scale of the Brief RCOPE (Pargament et al., 1998a). In a one-way, between-subjects ANOVA, the results were statistically significant (Keister, 2010). This suggested that those with insecure attachment styles used significantly more negative forms of religious coping than those with secure attachment. In summary, the overall results of Keister’s study on attachment style and religious coping indicated a significant relationship between an insecure attachment style and the use of negative religious coping strategies.

Another interesting outcome of the Keister (2010) study that warrants attention is that a Pearson Chi-Square test was used to assess whether or not a relationship existed between attachment style and religious coping strategies. The Pearson Chi-Square Test evaluated the differences between observed frequencies of religious coping styles utilizing the three subscales of the RPSS-Short Form (Pargament et al., 1988) (collaborative, self-directed, deferring) and the secure and insecure attachment subscales totals from the ECR-R (Fraley et al., 2000). Results indicated there was no statistical difference in observed and expected frequency in secure and insecure attachment styles in relation to the three methods of religious coping. In other words, the percentage of those using any one of the three problem-solving religious coping styles (collaborative, self-directed, deferring) did not differ by attachment style. This finding is inconsistent with Corsini’s (2009) study, which found a difference in the forms of religious coping based on respective attachment styles. This lack of consistency adds further impetus to further research in this area to help clarify the proposed relationship.

**Summary of Attachment Style and Religious Coping Literature**

The review of pertinent literature linking adult attachment style and religious coping revealed the need for further research. Studies are limited and the results inconsistent. For example, Granqvist (2005) did not find a significant relationship between secular adult
attachment and religious coping. Yet, results of Schottenbauer et al. (2006) indicated that secure attachment predicted positive religious coping. Additionally, Schottenbauer et al. found that anxious-ambivalent attachment qualities were associated with avoidant coping and negative religious coping, as mediated by appraisal. This result is consistent with Keister’s (2010) findings that indicate a significant relationship between an insecure attachment style and the use of negative religious coping strategies.

Another discrepancy was found between Keister’s (2010) and Corsini’s (2009) study. Keister’s study did not find any difference in percentage in use of the three forms of religious coping (deferring, collaborative, self-directed) based on particular attachment styles. Conversely, Corsini’s study results suggest that individuals who report secure attachment with God and secure adult attachment are more likely to use collaborative forms of religious coping. Individuals who use deferring and self-directing forms of religious coping are more likely to report less secure attachments with both God and adults (Corsini). Some of these discrepancies may be due to the different measurements tools or terminology used. The differences in findings may also be explained by the fact that religious coping is multi-faceted and different coping strategies may be used in varying ways depending on the situation (Keister, 2010; Pargament et al., 1988, 1998a).

It appears that the relationship between the constructs of religious coping and attachment style is complex. Therefore, a blanket statement concerning the relationship cannot be made. Nonetheless, a relationship does exist and further research help clarify and build on previous findings.

**Attachment Style and Perception of Stress**

Perceived stress or experience of stress has been linked to attachment style in several
studies (Besser et al., 2009; Cordon et al., 2009; Fraley et al., 2006; Koopman et al., 2000; Krenke-Seiffge, 2006; Mikulincer & Florian, 1998; Reiner et al., 2010). Findings by Kemp and Neimeyer (1999) add to the empirical evidence linking attachment style to the experience of stress.

Kemp and Neimeyer (1999) proposed that attachment is inextricably tied to the experience of stress. In a hypothesis consistent with attachment theory, they surmised that adults, like infants, are expected to seek out others for support and comfort primarily in times of stress. Therefore, the experience of stress activates the internal working models of attachment and elicits differential responses to the stress according to a person's characteristic style of attachment (Kemp & Neimeyer, 1999).

Kemp and Neimeyer (1999) investigated the relationship between interpersonal attachment and experiencing, expressing, and coping with stress in a sample of 193 participants. The sample pool had clearly identifiable attachment styles described by Bartholomew and Horowitz (1991) as secure, fearful, preoccupied, and dismissing and were examined along with a gender variable. The participants were asked to complete a stress narrative recalling a stressful event. The impact of the event was measured using the Impact of Events Scale (IES; Horowitz, Wilner, & Alvarez, 1979, as cited in Kemp & Neimeyer, 1999). Coping was assessed using a revised version of the Ways of Coping Scale (WOC; Folkman & Lazarus, 1985, 1988, as cited in Kemp & Neimeyer, 1999). Emotional distress and psychological symptoms were evaluated with the Brief Symptom Inventory (BSI; Derogatis, 1992, as cited in Kemp & Neimeyer, 1999).

Based on attachment theory, the authors predicted that securely attached individuals would experience relatively low levels of psychological distress. Their study showed that securely attached individuals reported significantly lower levels of psychological distress, thus
the findings received fairly consistent support. They reported that this finding was consistent both in respect to the intrusiveness of distressful thoughts after a stressful life event, and in relation to the overall psychological symptomatology (Kemp & Neimeyer, 1999). The results of the Kemp and Neimeyer’s (1999) study also provided clear support for the relationship between preoccupied attachment and the experience and expression of heightened psychological distress. This relationship was reported in both measurement scales for reported intrusiveness of distressing thoughts after a stressful life event (IES) as well as for the overall levels of distressing psychological symptoms (BSI).

The results for avoidant styles and fearful attachments were less clear. There was vague support for the relationship of avoidant attachment to the experience and expression of distress. The relationship of the fearful attachment style to the measures of distress and coping were not distinctive. However, individuals with fearful attachment showed higher levels of overall psychological symptoms than did dismissing individuals on the BSI. No significant effects were found for fearful attachment (Kemp & Neimeyer, 1999).

In the same fashion, the effects for dismissing attachment were unremarkable and were not consistent with previous attachment studies (Kemp & Neimeyer, 1999). The authors expected that people with dismissing attachment styles would achieve security in stressful contexts through deactivating strategies that minimize and deny the experience and expression of distress. As a result, they expected to see higher levels of avoidance on the IES and greater distancing on the WOC scale. Nonetheless, neither of these predictions was supported. Rather, participants in the dismissing group generally reported low levels of distress, which were significantly lower than fearful individuals on the BSI (Kemp & Neimeyer, 1999).

Kemp and Neimeyer (1999) reported that these findings were seemingly inconsistent
with theoretical formulations that associate the denial and distancing of dismissing attachment with unattended distress and psychological symptomatology. The authors proffered a number of possible limitations that may have contributed to the overall findings, such as the methodology used, the nature of self-reports, the possible denial of psychological symptoms, as well as the particular characteristics of the sample or the level of stress actually experienced. Nonetheless, the authors surmised that subject to the possible limitations, the study can be viewed as supporting the relationship between the quality of primary attachments and the experience and expression of psychological distress (Kemp & Neimeyer, 1999). Their study clearly emphasized the need for further studies.

Research on attachment style in missionary populations has not kept pace with the general advancements in attachment studies. However, Kim (2009) offers us the closest examination to date on how attachment style affects the perception of stress in a sample of missionaries. Kim’s study compared a sample of North American missionaries with Korean missionaries, examining the relationships among attachment style, perceived stress, sense of control, and coping patterns. Measurement tools included the Perceived Stress Scale (Cohen & Williamson, 1988), the Attachment Style Questionnaire (ASQ) (Feeney, Noller, & Hanrahan, 1994), and the Ways of Coping Questionnaire (Folkman et al., 1986, as cited in Kim, 2009). Overall findings suggest that in this sample of 110 missionaries, there was significant correlation between attachment style and perceived stress. Secure attachment tended to relate to low perceived stress for both groups. However, the two samples had different results with regard to the relationships between insecure attachment style and the perception of stress. The North American group results suggested that all insecure attachment scales were positively correlated with high scores on perceived stress. Conversely, in the Korean sample, only the ASQ Need for
Approval (fearful attachment) and Preoccupation with Relationships (preoccupied attachment) scales were positively correlated with high scores on perceived stress.

Kim (2009) pointed out additional cultural nuances that may have impacted the outcomes. This idea is consistent with other attachment studies that have surmised that cultural factors influence attachment style (Boncher, 2003; Bretherton, 1992; Minuchin, 2002; Rothbaum, Weisz, Pott, Miyake, & Morelli, 2000; Mallinckrodt & Wei, 2005). This potential relationship may be pertinent to the proposed study as well, as current teams of missionaries are likely to be multinational and multicultural (Greenlee, Cho, & Thulare, 2002). Kim (2009) added that some of the artifacts of the items of the attachment questionnaires may also contribute to the differences found. Kim also suggested that the application of the concept of attachment patterns that may be a factor between the two ethnic groups in the study.

Another important finding from Kim’s study is that duration of service correlated with perceived stress. Those serving on the mission field for less than 10 years had higher perceived stress than did those serving for more than 10 years. Kim (2009) postulated that the results suggest longer-term missionaries have learned how to deal with stress more effectively than shorter-term missionaries. While this finding is congruent to other literature on missionary stress (Dyment, 1989), it does contradict findings by Taylor and Maloney (1983), who found that perceived stress increased over time on the mission field.

**Summary of Attachment Style and Perception of Stress Literature**

Both the Kemp and Neimeyer (1999) and Kim (2009) studies exemplified the need for further research in this area. Together the studies made the connection between attachment style and perception of stress, yet the relationship remains unclear. For example, both the Kemp and Neimeyer (1999) and the Kim (2009) studies make a strong connection between secure
attachment style and a lower level of perceived stress. However, both studies have exposed some unexpected findings in the relationship between insecure attachment styles and perception of stress.

In review, the results of Kemp and Neimeyer (1999) study showed fairly consistent support between secure attachment and lower levels of psychological distress. The study also provided clear support for the relationship between preoccupied attachment and the experience and expression of heightened psychological distress. However, the results for avoidant, fearful, and dismissing attachments were less clear. Specifically, there was vague support for the relationship of avoidant attachment to the experience and expression of distress. The relationship of the fearful attachment style to the measures of distress and coping were not distinctive. Additionally, the effects for dismissing attachment were unremarkable and were not consistent with previous attachment studies (Kemp & Neimeyer, 1999).

Kim’s (2009) study also provides strong support for the relationship between secure attachment and perception of stress in both the North American and Korean sample. However, similar to Kemp and Neimeyer (1999), there were some unexpected findings for the insecure attachment style. The results of the North American group suggested that all insecure attachment scales were positively correlated with high scores on perceived stress. Conversely, in the Korean sample, only the ASQ Need for Approval (fearful attachment) and Preoccupation with Relationships (preoccupied attachment) scales were positively correlated with high scores on perceived stress. Therefore, despite the aforementioned cultural nuances and methodological concerns, further research is needed, specifically in regards to the insecure attachment style and perceived stress.
Stress in the Missionary Population

A brief contextualized review of the studies on missionary stressors provided further justification for this study. A number of researchers have identified the high degree of stress missionaries encounter (Bagley, 2003; Carr, 1994; Carr, 1997; Carr & Schaefer, 2010; Carter, 1999; Gardner, 1987; Gish, 1983; Irvine et al., 2006; O’Donnell, 1995; Schaefer et al., 2007). Therefore, stress in missionary populations has been well established (Foyle, 1987; O’Donnell, 1995; O’Donnell & O’Donnell, 1992b, 2009, 2012). This stress can exist on a continuum from mild to severe and from normative to non-normative across the lifespan of the missionary. However, with the exception of the study by Kim (2009), none of the studies investigated how attachment style influences the perception of the stress or how longer-term missionaries cope religiously. Furthermore, some interesting themes have emerged in the studies of missionary stress that warrant further investigation.

While some researchers clearly identify higher stress levels in missionary populations (Bosch, 2014; Carter, 1999; Gish, 1983; Irvine et al., 2006; O’Donnell, 1995; Schaefer et al., 2007) others have found reported stress to be less than expected (Chester, 1983). Chester’s survey-based study on 200 missionaries from 11 different countries reported that statistically speaking, missionaries are under no more stress than those in the other helping professions. However, this group of "helping professionals" may be denying or simply unable or unwilling to recognize the existence of the actual stress under which they live (Chester, 1983).

Carter’s study on missionary stress raised some similar concerns (1999). Carter aimed to replicate and expand on the original study conducted by Gish (1983) exploring specific stressors missionaries face. Carter surveyed 306 missionaries of the Christian and Missionary Alliance serving in 13 mission fields over an 8-year period. Using a semi-structured personal interview
and the Strain Response Form and based on previous work done by Gish (1983), Carter created a Stress Rating Form, a Likert-type rating scale designed to measure the amount of stress caused by potential stressors. The missionaries were asked to rate each stressor on a scale of 1 (causing no stress) to 5 (causing great stress). The findings on stress were consistently identified and replicated Gish’s 1983 study. However, Carter’s study rated the stressors on the whole as higher than Gish’s.

The two major themes that emerged, which encompassed most of the highest stressors, were interpersonal relationships and management issues. However, Carter reported that the missionaries consistently rated the stressors as “2” or “3” or low to moderate on a 5-point scale, but during the interviews indicated a substantial amount of stress. Carter surmised that like previous research suggests, missionaries may be unaware of the amount of stress they are under or may be underreporting (Carter, 1999).

Vanderpol (1994) conducted a meta-analysis of 15 studies on missionary selection, stress, and functioning. Overall in terms of missionary selection, successful candidates have been found to demonstrate interpersonal skills, flexibility, and adaptability, have a history of emotional stability, and were found to be no more pathological in their functioning than the general population (Vanderpol, 1994). Vanderpol found that in her analysis, missionary stress appeared to originate from two main sources: interpersonal stressors and job factors (1994). However, Vanderpol (1994) noted that missionaries were found to suffer from the effects of stress and burnout but were hesitant to disclose their feelings.

In another study, Irvine et al. (2006) conducted data mining procedures in a mixed qualitative and quantitative survey design. The 173 missionaries were surveyed about the nature and impact of traumatic stress experienced while serving as a missionary. The participants’
descriptions of traumatic stressors were divided into seven categories:

- System Failure, referring to failure of the participants' support system(s)
- Personal Crisis, including safety, illness, and miscellaneous related factors
- Work Stress
- Catastrophes
- Ethics
- Death
- Family Stress

Many respondents described events consisting of more than one traumatic stress category. In fact, the traumatic stress reported was universal, with the most frequent type involving system failure or personal crisis. Over half reported continuing symptoms almost a decade post-incident. Surprisingly, non-catastrophic stressors had a higher impact than catastrophic stressors and system failure had higher impact than other categories. Severity of the stressors was related to permanent negative change. Younger missionaries were more vulnerable to permanent negative change. Overall in this sample of missionaries, there was no difference in impact between acute and slower onset stressors. The authors added that it is not simply the severity of the stressor that demands attention (Irvine et al., 2006).

In summary, the researchers reported that the traumatic stress was associated with both destructive and salutogenic changes. The salutogenic changes are consistent with other research that shows growth may come from adversity (Joseph & Linley, 2005). In fact, in their sample of 173 missionaries with almost universal exposure to traumatic stress, two-thirds of the population, in spite of the negative impact, reported positive sequelae to their stressful experiences (Irvine et al., 2006).
One of the most compelling reasons to study attachment styles, perception of stress, and religious coping in missionary populations came from Bagley’s study (2003). As previously discussed, missionaries experience the continuum from normative to non-normative types of stressors, some of which may be traumatic. Bagley conducted research on 31 North American Wesleyan missionaries to determine the extent and nature of traumatic events experienced. Bagley (2003) also investigated the extent to which missionaries reported symptoms of Post-Traumatic Stress Disorder (PTSD) due to traumatic exposure on the mission field. Ninety-four percent of missionaries reported having been exposed to trauma on the field, with 86% reporting exposure to multiple incidents. This percentage was considerably higher than their exposure when off the field and could be attributed primarily to an increased risk of exposure to civil unrest and violent crime while serving on the mission field.

In this study, Bagley utilized a version of the Posttraumatic Stress Disorder Checklist Civilian Version (PCL-C: Weathers, Litz, Herman, Huska, & Kean, 1993, as cited in Bagley, 2003). The 17-item scale corresponds with the 17 symptoms of PTSD as described in the DSM-IV (Bagley, 2003). Bagley used two time frames to determine symptoms of PTSD. In the first measure, the participants were asked to rate their symptoms at the most difficult period of adjustment to trauma, and for the second timeframe, over the past month. Bagley (2003) stated that despite the high reporting of multiple traumatic events, less than half (42%) of respondents reported sufficient symptoms for a diagnosis of PTSD at the most difficult period. At the time of the study, no missionaries reported current symptoms at a level necessary for a diagnosis of PTSD.

Bagley (2003) added that the data suggested that missionaries from North America have a greater resilience to stress and trauma than the general North American population. This idea
was important for this study, as resilience is related to attachment style (Sroufe & Siegel, 2011). Siegel (1999) noted that attachment relationships may serve as catalysts of risk or of resilience; therefore, the resilience Bagley (2003) referred to might be explained by the missionaries’ attachment styles.

Furthermore, Bagley (2003) suggested that missionaries may have developed adaptive strategies to cope with high levels of chronic stress and trauma. In particular, Bagley recommended that attention be given to the ways and degree to which missionaries utilize religious coping strategies identified in the research conducted by Pargament and others (Pargament, 1997; Pargament et al., 1990, 1992, 1994).

Schaefer et al. (2007) reached similar findings. In their study of 256 missionaries, the researchers explored the frequency of traumatic events, the mental health impact, and factors associated with posttraumatic stress in two groups of missionaries, one representing a predominantly stable setting (Europe) and the other an unstable setting (West Africa). The 256 participants completed several self-report measures. Overall, the rate of traumatic events was significantly higher in the unstable setting. More frequent traumatic events were associated with higher posttraumatic stress. The researchers suggested that missionaries have a higher acceptance of risk and suffering for the sake of a purpose they strongly believe in (Schaefer et al., 2007). This acceptance appears to be an aspect of religious coping. It also raises the question whether the respective attachment styles of this sample had any influence on the presence of psychological symptoms or resilience factors, or whether the missionaries chose religious coping methods to deal with stressors.

Summary of Missionary Stress

The fact that missionaries suffer higher degree of stress across various domains is well
established. However, there is sparse research studying how attachment style factors into how this stress is perceived. The findings reviewed here exemplified the rationale for furthering the discussion of stress to include attachment style as a potential source of the stress perception.

For example, in Bagley’s study (2003), there is a lack of reported symptoms after multiple exposures to traumatic stress. This raises the question whether this lack of symptoms is due to the perception of stress, underreporting of stress, or underreporting of symptoms. The question could also be asked of whether or not there are inherent qualities of missionaries or coping skills that mitigate the stress which lessen its impact and/or reporting. In addition, 22.6% of Bagley’s sample reported a history of exposure to childhood abuse, typically understood to be a risk factor for the development of PTSD (Cozolino, 2010; Preston, O’Neal & Talaga, 2010; Schore, 2002; Siegel, 1999).

Generally speaking, healthy psychological functioning is also related to attachment style, with research suggesting that those with secure attachments function better psychologically (Siegel, 1999). Those with insecure attachment styles are more likely to develop and manifest psychological distress (Cozolino, 2010; Jones, 1996; Sibcy, 2000). In other words, attachment style may account for some of these findings.

Attachment style may also be a factor in the overall retention of missionaries. It is reasonable to speculate that the successful candidates had secure attachment styles, perceived less stress, and had strong pro-social skills with healthy interpersonal functioning. On the other hand, it is also possible that missionaries who are vulnerable to premature attrition have insecure attachment styles. For example, those who reported greater interpersonal difficulty may have insecure attachment schemas resulting in a higher perception of stress and maladaptive patterns of coping. While these potential hypotheses are offered, this research hoped to address
some of them by examining the three constructs together.

Studies by Chester (1983), Carter (1999), and Vanderpol (1994) all reported the reluctance to disclose vulnerabilities, which may also be a function of attachment style (Mikulincer & Nachshon, 1991). Yet none of the studies included a social desirability scale. Such a scale could help assess whether the missionaries are attempting to appear more spiritual or less affected by the stress than they actually were (Bagley, 2003; Eenigenburg & Bliss, 2010). Therefore, this study also included a scale to measure social desirability.

**Stress and Religious Coping**

The interrelationship of variables seen in the current literature related to this study is the association between stress and religious coping. However, this association is complex in that religious coping has the potential to reduce stress but also to exacerbate it (Exline et al., 2006; Koenig, 2009; Pargament et al., 1998b). In examining religious coping and its relationship to stress in light of a religious vocation, one must consider that reasons for going into the mission field can be varied (Navara & James, 2005). Both positive and negative views of God can drive passions to serve as well as determine patterns of religious coping. For example, in a study by Pargament et al. (1998a), positive and negative religious coping were measured in three distinct groups. Utilizing the 14-item Brief RCOPE, positive and negative patterns of religious coping were identified in a sample of persons coping with the Oklahoma City bombing ($n=296$), college students facing major life stressors ($n=540$), and elderly hospitalized patients with serious medical illnesses ($n=551$). Through exploratory and confirmatory factor analyses, the authors were able to identify positive and negative religious coping patterns. The generalizability across the three samples was noteworthy.
The participants in this study appeared to use various methods of religious coping in combination with each other. In other words, in efforts to deal with major life stressors, they applied different configurations of religious thought, feeling, behavior, and relationships. As was predicted, the participants in each of the three groups made considerably more use of positive than negative religious coping methods. Furthermore, the positive pattern appears to be reflective of a secure relationship with God, a sense of spirituality, and a trustworthy worldview. The negative religious coping methods, although used much less frequently, were expressions of a different religious orientation: one involving a tenuous relationship with God, spiritual struggle, and a threatening view of the world.

The authors pointed out that positive and negative religious coping patterns were associated with different outcomes, particularly in the realm of mental health. Generally speaking, as previously mentioned, the positive religious coping patterns were tied to benevolent outcomes, including fewer symptoms of psychological distress and reports of psychological and spiritual growth as a result of the stressor. Conversely, the negative religious coping patterns were associated with signs of emotional distress, such as depression, poorer quality of life, psychological symptoms, and callousness towards others. Therefore, these findings suggest that religion can be a source of distress as well as a source of solutions in coping (Pargament et al., 1998a).

One finding, however, was unexpected. There were several indicators of poorer physical health (i.e., number of medical diagnoses, functional status, cognitive status, PTSD) that were associated with higher levels of both positive and negative religious coping. A likely explanation of this finding is that poor physical health represents a stressor that mobilizes higher levels of positive and negative religious coping (Pargament et al., 1998a). This is consistent with
the theorized model in that religious coping can exude influence on the perception of stress. Based on the proposed theoretical model, negative religious coping is hypothesized to add to the perception of stress, but at the same time, Ano and Vasconcelles (2005) contest the idea that negative religious coping is always associated with increased stress and poorer health outcomes.

In an effort to quantitatively examine the relationship between religious coping and psychological adjustment to stress, the authors conducted a meta-analysis of 49 relevant studies with a total of 105 effect sizes and 13,512 participants. Based on the literature reviews, four hypotheses were investigated: (a) positive religious coping would be positively associated with positive psychological adjustment, (b) positive religious coping would be negatively associated with negative psychological adjustment, (c) negative religious coping would be negatively associated with positive psychological adjustment, and (d) negative religious coping would be positively associated with negative psychological adjustment. Hypotheses 1, 2 and 4 were supported (Ano & Vasconcelles, 2005). However, hypothesis three, negative religious coping would be negatively correlated with positive psychological adjustment, was not supported. The authors concluded that the research on religious coping, especially negative religious coping, and psychological adjustment to stress is more mixed than anticipated.

The meta-analytic results are relevant to this study. The people who felt punished by God or attributed their situation to the work of the devil, for example, did not necessarily report signs of negative religious coping such as lower self-esteem, less purpose in life, or lower spiritual growth. One explanation for this finding is that although negative religious coping may be harmful, it does not necessarily prevent people from experiencing positive outcomes. In fact, a few empirical studies have shown that negative religious coping can be associated with positive outcomes, such as stress-related growth and spiritual growth (Koenig, Pargament & Nielsen,
Therefore, the researchers concluded that some forms of negative religious coping may represent spiritual struggles that are actually pathways to growth. This is a notion that is consistent with various religious traditions that teach that struggle often precedes growth (Ano & Vasconcelles, 2005; Pargament, Murray-Swank, Magyar, & Ano, 2005). This is also congruent with the Irvine et al. (2006) finding previously reviewed that with almost universal exposure to traumatic stress, in spite of the negative impact, two thirds of the population reported positive sequelae to their stressful experiences. However, the overall results of these studies generally support the hypotheses that positive and negative forms of religious coping are related to positive and negative psychological adjustment to stress (Ano & Vasconcelles, 2005). This was an important finding for this study, as it supported the proposed bi-directional relationship between stress and religious coping.

A study conducted by McConnell, Pargament, Ellison, and Flannelly (2006) yielded similar results. They reported that religious coping is often associated with beneficial outcomes. However, they also concurred that stressful events may result in struggles with religious beliefs, religious institutions, or relationship with the divine. For example, in a study of 1,629 participants, spiritual struggles were positively associated with a wide range of symptoms of psychopathology, including symptoms of anxiety, phobic anxiety, and depression, and extend to other forms of psychopathology such as paranoid ideation, obsessive–compulsiveness, and somatization. The authors surmised that higher levels of psychopathology symptoms may trigger spiritual struggles, similar to a physical illness. Symptoms of depression, anxiety, and somatization may elicit anger towards God or feelings of being abandoned or punished by God (McConnell et al., 2006).
Another interpretation offered is that spiritual struggles may trigger more symptoms of psychopathology, largely because these struggles reflect tension and conflict at the most fundamental level of values, beliefs, and practices. They summarize that with either interpretation, those who experience spiritual struggles following stressful events may be at risk for developing psychopathology (McConnell et al., 2006).

**Summary of Stress and Religious Coping Literature**

Research has identified a complex relationship between stress and religious coping. According to Pargament (1997), the more difficult the stressor, the more likely it will evoke a religious response. Stress may lead to both positive and negative religious coping patterns. The positive pattern appears to be reflective of a secure relationship with God, a sense of spirituality, and a trustworthy worldview (Pargament et al., 1998a), which results in better psychological functioning (Ano & Vasconcelles, 2005; McConnell et al., 2006; Pargament et al., 1998a). The negative religious coping methods, although used less frequently, are associated with different religious orientation: one involving a tenuous relationship with God, spiritual struggle, and a threatening view of the world (Pargament et al., 1998a), resulting in less favorable psychological functioning (Ano & Vasconcelles, 2005; McConnell et al., 2006; Pargament et al., 1998a, 1998b). As shown in other studies that demonstrate growth through adversity, spiritual struggles and negative religious coping may also lead to growth (Ano & Vasconcelles, 2005). Early identification and intervention is recommended for those suffering a negative impact of religious coping, as negative religious coping may lead to increased risk of psychopathology (McConnell et al., 2006).

**Chapter Summary**
The relationship between each of two variables in the proposed study was established. These include attachment style and religious coping (Keister, 2010; Schottenbauer et al., 2006), attachment style and perceived stress (Kemp & Neimeyer, 1999; Kim, 2009) and stress and religious coping (e.g., Ano & Vasconcelles, 2005; Mc Connell et al., 2006: Pargament et al., 1998a, 2001). What appeared to be missing in the research literature is a study carefully examining the relationship of all three constructs together. A theoretical model (see Figure 1) was proposed that demonstrated a potential relationship between these variables. Missionaries serving in a cross-cultural context provided a rich population to test the model. The study therefore added to our understanding of the respective constructs, but also contributed to our understanding of the unique and under studied missionary population.
CHAPTER THREE: METHODS

Research Design

The purpose of this study was to examine the relationship between attachment style, stress perception, and religious coping in the evangelical missionary population. The study utilized a survey-based cross-sectional design conducted via the internet with a password-protected secure connection and web-based tool, Survey Monkey® (www.surveymonkey.com). The key variables explored were adult attachment style, perception of stress, and religious coping. For purposes of this study, religious coping was defined as the use of religious beliefs or practices to respond to a perceived stress, threat, or loss (Nelson, 2009). The study focused specifically on patterns of positive and negative religious coping methods. Positive patterns of religious coping methods were defined as seeking spiritual support, religious forgiveness, collaborative religious coping, spiritual connection, religious purification, benevolent religious reappraisal, and religious focus (Pargament et al., 1998a). Negative patterns of religious coping were defined by a different set of religious coping methods which include spiritual discontent, punishing God reappraisals, interpersonal religious discontent, demonic reappraisal, and reappraisal of God's powers (Pargament, et al., 1998a).

Adult attachment style was defined as the pattern of relationships that have developed as a result of the bond between infant and caregiver, and the ways in which the functioning of this relationship influences subsequent psychological development (Kirkpatrick, 1997). Experience of stress was defined as the degree to which situations in one’s life are appraised as stressful (Cohen et al., 1983).
Selection of Participants

Missionaries meeting the following criteria were included in the sampling: Evangelical missionaries currently serving cross-culturally with at least three months of service outside their home or passport country and who were at least 18 years of age at the time of the study. There were three main methods of selection. With Internal Review Board (IRB) approval, participants were recruited from evangelical missionary organizations. Several evangelical missionary organizations granted permission and agreed to send the link to their constituents. Secondly, snowball sampling was employed. The researcher forwarded the email link to known missionaries serving in cross-cultural settings and asked participants to complete the survey and forward it to others in their organizations.

Additionally, the request with the link to the survey was sent to several list serves including Brigada Today and Member Care Associates (Appendix D). In an effort to protect participants who may serve in restricted countries, the wording on all correspondence and surveys was changed from “missionary” to “cross-cultural worker.” The goal was to recruit at least 150 participants. Participants who received the survey through multiple sources were asked to complete it only one time. Participants were provided a time-sensitive link (30 days) to complete the anonymous survey through the Survey Monkey® website. Their responses remained anonymous and were only viewed by the principal researcher and statistics consultant.
Measurement Tools

Attachment Style

Attachment style was measured by the short version of the Experiences in Close Relationships (ECR-S) (Wei et al., 2007). Wei et al. (2007) developed a 12-item, short form of the Experiences in Close Relationship Scale (ECR) designed by Brennan, Clark and Shaver (1998). Over the course of six distinct studies, Wei and colleagues examined the factor structure, validity, reliability, and test-retest reliability (Wei et al., 2007). The ECR-S was also evaluated as a stand-alone instrument. Confirmatory factor analyses indicated that after removing the influence of response sets, that the two factors, labeled Anxiety and Avoidance, provided a good fit to the data. It was also found to be equivalent in validity to the short and the original versions of the ECR across studies. Finally, the results were comparable when the short form was embedded within the original version of the ECR and when it was administered as a stand-alone measure (Wei, et al., 2007). When administered to college students, the authors were successful in reducing the number of items from 36 (18 for Anxiety and 18 for Avoidance) to 12 (6 for Anxiety and 6 for Avoidance) without losing the sound psychometric properties contained in the original version of the ECR. Furthermore, the authors found the internal consistency of the 12-item ECR-S to be adequate with coefficient alphas of .77 to .86 for the Anxiety subscale and from .78 to .88 for the Avoidance subscale across all six studies. Furthermore, the test-retest reliabilities in Study 4 were adequate with $r = .80$ and .82 (Anxiety) and $r = .83$ and .86 (Avoidance) for the short and original version of the ECR, respectively, over a 1-month period. These results indicate that in their sample of undergraduate college students, the adult attachment anxiety and avoidance were relatively stable. Analyses indicated that the magnitude of the
construct validity was equivalent for both the short and original versions of the ECR (study 2) as well as equivalent for the short version of the ECR when it was administered as part of the 36-item version of the measure (study 2) and administered alone (study 5) (Wei, et al., 2007).

Furthermore, consistent with the attachment theory predictions and previous research, the construct validity of the ECR-S and the original ECR (study 3) was supported by the positive association of attachment anxiety with emotional reactivity and the positive association of attachment avoidance with emotional cutoff. The results also indicate that attachment anxiety and avoidance were significantly and positively related to depression, anxiety, interpersonal distress, or loneliness (study 3). In the ECR-S, respondents are asked to rate their responses in a Likert-style rating from a score of 1 “strongly disagree” to 7 “strongly agree.” Examples of anxious attachment are reflected in higher rating responses to questions such as, “My desire to be very close sometimes scares people away.” Higher-rated responses to questions such as, “I am nervous when partners get too close to me” reflect an avoidant style (Wei et al., 2007).

In summary, the results from the studies indicate that the 12-item ECR-S provides a reliable and valid measure of adult attachment. The psychometric properties (internal consistency, factor structure, test-retest reliability, and validity) of the short (12-item) version of the scale appeared to be comparable or equivalent to the original (36-item) version of the scale. Therefore, given the equivalent psychometric properties of the short and original versions of the ECR, researchers are encouraged to use the 12-item ECR-S in their future research on adult attachment (Wei et al., 2007).

**Religious Coping**

Religious coping theory posits that religious coping can be both adaptive and maladaptive and the efficacy of particular coping methods is determined by the interplay between personal,
situational, and social-cultural factors, as well as by the way in which health and well-being are conceptualized and measured (Pargament, 1997; Pargament et al., 1998a). To that end, religious coping was measured utilizing the Brief RCOPE (Pargament et al., 1998a). The Brief RCOPE is a 14-item measurement tool designed to identify patterns of positive and negative religious coping. The Brief RCOPE was designed to provide researchers and practitioners with an efficient measure of religious coping which retains not only the theoretical, but the functional foundation of the RCOPE (Pargament et al., 1998a). The development of the Brief RCOPE involved testing of several abbreviated revisions of the RCOPE on subjects who lived near the 1995 Oklahoma City bombing (Pargament et al., 1998a). Factor analysis of an abbreviated scale revealed a two-factor solution, which accounted for approximately 33% of the variance and clearly identified positive and negative coping items. A subset of these items was selected from both factors and used to recreate the positive and negative coping scales. The final Brief RCOPE is divided into two subscales, each consisting of seven items, which identify clusters of seven positive and seven negative religious coping methods. The positive religious coping subscale of the Brief RCOPE taps into a sense of connectedness with a transcendent force, in what an individual may hold as sacred, a secure relationship with a caring God, and a belief that life has a greater benevolent meaning. Conversely, the negative religious coping subscale is characterized by those coping methods that are reflective of tension, conflict, and struggle with the sacred as manifested by negative reappraisals of God’s powers, such as feeling abandoned or punished by God, demonic reappraisals, spiritual questioning and doubting, and interpersonal religious discontent.

The Brief RCOPE asks respondents to think of a recent stressor and rate the frequency with which they used each religious coping method to deal with the event. Responses in a
Likert-style rating form range from “0 to 3” with a 0 response reflecting “never” and a 3 response “always.” Responses are summed to create subscale scores, with higher scores indicating a more frequent use of the respective religious coping method (Pargament et al., 1998a).

The Brief RCOPE has received a great deal of research attention and is the most commonly used measure of religious coping. The body of known research as a whole suggests that the Brief RCOPE is a reliable and valid measure. Confirmatory factor analyses of the revised Brief RCOPE were conducted with a sample of hospitalized elderly patients and a sample of college students facing major life stressors. The analyses indicated that the two-factor solution provided a reasonable fit for the data. Both positive religious coping (PRC) scales and negative religious coping (NRC) scales have demonstrated good internal consistency across a range of samples, though these have been largely Christian and American. The majority of the studies have found that the PRC and NRC scales are not significantly associated with each other, though a few studies report significant positive correlations between the scales. Furthermore, the positive and negative religious coping subscales were differentially related to measures of physical health and mental health. These findings indicated that the use of positive religious coping methods was linked to fewer psychosomatic symptoms and greater spiritual growth after dealing with a stressor.

In contrast, negative religious coping was correlated with more signs of psychological distress and symptoms, poorer quality of life, and greater callousness towards other people. In addition, individuals reported considerably more frequent use of positive than negative religious coping methods (Pargament et al., 1998a, 2011). As for concurrent validity, cross-sectional studies have generally found that the PRC is significantly and positively correlated with well-
being constructs and is occasionally inversely related to indicators of poor functioning such as anxiety, depression, or pain. In contrast, the NRC is generally significantly and positively correlated with indicators of poor functioning, and is occasionally inversely related to constructs representing well-being.

**Stress Perception**

Perception of stress was measured by two instruments, the CHOPS Stress Inventory (O’Donnell et al., 2014) and the Perceived Stress Scale (Cohen et al., 1983). The CHOPS Stress Inventory was specifically designed for this study as a tool to capture the relative degree of stress in each of 10 areas known to be causes of stress in missionary populations. The assessment tool is based on the work of member care and humanitarian aid psychologists Kelly and Michèle O’Donnell, who created the CHOPS tool, an acronym for 10 key areas of stress found in cross-cultural workers. The ten areas are: Culture, Crises, Human, Historical, Occupational, Organizational, Physical, Psychological, Support, and Spiritual (O’Donnell, 1997; O’Donnell & O’Donnell, 2009, 2012). The CHOPS tool in its original design provides a qualitative measure of Stressors in the 10 key areas along with opportunities to list Strategies and Successes. A version of CHOPS assessment was updated in 2012 to include areas of stress identified in the A4 regions: America-Latina, Arabic-Turkic, Africa, and Asia (O’Donnell & O’Donnell, 2012). The CHOPS Stress Inventory for this study is adapted from the CHOPS 2012 version and provides a convenient checklist to identify the level of stress in each area along with possible experiences related to that area. For example, in the area of psychological stressors, loneliness, frustration, depression, grief, or loss are provided as possible experiences. Participants are asked to rate their level of stress over the past month in a Likert-style rating system from 1 “minimal” to 5 “extreme.” Permission to adapt the CHOPS 2012 for use in this research has been granted, along
with permission for the inclusion of additional material (O'Donnell & O'Donnell, personal communication, August 6, 2014). Unlike the Perceived Stress Scale (Cohen et al., 1983), the content of the CHOPS Stress Inventory is context-specific for missionary populations. The CHOPS Stress Inventory is a newly designed tool for missionary research but lacks psychometric analysis. Therefore, it was compared to the 10-item Perceived Stress Scale, which served as a psychometrically tested instrument.

**Perceived Stress Scale**

The Perceived Stress Scale (PSS) is a 10-item tool designed by Cohen, Kamarck, and Mermelstein (1983). Items were designed to tap into how unpredictable, uncontrollable, and overloaded respondents find their lives. The scale includes a number of direct queries about current levels of experienced stress. Designed for use in community samples with at least a junior high school education, the items are easy to understand, and the response alternatives are simple to grasp. Furthermore, the questions are of a general nature and hence are relatively free of content specific to any subpopulation group. The questions in the PSS ask about feelings and thoughts during the last month, and respondents are asked how often they felt a certain way in each situation (Cohen et al., 1983; Cohen & Williamson, 1988). For example, one question asks, “In the last month how often have you felt nervous or ‘stressed?’” Respondents can report 0 as “never” up to 4 “very often.” Cohen et al. (1983) describe the PSS as more closely related to a life impact score, which in some degree is based more on the appraisal of the event than on a more objective measure of the number of events occurring in the same timeframe. The PSS is also considered to be a better predictor of health and health-related outcomes than those measured by two life event scales (Cohen et al., 1983). Cohen et al. reported that the PSS highly correlated with depressive symptomatology, but was found to measure a different and
independently predictive construct. In a survey study conducted by Cohen and Janicki-Deverts (2012), psychological stress was assessed in 3 national surveys, the 1983 Harris Poll and the 2006 and 2009 eNation Surveys. Internal reliabilities for the Chronbach’s alphas for the PSS-10 were .78 in the Harris Poll sample, and .91 in both the 2006 and 2009 eNation samples.

**Social Desirability**

Social Desirability was measured utilizing the Marlowe-Crowne Social Desirability Scale Short Form C (Reynolds, 1982). Due to the awareness that self-report measures are susceptible to distortion and may invalidate data, Marlowe and Crowne developed the Marlowe Crowne Social Desirability Scale (MCSD; Crowne & Marlowe, 1960; Loo & Thorpe, 2000). The focus was to measure one form of response bias, the “social desirability” or the concept of “faking good.” (Loo & Thorpe, 2000). However, problems were found with the length of the form and some of its psychometric properties (Loo & Thorpe, 2000). Over the years, several short forms were designed to address both the psychometrics and the length. Reynolds (1982) designed three short forms of the MCSD scale with 11, 12, and 13 items respectively, resulting in forms A, B, and C. Reynolds reported that the three short forms, A, B, and C, and three others developed by Strahan and Gerbasi (1972) were investigated and comparisons made on the basis of responses from 608 undergraduate students on the original 33-item Marlowe-Crowne Social Desirability Scale (Crowne & Marlowe, 1960). The psychometric characteristics of internal consistency, reliability, and item factor loadings were compared with the Marlowe-Crowne total scale correlations and correlations between Marlowe-Crowne short forms and the Edwards Social Desirability Scales (Edwards, 1957). The results indicated that of the three short forms, the 13-item form C developed by Reynolds (1982) and the 20-item form named by Reynolds as MC-Form XX and developed by Strahan and Gerbasi (1972) were stronger psychometrically.
Therefore, the short form C can be recommended as a viable short form for use in the assessment of social desirability response tendencies (Reynolds, 1982). The form C is composed of 13 items from the original MCSD scale and specifically items 3, 6, 10, 12, 13, 15, 16, 19, 21, 26, 28, 30, and 33. Due to the terminology and an effort not to tire respondents, this shortened version of the Crowne-Marlowe Desirability Scale was used. Version C (Reynolds, 1982) was found to provide the closest language to missionary populations and was found to be reliable and valid.

**Research Procedures**

With approval from the dissertation chair, a professional statistics consultant was hired. Data collection was in accordance with research using human participants and met all the requirements of the Institutional Review Board (IRB). Informed consent (see Appendix C) was required outlining the purposes, risks, and benefits of participation, and participation was voluntary and responses remained anonymous. While the study appeared to have minimal risk for participants, participants were asked to stop the survey at any time they experienced an unmanageable level of emotional distress. If symptoms became unmanageable, participants were provided instructions on contacting their organization or the principal investigator (PI) for further assistance in finding resources for help.

Data was stored on a secure computer and accessible only to the researcher and the statistician. All personal identifying information was removed. At the end of the survey, the participants were offered an opportunity to be entered into a drawing for one of ten $25.00 dollar gift certificates to Amazon.com. Their email addresses were not linked to their responses. In addition, a request for participants to forward the link to others was provided.
Demographic information was collected as to gender, age, ethnicity, country of origin, country of service, marital status, if married to a national, and number and ages of children. Data was also collected as to education level, level of Bible training, time on field, previous cross-cultural experience, and length of that service, language fluency in adopted country, if member care services were available, if member care services had been utilized in past three months, and whether they felt supported by friends and/or family back home and from their organization. Finally, information type of ministry assignment, relative stability in country, length of time on field, length of time until end of current term, length of time until next furlough or home assignment, potential move within the next 30 days, denomination, and sending agency was collected.

Data Processing and Analyses

Permission for all assessment tools was obtained and each tool was transcribed into the Survey Monkey® survey building website. The statistical consultant reviewed each survey and appropriate loading scores were entered. Participants’ data was collected through the Survey Monkey®, downloaded to an Excel spreadsheet, and analyzed using Systat® statistical software.

In form of review, the research questions and hypotheses for this study were as follows:

1. Does attachment style predict the level of perceived stress in missionary populations?

   \( H_0 \): Perceived stress scores will not differ significantly between the Secure, Anxious, and Avoidant attachment styles.

   \( H_1 \): Individuals with a Secure attachment style will have significantly lower scores on the scales of perceived stress when compared to those with Anxious or Avoidant attachment styles.

Hypothesis 1, whether attachment style predicts the level of perceived stress, was addressed by using a one-way analysis of variance (ANOVA) using attachment style (Anxious,
Avoidant, Secure) as the grouping variable with total score on the Perceived Stress Scale as the outcome variable.

2. Does the experience of stress predict positive or negative religious coping strategies missionaries employ?

H₀: Perceived stress will not differ significantly between positive and negative religious coping styles.

H₁: Lower levels of perceived stress will be directly associated with positive religious coping in missionary populations.

Hypothesis 2, whether the experience of stress predicts positive or negative religious coping, used logistic regression analyses to determine whether total score on the Perceived Stress Scale predicts positive versus negative religious coping. The outcome variable was religious coping using positive religious as the outcome of interest and negative religious coping as the reference. The first logistic model used only the Perceived Stress Scale total score as the predictor variable while a second model, in accordance with literature review findings, included age and gender.

3. Does the perception of stress interact with attachment style on religious coping?

H₀: Experience of stress and attachment style will have no interaction on religious coping style.

H₁: Experience of stress and attachment style will have a significant interaction on religious coping in that low experience of stress and secure attachment style will be associated with positive religious coping.

Hypothesis 3, whether the perception of stress interacts with attachment style on religious coping, also used a logistic regression model with religious coping (positive versus negative) as the outcome while using a multiplicative interaction term for perceived stress and attachment
style (perceived stress x attachment style) as the predictor variable. The first model used just the interaction term as the predictor variable while a second model included age and gender in addition to the interaction term.

4. Does religious coping account for unique variance in perceived stress?

H₀: Religious coping will not account for a significant amount of variance in the perceived stress of missionaries.

Hₐ: Religious coping will account for a significant amount of variance in the perceived stress of missionaries.

Hypotheses 4, whether religious coping accounts for unique variance in perceived stress, was addressed by using a linear regression model with perceived stress as the outcome and religious coping style as the predictor variable. The eta-squared value from this model was used to determine the percent of variance for which religious coping style accounts.

5. In this sample of cross-cultural evangelical missionaries, will there be a greater pattern of positive or negative religious coping methods?

H₀: In this sample of cross-cultural evangelical missionaries, positive and negative religious coping will occur at an equal rate among the individuals.

Hₐ: In this sample of cross-cultural evangelical missionaries, there will be a greater use of the pattern of positive religious coping methods than the pattern of negative religious coping methods.

Hypothesis 5, whether missionaries in this sample use more positive or negative religious coping methods, proposed to use a 2-proportion z-test to determine whether the frequency of individuals who utilize positive or negative religious coping was significantly different in the
sample. The raw scores for the Brief RCOPE were also examined to determine the degree to which positive or negative religious coping was used in the sample.

**Exploratory Analyses**

In addition to the statistical analyses related to the research questions, exploratory psychometric analyses were conducted to determine the validity of the CHOPS Stress Inventory. First, correlation analysis was performed between the PSS (Cohen et al., 1983) and CHOPS Stress Inventory (O’Donnell et al., 2014) so that the CHOPS Stress Inventory was compared to a validated measure of perceived stress. Internal validity of the CHOPS Stress Inventory was assessed using Cronbach’s alpha.

Exploratory analyses of social desirability, as measured by the Short Form C of the Marlowe-Crowne Social Desirability Scale, was also conducted. The use of this scale helped identify individuals who may have provided responses that indicate a biased or overly positive self-presentation. Pearson correlation analyses was carried out to determine what, if any, correlations exist between social desirability and the other constructs of interest for this study. Comparisons between those with higher and lower social desirability scores were carried out to determine if individuals with higher social desirability scores had significantly different scores on the other measures in this study when compared to those with lower social desirability scores.

**Chapter Summary**

In a cross-sectional internet based survey, the relationship between adult attachment style, perception of stress, and patterns of religious coping was examined in a sample of cross-cultural, evangelical missionaries. Attachment style was measured using the ECR-S (Wei et al., 2007). Perception of stress was measured by the PSS (Cohen et al., 1983) and the CHOPS Stress
Inventory (O’Donnell et al., 2014). Patterns of positive and negative religious coping were measured by the Brief RCOPE (Pargament et al., 1998a). Additionally, social desirability was measured using the Short Form C of the Marlowe-Crowne Social Desirability Scale (Reynolds, 1982). Links to the survey were provided through list serves, mission agencies, as well as snowball sampling. Participants’ data was collected through the Survey Monkey® survey, downloaded to an Excel spreadsheet, and analyzed using Systat® statistical software.
CHAPTER FOUR: RESULTS

Review of the Study

The purpose of this study was to examine the relationship between attachment style, stress perception, and religious coping in a sample of cross-cultural evangelical missionaries. The study utilized a survey-based cross-sectional design conducted via the internet utilizing a password-protected secure connection and web-based tool Survey Monkey. The key variables that were explored were adult attachment style, perception of stress, and religious coping. Attachment style was measured using the 12-item Experience in Close Relationship Scale - Short Form (ECR-S; Wei et al., 2007). Stress perception was measured using the 10-item Perception of Stress Scale (PSS; Cohen et al., 1983). Stress perception was concurrently measured using the 17-item CHOPS Stress Inventory (O’Donnell et al., 2014), an adapted stress measurement tool specific for the population to be studied. Patterns of religious coping were measured using the 14-item Brief RCOPE (Pargament et al., 1998a). Social desirability factors were examined using the 13-item Short Form C of the Marlowe-Crowne Social Desirability Scale (Reynolds, 1982). Statistical analyses were conducted using Systat statistical software on the sample to test a proposed theoretical model relating the three variables and based on five research questions and hypotheses. The following results will include the descriptive demographics of the sample and the statistical analyses of the research questions and hypotheses along with relevant supplemental analyses.

Preliminary Analysis

Evangelical missionaries currently serving cross-culturally with at least three months of service outside their home or passport country and who were at least 18 years of age were invited
to participate via mission sending agencies, list serves, and snowball sample methods. The survey was available for 30 days between April 18, 2015 and May 18, 2015. A total of 361 participants accessed the survey. Of that total number, 94 were eliminated due to ineligibility of pre-established criteria or incomplete data sets resulting in a final \( n \) of 267.

In addition to the data of the measurement tools, demographic information was collected as to gender, age, ethnicity, country of origin, country of service, marital status, if married to a national, number and ages of children, and if couples were expecting a child. Data was also gathered on education level, level of Bible training, previous cross-cultural experience and length of that service, language fluency in adopted country, and relative stability in their country of service. Participants were asked if member care services were available, and if so, whether they were utilized in past three months. The participants were provided an opportunity to comment on reasons for member care services if they so desired. Moreover, participants were asked whether they felt supported by their organization and by friends and family back home. Additional questions were asked to as to the type of ministry assignment, length of time in current assignment, length of time until end of current term, next furlough or home assignment, and potential move within the next 30 days. Participants were asked to share their denomination and sending agency. Several open-ended questions were offered so that participants could provide specific stressors and comments. Participants were provided an opportunity to win one of ten gift cards to Amazon.com for their participation. To protect the security of evangelical missionaries serving in restricted countries, the term “cross-cultural worker” was used in the invitation to participate, informed consent and throughout the survey.
Demographic Characteristics

A summary of the demographic characteristics is shown in Table 1. The majority (70%) of the study sample were females. Individuals between the ages of 31 to 40 made up the largest age group of the sample (31%). Seventy percent of the sample reported being currently married. For the various attachment types, 67.06% were classified into the Secure attachment style, 4.31% were identified as having an Avoidant style, and 28.63% were classified into the Anxiety style.

In terms of ethnicity, the sample was very homogenous, with 93% reporting white non-Hispanic. The majority (82%) of the sample reported the USA as their home or passport country. Other home or passport countries reported are shown in Table 2 and include Australia, Brazil, Canada, China, Estonia, Finland, France, Germany, Great Britain, Malaysia, Netherlands, Norway, Philippines/Canada, South Africa, Switzerland, Switzerland/England, Turkey, United Kingdom, USA/Belize, USA/Brazil, and USA/Dominican Republic, and one participant declined to answer. The countries or geographical areas of missionary service span the globe and are shown in Table 3.
Table 1

*Demographic Characteristics*

<table>
<thead>
<tr>
<th>Category</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>30%</td>
</tr>
<tr>
<td>Female</td>
<td>70%</td>
</tr>
<tr>
<td>Age Group</td>
<td></td>
</tr>
<tr>
<td>18 to 21</td>
<td>1%</td>
</tr>
<tr>
<td>22 to 25</td>
<td>6%</td>
</tr>
<tr>
<td>26 to 30</td>
<td>12%</td>
</tr>
<tr>
<td>31 to 40</td>
<td>31%</td>
</tr>
<tr>
<td>41 to 50</td>
<td>17%</td>
</tr>
<tr>
<td>51 to 60</td>
<td>21%</td>
</tr>
<tr>
<td>61 to 65</td>
<td>8%</td>
</tr>
<tr>
<td>66 to 80</td>
<td>4%</td>
</tr>
<tr>
<td>Education</td>
<td></td>
</tr>
<tr>
<td>Less than High School</td>
<td>1%</td>
</tr>
<tr>
<td>High School or Equivalent</td>
<td>1%</td>
</tr>
<tr>
<td>Some College, No Degree</td>
<td>6%</td>
</tr>
<tr>
<td>Associate</td>
<td>2%</td>
</tr>
<tr>
<td>Bachelor</td>
<td>44%</td>
</tr>
<tr>
<td>Master</td>
<td>37%</td>
</tr>
<tr>
<td>Doctoral</td>
<td>9%</td>
</tr>
<tr>
<td>Ethnicity</td>
<td></td>
</tr>
<tr>
<td>Caucasian</td>
<td>93%</td>
</tr>
<tr>
<td>Hispanic</td>
<td>3%</td>
</tr>
<tr>
<td>Asian</td>
<td>3%</td>
</tr>
<tr>
<td>Multiracial</td>
<td>&lt;1%</td>
</tr>
<tr>
<td>Declined</td>
<td>&lt;1%</td>
</tr>
<tr>
<td>Marital Status</td>
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<tr>
<td>Married</td>
<td>70%</td>
</tr>
<tr>
<td>Divorced</td>
<td>1%</td>
</tr>
<tr>
<td>Remarried</td>
<td>1%</td>
</tr>
<tr>
<td>Separated</td>
<td>&lt;1%</td>
</tr>
<tr>
<td>Single, Never Married</td>
<td>27%</td>
</tr>
<tr>
<td>Widowed</td>
<td>&lt;1%</td>
</tr>
<tr>
<td>Attachment Style</td>
<td></td>
</tr>
<tr>
<td>Anxiety</td>
<td>29%</td>
</tr>
<tr>
<td>Secure</td>
<td>67%</td>
</tr>
<tr>
<td>Avoidant</td>
<td>4%</td>
</tr>
</tbody>
</table>
Table 2

Passport or Home Countries Represented in Sample

<table>
<thead>
<tr>
<th>Country</th>
<th>Number of Eligible Respondents</th>
<th>Number of Respondents Used in Analyses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia</td>
<td>6</td>
<td>5</td>
</tr>
<tr>
<td>Brazil</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Canada</td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td>Decline</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>China</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Estonia</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Finland</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>France</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Germany</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Great Britain</td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td>Malaysia</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Netherlands</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>New Zealand</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Norway</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Philippines/Canada</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>South Africa/United Kingdom</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Switzerland</td>
<td>5</td>
<td>4</td>
</tr>
<tr>
<td>Switzerland/United Kingdom</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Turkey</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>USA/Brazil</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>USA/Dominican Republic</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>USA</td>
<td>294</td>
<td>224</td>
</tr>
</tbody>
</table>

*Note: Some of the respondents did not complete the entire survey or did not meet eligibility requirements, and their results are not included in the statistical analysis. Information provided to show characteristics of entire sample that accessed the survey online.
Table 3

*Countries of Service or Geographical Area Represented in Sample*

<table>
<thead>
<tr>
<th>Country</th>
<th>Respondents</th>
<th>Country</th>
<th>Respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Afghanistan</td>
<td>2</td>
<td>Laos</td>
<td>7</td>
</tr>
<tr>
<td>Alaska</td>
<td>4</td>
<td>Lesotho</td>
<td>1</td>
</tr>
<tr>
<td>Albania</td>
<td>2</td>
<td>Mali</td>
<td>1</td>
</tr>
<tr>
<td>Argentina</td>
<td>1</td>
<td>Mexico</td>
<td>5</td>
</tr>
<tr>
<td>Australia</td>
<td>1</td>
<td>Middle East Levantine region</td>
<td>1</td>
</tr>
<tr>
<td>Austria</td>
<td>2</td>
<td>Mozambique</td>
<td>4</td>
</tr>
<tr>
<td>Azerbaijan</td>
<td>14</td>
<td>New Zealand</td>
<td>1</td>
</tr>
<tr>
<td>Belize, Central America</td>
<td>2</td>
<td>Nicaragua</td>
<td>6</td>
</tr>
<tr>
<td>Bolivia</td>
<td>1</td>
<td>Nigeria</td>
<td>3</td>
</tr>
<tr>
<td>Bosnia Herzegovina</td>
<td>1</td>
<td>North Africa</td>
<td>1</td>
</tr>
<tr>
<td>Brazil</td>
<td>3</td>
<td>North Africa</td>
<td>1</td>
</tr>
<tr>
<td>Bulgaria</td>
<td>5</td>
<td>Other (not identified)</td>
<td>1</td>
</tr>
<tr>
<td>Cambodia</td>
<td>9</td>
<td>Pakistan</td>
<td>1</td>
</tr>
<tr>
<td>Cameroon</td>
<td>7</td>
<td>Papua New Guinea</td>
<td>1</td>
</tr>
<tr>
<td>Canada</td>
<td>1</td>
<td>Peru</td>
<td>2</td>
</tr>
<tr>
<td>Canada and Alaska</td>
<td>1</td>
<td>Philippines</td>
<td>1</td>
</tr>
<tr>
<td>Caucasus</td>
<td>1</td>
<td>Romania</td>
<td>2</td>
</tr>
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<td>Central Asia</td>
<td>1</td>
<td>Russia</td>
<td>9</td>
</tr>
<tr>
<td>China</td>
<td>18</td>
<td>Senegal</td>
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<td>Closed country prefer not to</td>
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<td>Slovakia</td>
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<tr>
<td>identify</td>
<td></td>
<td></td>
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<tr>
<td>Colombia</td>
<td>1</td>
<td>South Africa</td>
<td>3</td>
</tr>
<tr>
<td>Costa Rica</td>
<td>10</td>
<td>South Asia (India)</td>
<td>1</td>
</tr>
<tr>
<td>Czech Republic</td>
<td>3</td>
<td>South Sudan</td>
<td>1</td>
</tr>
<tr>
<td>Country</td>
<td>Respondents</td>
<td>Country</td>
<td>Respondents</td>
</tr>
<tr>
<td>-------------------------------</td>
<td>-------------</td>
<td>---------------------------</td>
<td>-------------</td>
</tr>
<tr>
<td>Czech Republic</td>
<td>3</td>
<td>South Sudan</td>
<td>1</td>
</tr>
<tr>
<td>Dominican Republic</td>
<td>2</td>
<td>Southeast Asia</td>
<td>2</td>
</tr>
<tr>
<td>Ecuador</td>
<td>1</td>
<td>Spain</td>
<td>3</td>
</tr>
<tr>
<td>Egypt</td>
<td>1</td>
<td>Sweden</td>
<td>7</td>
</tr>
<tr>
<td>El Salvador</td>
<td>2</td>
<td>Switzerland</td>
<td>2</td>
</tr>
<tr>
<td>England</td>
<td>1</td>
<td>Taiwan</td>
<td>1</td>
</tr>
<tr>
<td>Far East</td>
<td>1</td>
<td>Tajikistan</td>
<td>1</td>
</tr>
<tr>
<td>France</td>
<td>5</td>
<td>Tanzania</td>
<td>4</td>
</tr>
<tr>
<td>Georgia and Azerbaijan</td>
<td>1</td>
<td>Thailand</td>
<td>24</td>
</tr>
<tr>
<td>Germany</td>
<td>1</td>
<td>Thailand (90%), Republic</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>of Niger (10%)</td>
<td></td>
</tr>
<tr>
<td>Guatemala</td>
<td>4</td>
<td>Thailand, China</td>
<td>1</td>
</tr>
<tr>
<td>Haiti</td>
<td>1</td>
<td>Thailand, Indonesia</td>
<td>1</td>
</tr>
<tr>
<td>Honduras</td>
<td>3</td>
<td>Transition Turkey/Spain</td>
<td>1</td>
</tr>
<tr>
<td>Hungary</td>
<td>2</td>
<td>Tunisia</td>
<td>3</td>
</tr>
<tr>
<td>India</td>
<td>7</td>
<td>Turkey</td>
<td>3</td>
</tr>
<tr>
<td>Indonesia</td>
<td>4</td>
<td>United Arabic Emerites</td>
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<td>Iraq</td>
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<td>Uganda</td>
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<tr>
<td>Italy</td>
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<td>United Kingdom</td>
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<td>Japan</td>
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<td>Ukraine</td>
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<tr>
<td>Jordan</td>
<td>2</td>
<td>Uruguay</td>
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<td>11</td>
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<td>2</td>
</tr>
<tr>
<td>Kosovo</td>
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<td>Zambia</td>
<td>1</td>
</tr>
<tr>
<td>Kyrgyzstan</td>
<td>3</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Note: Some of the respondents did not complete the entire survey or did not meet eligibility criteria and their results are not included in the statistical analysis. Information provided to show characteristics of entire sample that accessed the survey online.*
Validity of Survey Responses

In order to determine the extent to which respondents’ answers may have been driven by social desirability, the Marlowe-Crown Short Form C (Reynolds, 1982) scale was embedded into the survey questions. The Marlowe-Crown Short Form C scale showed weak correlations with the PSS ($r = 0.25, p<0.001$) and the CHOPS ($r = 0.21, p = 0.003$), but showed no correlation with the religious coping score ($r = 0.02, p = 0.99$). No significant differences between the Secure, Anxious, and Avoidant attachment styles were noted on the Marlowe-Crown Short Form C ($F = 1.55, df (2,243), p = 0.22$). These results suggest that responses were not influenced by social desirability bias.

Research Questions and Hypotheses

The research questions and hypotheses for this study were as follows:

1. Does attachment style predict the level of perceived stress in missionary populations?

   $H_0$: Perceived stress scores will not differ significantly between the Secure, Anxious, and Avoidant attachment styles.

   $H_1$: Individuals with a Secure attachment style will have significantly lower scores on the scales of perceived stress when compared to those with Anxious or Avoidant attachment styles.

   Hypothesis one was not supported in that a one-way analysis of variance (ANOVA) using Attachment Style as the independent variable and PSS total score as the dependent variable found no significant difference between the Anxious, Avoidant, and Secure attachment styles $F = 1.75, df (2,252), p = 0.18$ (Figure 2). Analysis of covariance (ANCOVA) also found no significance for effect for Attachment Style on PSS total score after adjusting for gender, age, education, and time in field $F = 1.15, df (2,186), p = 0.32$. However, it was noted that both age
and gender demonstrated significant effects on PSS total score in the ANCOVA (Age: $F = 2.46$, df (7, 186), $p = 0.02$; Gender: $F = 6.05$, df (1, 186), $p = 0.02$). The effects of these covariates was explored further by assessing the interaction effect these variables had with Attachment Style on PSS total score. Neither gender nor age demonstrated a significant interaction with Attachment Style on PSS total score (Age X Attachment Style: $F = 0.90$, df (10, 174), $p = 0.54$; Gender X Attachment Style: $F = 0.07$, df (2, 174), $p = 0.07$). These results indicate that age and gender differences on PSS scores were independent of Attachment style.
Given the lack of significant interaction for gender and age with Attachment Style, group differences on PSS total score for age and gender were assessed independently. For gender, females ($M = 17.88, SD = 5.30$) had significantly higher PSS total scores than males ($M = 15.77, SD = 5.25$) $t = 2.98, df (265), p = 0.003, d = 0.59$ (Figure 2a). There was no significant difference between married females and single females on perceived stress scores ($p = 0.89$). For age, the 26 to 30 group had significantly higher PSS total scores than the 51 to 60 ($p = 0.008$), 61 to 65 ($p = 0.04$), and 66 to 80 ($p = 0.02$) age groups (Figure 2b). Although there was no significant interaction of attachment style on PSS scores, age and gender did show significant

\[ \text{Figure 2. Attachment Style Group Differences on PSS Total Score.} \]

Error bars are standard deviation.
group differences on PSS scores. Significance of these findings will be discussed in Chapter Five.
*Figure 2a.* Gender Difference for PSS Total Score.

Error bars are standard deviation.
Research Question and Hypothesis Two

2. Does the experience of stress predict positive or negative religious coping strategies missionaries employ?

H₀: Perceived stress will not differ significantly between positive and negative religious coping styles.

H₁: Lower levels of perceived stress will be directly associated with positive religious coping in missionary populations.

To assess the association between religious coping and PSS total score, a linear regression model was used with PSS total score as the independent variable and religious coping score as the dependent variable. However, in this sample of cross-cultural evangelical missionaries, 99.3% reported utilizing positive patterns of religious coping (n=265). Since there were so few individuals who could be classified into the group of negative religious coping, a
religious coping score was calculated based on the sum of scores for the positive and negative coping questions from the Brief RCOPE. This score was derived by subtracting the summed score of the negative questions from that of the positive questions, so that the degree of positive religious coping would then be used as the dependent variable.

In an unadjusted regression model, PSS total score was significantly associated with the religious coping score ($\beta = -0.20$, SE = 0.05, $p < 0.001$). In the adjusted model, which included gender, age, and education, PSS total score still showed a significant association with the religious coping score, $F = 14.64$, df (1, 210), $p < 0.001$. These results suggest there is a significant association between perception of stress and religious coping.

Correlation analysis of PSS total score with the religious coping score found a small but significant correlation ($r = -0.24$, $p < 0.001$). A scatterplot of this association is shown in Figure 3. Gender differences in this association are shown in Figure 4. The plot in Figure 4 shows the trendline for the entire sample while Figure 5 shows trendlines for males and females so that a visual representation of this group difference is given (it was significant with females being higher in the analysis on the previous page).
Figure 3. Scatterplot of PSS Total Score with Religious Coping Score.

$r = -0.24$, $p<0.001$
Figure 4. Gender Differences in the Linear Association of PSS Total Score and Religious Coping Score.

Red line denotes best-fit line for the entire study sample.

Research Question and Hypothesis Three

3. Does the perception of stress interact with attachment style on religious coping?

H_0: Experience of stress and attachment style will have no interaction on religious coping style.

H_a: Experience of stress and attachment style will have a significant interaction on religious coping in that low experience of stress and secure attachment style will be associated with positive religious coping.

For this analysis, a linear regression model was used with the religious coping score as the dependent variable and the Attachment Style x PSS interaction as the independent variable. An
adjusted model, which included age, gender, and education was also carried out. The hypothesis was not supported in that the interaction between Attachment Style and PSS total score was not significantly associated with the religious coping score, $F = 1.67, df (2,248), p = 0.19$. This association remained non-significant after adjusting for age, gender, and education, $F = 1.08, df (2,197), p = 0.34$. The interaction between perception of stress and attachment style did not have a significant impact on religious coping. Therefore, the hypothesis for research question three was not supported. Figure 5 denotes the interaction of Attachment Style and Perceived Stress on Religious Coping.
Figure 5. Interaction of Attachment Style and Perceived Stress on Religious Coping.

Research Question and Hypothesis Four

4. Does religious coping account for unique variance in perceived stress?

$H_0$: Religious coping will not account for a significant amount of variance in the perceived stress of missionaries.

$H_a$: Religious coping will account for a significant amount of variance in the perceived stress of missionaries.
Hypothesis four was not supported in that based on the adjusted linear regression model used in hypothesis two, religious coping accounted for approximately 5% of the variance in PSS total score as measured by eta-squared. Although a significant association was found in hypothesis two, it is likely that religious coping (or the mechanisms underlying this construct) has a relatively small impact on perceived stress. In other words, religious coping is a mechanism by which stress is managed.

**Research Question and Hypothesis Five**

5. In this sample of cross-cultural evangelical missionaries, will there be a greater pattern of positive or negative religious coping methods?

H₀: In this sample of cross-cultural evangelical missionaries, positive and negative religious coping will occur at an equal rate among the individuals.

Hₐ: In this sample of cross-cultural evangelical missionaries, there will be a greater use of the pattern of positive religious coping methods than the pattern of negative religious coping methods.

The hypothesis was fully supported in that only two individuals yielded scores that indicated a tendency toward negative religious coping. It was concluded that positive religious coping is far more prevalent in this sample.

**Exploratory Analysis of the CHOPS Stress Inventory**

The analyses of the CHOPS Stress Inventory were aimed at assessing its psychometric validity. Internal consistency was good (Cronbach’s α = 0.82), and correlation with PSS total score was moderate (r = 0.62, p<0.001) (Figure 5); however, a weak correlation was found between the CHOPS and the religious coping score (r = -0.15, p = 0.04). One-way ANOVA was used to determine if CHOPS scores differed by Attachment Style and no significant difference
was found, \( F = 1.53, \text{ df (2,254), } p = 0.22 \). Figure 6 denotes a scatterplot of CHOPS stress inventory with PSS total score. Table 4 shows the frequency of stress level responses for the CHOPS categories by attachment style (Anxiety and Avoidant) and also for the entire sample.
The categories of the CHOPS Stress Inventory were assessed as to which of the ten categories representing various stressors (Cross-Cultural, Crises, Historical, Human, Occupational, Organizational, Physical, Psychological, Support, and Spiritual) were found to be most stressful for this sample. The participants were also asked to rate their overall level of stress over the past month in a summary question. In each of the categories, the participants were asked to rate the level over the past month as minimal, low, moderate, high, or extremely high. The rounded-off percentages of the moderate, high, and extremely high ratings of stress indicate the top categories for this sample were: Occupational (72%), Human/Interpersonal
(65%), Psychological/ Emotional (57%), Cross Cultural (52%), and Spiritual (46%). Sixty-eight percent (68%) of the sample rated the overall stress over the past month as moderate, high, and extremely high. A comments section was included and, surprisingly, 294 of the respondents provided specific stressors. Some of the stressors listed include weather-related stressors such as oppressive heat and tornadoes. Other stressors reported included daily hassles, government red tape, visa issues, addictions, friends dying while on the field, deaths in close family members or friends back home, missing events back home, serious health issues, work issues, re-entry issues, financial problems, marriage problems, problems child rearing or schooling, aging parents, corruption, loneliness, depression, other mental health issues, power outages, dangerous traffic, safety in country, sexual assault, assaults, interpersonal and team conflicts, conflicts with leaders, spiritual warfare, armed conflict, political or military conflict, terrorism and terrorist attacks.

The ten categories of the CHOPS Stress Inventory were further assessed and results for the Anxiety and Avoidant attachment styles were isolated and compared. Table 4 provides the overall frequency of stress level responses on the CHOPS Stress Inventory. Table 5 shows the overall percentage scores of the CHOPS Stress Inventory, combining the moderate, high, and extremely high rating for each of the ten categories of stress. The table compares the Anxiety and Avoidant types along with the overall sample scores for each category. The most significant between-group differences between the Anxiety group and the Avoidant group were in the categories of Human/Interpersonal (Anxiety 71.24%, Avoidant 40.0%), Organizational (Anxiety 39.73%, Avoidant 63.63%), Psychological (Anxiety 62.5%, Avoidant 54.54%), and Support (Anxiety 38.89%, Avoidant 45.45%) (Table 6).

The sample at large reported an overall stress rating of 64.54% for Human/Interpersonal stress. The Human/Interpersonal stress for the Anxiety group was higher at 71.24%, and for the
Avoidant group lower at 40.0%. For the category of Organizational stress, the sample at large reported an overall stress rating at 35.94%. The Anxiety group was only slightly higher at 39.73%, but the Avoidant group score was significantly higher at 63.63%. For the category of Psychological/Emotional stress, the overall percentage was 56.83%. The Anxiety group percentage was higher at 62.5%, and the Avoidant group lower at 54.54%. For Support/Financial stress, the percentage of the overall sample was 35.97%. The Anxiety group percentage was only slightly higher at 38.89%, but the Avoidant group rated this category even higher at 45.45%. For Spiritual stress, the overall sample percentage was 45.52%, but for the Anxiety group the percentage was higher at 52.06%, and for the Avoidant group even higher at 54.54%. Another notable difference was that both the Anxiety and Avoidant group rated the Occupational stress higher than did the overall sample. The overall sample rated Occupational stress at 72.24%, and the Anxiety group rated this stress at 77.78%, and Avoidant even higher at 81.82%.

Although hypothesis one was not supported, an analysis of categorical data from the CHOPS Stress Inventory does show some differences in perception of stress in the Anxiety and Avoidant styles in six of the ten categories. The significance of these findings will be discussed in Chapter Five.
### Table 4

*Frequency of Stress Level Responses for CHOPS Categories*

<table>
<thead>
<tr>
<th>Anxiety</th>
<th>Cultural</th>
<th>Crises</th>
<th>Historical</th>
<th>Human</th>
<th>Occupational</th>
<th>Organizational</th>
<th>Physical</th>
<th>Psychological</th>
<th>Support</th>
<th>Spiritual</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimal</td>
<td>23.29</td>
<td>46.48</td>
<td>28.77</td>
<td>8.22</td>
<td>5.56</td>
<td>34.25</td>
<td>32.88</td>
<td>18.06</td>
<td>31.94</td>
<td>8.22</td>
</tr>
<tr>
<td>Low</td>
<td>21.92</td>
<td>33.80</td>
<td>28.77</td>
<td>20.55</td>
<td>16.67</td>
<td>26.03</td>
<td>27.40</td>
<td>19.44</td>
<td>29.17</td>
<td>39.73</td>
</tr>
<tr>
<td>Moderate</td>
<td>35.62</td>
<td>12.68</td>
<td>27.40</td>
<td>42.47</td>
<td>43.06</td>
<td>28.77</td>
<td>24.66</td>
<td>37.50</td>
<td>26.39</td>
<td>39.73</td>
</tr>
<tr>
<td>High</td>
<td>16.44</td>
<td>5.63</td>
<td>13.70</td>
<td>24.66</td>
<td>27.78</td>
<td>9.59</td>
<td>12.33</td>
<td>22.22</td>
<td>9.72</td>
<td>10.96</td>
</tr>
<tr>
<td>Extreme</td>
<td>2.74</td>
<td>1.41</td>
<td>1.37</td>
<td>4.11</td>
<td>6.94</td>
<td>1.37</td>
<td>2.74</td>
<td>2.78</td>
<td>2.78</td>
<td>1.37</td>
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</table>

<table>
<thead>
<tr>
<th>Avoidant</th>
<th>Cultural</th>
<th>Crises</th>
<th>Historical</th>
<th>Human</th>
<th>Occupational</th>
<th>Organizational</th>
<th>Physical</th>
<th>Psychological</th>
<th>Support</th>
<th>Spiritual</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimal</td>
<td>9.09</td>
<td>63.64</td>
<td>9.09</td>
<td>20</td>
<td>0</td>
<td>18.18</td>
<td>36.36</td>
<td>27.27</td>
<td>36.36</td>
<td>27.27</td>
</tr>
<tr>
<td>Low</td>
<td>36.36</td>
<td>18.18</td>
<td>54.55</td>
<td>40</td>
<td>18.18</td>
<td>18.18</td>
<td>27.27</td>
<td>36.36</td>
<td>18.18</td>
<td>45.46</td>
</tr>
<tr>
<td>Moderate</td>
<td>45.46</td>
<td>18.18</td>
<td>9.09</td>
<td>20</td>
<td>45.46</td>
<td>27.27</td>
<td>36.36</td>
<td>27.27</td>
<td>36.36</td>
<td>27.27</td>
</tr>
<tr>
<td>High</td>
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<td>0</td>
<td>18.18</td>
<td>20</td>
<td>36.36</td>
<td>27.27</td>
<td>0</td>
<td>27.27</td>
<td>9.09</td>
<td>27.27</td>
</tr>
<tr>
<td>Extreme</td>
<td>9.09</td>
<td>0</td>
<td>9.09</td>
<td>0</td>
<td>0</td>
<td>9.09</td>
<td>0</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Overall Sample Percentages</th>
<th>Cultural</th>
<th>Crises</th>
<th>Historical</th>
<th>Human</th>
<th>Occupational</th>
<th>Organizational</th>
<th>Physical</th>
<th>Psychological</th>
<th>Support</th>
<th>Spiritual</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimal</td>
<td>21.20</td>
<td>44.80</td>
<td>26.24</td>
<td>8.87</td>
<td>6.76</td>
<td>32.03</td>
<td>30.36</td>
<td>16.55</td>
<td>30.94</td>
<td>11.83</td>
</tr>
<tr>
<td>Low</td>
<td>27.21</td>
<td>34.41</td>
<td>35.11</td>
<td>26.60</td>
<td>21.00</td>
<td>32.03</td>
<td>32.86</td>
<td>26.62</td>
<td>33.09</td>
<td>42.65</td>
</tr>
<tr>
<td>Moderate</td>
<td>32.86</td>
<td>15.41</td>
<td>6.95</td>
<td>37.59</td>
<td>37.72</td>
<td>25.27</td>
<td>25.71</td>
<td>33.45</td>
<td>24.82</td>
<td>34.77</td>
</tr>
<tr>
<td>Extreme</td>
<td>2.47</td>
<td>1.08</td>
<td>2.13</td>
<td>3.55</td>
<td>4.63</td>
<td>1.42</td>
<td>1.07</td>
<td>3.24</td>
<td>1.44</td>
<td>0.36</td>
</tr>
</tbody>
</table>

*Note.* Data reflects scores in percentages.
Table 5
*Between Group Percentages of Stress Level CHOPS Stress Inventory (Stress rated at moderate, high and extremely high)*

<table>
<thead>
<tr>
<th></th>
<th>Cultural</th>
<th>Crises</th>
<th>Historical</th>
<th>Human</th>
<th>Occupational</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anxiety</td>
<td>54.8%</td>
<td>19.72%</td>
<td>42.47%</td>
<td>71.24%</td>
<td>77.78%</td>
</tr>
<tr>
<td>Avoidant</td>
<td>54.55%</td>
<td>18.18%</td>
<td>36.36%</td>
<td>40.0%</td>
<td>81.82%</td>
</tr>
<tr>
<td>Overall Sample</td>
<td>51.58%</td>
<td>20.79%</td>
<td>38.65%</td>
<td>64.54%</td>
<td>72.24%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Organizational</th>
<th>Physical</th>
<th>Psychological</th>
<th>Support</th>
<th>Spiritual</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anxiety</td>
<td>39.73%</td>
<td>39.73%</td>
<td>62.50%</td>
<td>38.89%</td>
<td>52.06%</td>
</tr>
<tr>
<td>Avoidant</td>
<td>63.63%</td>
<td>36.36%</td>
<td>54.54%</td>
<td>45.45%</td>
<td>54.54%</td>
</tr>
<tr>
<td>Overall Sample</td>
<td>35.94%</td>
<td>36.78%</td>
<td>56.83%</td>
<td>35.97%</td>
<td>45.52%</td>
</tr>
</tbody>
</table>
Table 6

*Excerpt from Table 4 Frequency of Stress Level Responses for CHOPS Stress Inventory*

<table>
<thead>
<tr>
<th></th>
<th>Human</th>
<th>Occupational</th>
<th>Organizational</th>
<th>Psychological</th>
<th>Support</th>
<th>Spiritual</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anxiety</td>
<td>71.24%</td>
<td>77.78%</td>
<td>39.73%</td>
<td>62.50%</td>
<td>38.89%</td>
<td>52.06%</td>
</tr>
<tr>
<td>Avoidance</td>
<td>40.0%</td>
<td>81.82%</td>
<td>63.63%</td>
<td>54.54%</td>
<td>45.45%</td>
<td>54.54%</td>
</tr>
<tr>
<td>Overall Sample</td>
<td>64.54%</td>
<td>72.24%</td>
<td>35.94%</td>
<td>56.83%</td>
<td>35.97%</td>
<td>45.52%</td>
</tr>
</tbody>
</table>

**Summary**

In a sample of 267 cross-cultural evangelical Christian missionaries, statistical analyses of five research questions and hypotheses were conducted to explore the relationship between adult attachment style, perception of stress, and religious coping. Research question one asked whether attachment style predicts the level of perceived stress in missionary populations. The data analysis indicated that there was no significant relationship between attachment style and perception of stress. Although there was no significant interaction of attachment style on PSS scores, age and gender did show significant group differences on PSS scores. Females had significantly higher PSS total scores than male. For age, the 26 to 30 group had significantly higher PSS total scores than the 51 to 60 age groups and the 61 to 80 age groups. However, neither gender nor age demonstrated a significant interaction with Attachment Style on PSS total score. These results suggest that age and gender differences on PSS scores were independent of Attachment style.
Research question two asked whether the experience of stress predicts whether missionaries will employ positive or negative religious coping strategies. The results showed that in both an adjusted and unadjusted regression model, PSS total score was significantly associated with the religious coping score. These results suggest there is a significant association between perception of stress and religious coping. Furthermore, a correlation analysis of PSS total score with the religious coping score found a small but significant correlation.

Research question three asked whether the perception of stress interacts with attachment style on religious coping. The hypothesis was not supported in that the interaction between perception of stress and attachment style did not have a significant impact on religious coping. This association remained non-significant after adjusting for age, gender, and education.

Research question four asked if religious coping would account for unique variance in perceived stress. Based on the adjusted linear regression model used in hypothesis two, religious coping accounted for approximately 5% of the variance in PSS total score. Although a significant association was found in hypothesis two, it is likely that religious coping (or the mechanisms underlying this construct) has a relatively small impact on perceived stress.

Lastly, research question five asked which type of religious coping patterns this sample of evangelical cross-cultural missionaries would utilize. As was hypothesized, 99.3% reported utilizing patterns of positive religious coping. The results of the social desirability scale suggest there was not a social desirability bias reflected in the overall responses.

Exploratory data show good psychometric qualities of a newly adapted quantitative stress tool for cross-cultural workers (CHOPS Stress Inventory) as compared to a known instrument (Perceived Stress Scale). Descriptive statistics show that 68% of the sample reported an overall stress level of moderate, high, or extremely high. The top five categories of stress reported as
moderate, high, or extremely high were: Occupational (72%), Human/Interpersonal (65%), Psychological/Emotional (57%), Cross-Cultural (52%), and Spiritual (46%).

Moreover, scores on the CHOPS Stress Inventory showed differences between the Anxious attachment style and the Avoidant attachment styles in perception of stress for several categories. Overall percentages of group differences were found in the categories of Human/Interpersonal, Organizational, Psychological, Support, and Spiritual. Other findings suggest both the anxious and avoidant groups reported higher amounts of Occupational stress than did the overall sample. Of the 361 participants who accessed the survey, 294 provided open-ended responses on specific stressors. Significance of the overall findings and how they relate to the proposed theoretical model (Figure 1) will be reviewed in Chapter Five.
CHAPTER FIVE: DISCUSSION, IMPLICATIONS, LIMITATIONS AND CONCLUSIONS

Overview of the Study

The purpose of this study was to examine the relationship between adult attachment style, stress perception, and religious coping in a cross-cultural evangelical missionary population. A theoretical model highlighting a proposed relationship of the variables was tested in five research questions and hypotheses.

The study utilized a cross-sectional design in an internet-based survey. The study consisted of a demographic questionnaire, and utilized 5 measurement tools. The measurements used were the Experiences in Close Relationship-Short Form (ECR-S; Wei et al., 2007), the Perceived Stress Scale (PSS; Cohen et al., 1983), the Brief RCOPE (Pargament et al., 1998a), Short Form C Marlowe-Crown Social Desirability Scale (Reynolds, 1982), and the newly adapted CHOPS Stress Inventory (O’Donnell et al., 2014). The CHOPS Stress Inventory is specific for the sample population and was designed for this study.

Participants were invited via mission agencies, list serves, and snowball sampling. Eligibility to participate included being an evangelical missionary serving in a cross-cultural setting for at least 3 months at the time of the survey and at least 18 years of age. A total of 361 participants accessed the survey, which was available for 30 days. Of the total accessing the survey, 94 were eliminated due to incomplete data sets or ineligibility of pre-established criteria, leaving a total sum of 267. The following is a discussion of the findings along with implications, limitations, recommendations for future research, and conclusions.
Research Questions and Hypotheses

The following were the research questions and hypotheses for this study:

Research Question One and Hypotheses

1. Does attachment style predict the level of perceived stress in missionary populations?

H₀: Perceived stress scores will not differ significantly between the Secure, Anxious, and Avoidant attachment styles.

H₁: Individuals with a Secure attachment style will have significantly lower scores on the scales of perceived stress when compared to those with Anxious or Avoidant attachment styles.

The results of the statistical analysis suggest there was no difference among the three attachment styles (Secure, Anxious, Avoidant) as to how individuals with these attachment styles perceive stress. Therefore, the alternative hypothesis was not supported.

Discussion of Results

The results of hypothesis one, in that attachment style failed to predict the level of perceived stress, are inconsistent with other studies. Shaver and Mikulincer (2007) reported that individuals that are high in attachment anxiety generally report greater levels of perceived stress, are prone to rumination, and are hyper-reactive to threats. Furthermore, those high in avoidant attachment are more prone to repressing and utilizing defensive regulation mechanisms to control emotionally stressful situations (Shaver & Mikulincer, 2007). Furthermore, numerous studies have linked the perception of stress to attachment style (Besser et al.; Fraley et al., 2006; Kemp & Neimeyer, 1999; Kim, 2009, 2012; Koopman et al., 2000; Krenke-Seiffge, 2006; Mikulincer & Florian, 1998). That being said, as was outlined in the literature review, other
studies have shown discrepancies in results that are not always consistent with the theoretical conceptualization of attachment style.

Several possible explanations exist for the results of this study. For example, there is an ongoing discussion on how attachment style is both understood and measured. In other words, how attachment is measured matters. Collins and Feeney (2000) described a debate in the literature on whether self-report or interview methods are most appropriate for assessing adult attachment styles (Bartholomew & Shaver, 1998; Kemp & Neimeyer, 1999). On one hand, Bartholomew and Shaver (1998) suggested that the Adult Attachment Interview (AAI) and the Experience in Close Relationship (ECR) self-report may measure different domains of attachment, which is tantamount to measuring different sides of the same coin. On the other hand, Roisman et al. (2007) pointed out that the different measures and or approaches to measures are designed to tap different aspects of security that may not have similar correlates. For example, the self-report measures of attachment are based on the assumption that, although the psychological processes underlying individual differences may operate in ways that are not always accessible to the conscious mind, these processes nonetheless have implications for the conscious beliefs and attributions that people make about themselves (Roisman et al., 2007).

What is actually being measured in attachment studies matters as well. For example, attachment style may be considered a more fluid or fluctuating state that only manifests as stress activates the system (Kidd et al., 2011). In fact, several studies have measured the physiological state of stress by studying the markers of stress such as the level of cortisol (Kidd et al., 2011) or measured Heart Rate Variations (HRV; Maunder, Lancee, Nolan, Hunter, & Tannenbaum, 2006). There is sufficient data to suggest that physiological responses are influenced by the activated attachment system (Powers, Pietromonarco, Gunlicks, & Sayer, 2006).
Attachment style may also be considered a trait and have a roughly stable presentation that can be measured as the two orthogonal dimensions of anxiety or avoidance. Those with high levels on either dimension, anxiety or avoidant, or both in combination, are assumed to have an insecure adult attachment orientation (Mallinckrodt & Wei, 2005). In other words, how one approaches the understanding and measurement of attachment is important. Overall attachment schemas are complex and there are a variety of neural, physiological, and psychological systems underlying attachment behaviors (Cassidy & Shaver, 2008).

This study used the trait or dimension approach and measured attachment style using a self-report measure known to have statistical integrity (ECR-S; Wei et al., 2007). However, measuring the attachment style at one point in time has some limitations. In fact, Mickelson, Kessler and Shaver (1997) reported that in the ever-increasing body of knowledge about attachment theory and the numerous ways it influences human functioning, it is difficult to determine from cross-sectional designs (like this study) whether attachment styles are causes, consequences, or merely concomitants of the correlated variables examined (Mickelson et al., 1997). In other words, how attachment is understood and measured matters in the interpretation of these results.

This study examined the “dimension” of attachment and its relation to the perception of stress, rather than examining stress as a physiological response or state (cortisol, heart rate variation). Using this approach, in order to detect statistical differences in attachment styles, we would need a sufficient amount of stress to activate the underlying attachment system to see how the various styles perceive stress. Without sufficient stress, critical distinctions among insecure groups may not be revealed (Ainsworth, et al., 1978; Vaughn & Waters, 1990). Farnfield (2014) added that for any assessment to elicit attachment behavior, it is necessary to place the subject
under moderate stress. Too much and anyone may become disorganized or confused. Too little and the attachment behavior will not be activated. While Farnfield (2014) discussed the observation of attachment behaviors, which is distinct from a measurement tool, the underlying principles hold true. For all intents and purposes, this sample reports an overall high degree of stress across many domains, which in effect should have been sufficient to activate the attachment schemas. Therefore, other factors in interpretation must be considered. For example, other studies on missionaries suggest that overall, this population is able to withstand a high degree of stress and has innate capacities towards resilience (Bagley, 2003; Schaefer et al., 2007). This resilience may have buffered the amount of perceived stress (Alim et al., 2008), making statistical difference undetectable.

Another statistical consideration is, rather than attachment style being a predictor variable as was hypothesized, attachment style may serve as either a mediator variable (DeShields, 2014) or as a moderator variable (Cordon et al., 2009; Scott & Babcock, 2010). Further research may shed light on this and clarify the role attachment plays in the perception of stress in this particular population.

**Sample characteristics.**

Although perhaps a limitation of the study, there are additional sample characteristics that may have influenced the results. The nature of the measurement tool for attachment may not have fit well for this population. The open-ended comments section at the end the survey revealed a number of participants had problems with the ECR-S (Wei et al., 2007). In fact, out of the 60 comments made at the end of the survey, 11 of them made reference to the ECR-S and how the term “romantic partner” did not apply to them. The researcher also received email queries about that particular measurement tool. Several single respondents reported being unable
to answer the questions due to the lack of a “romantic partner,” so they chose the “neutral” response. One married respondent commented that even as a married man, the question on “romantic partner” felt a “little strange” and that perhaps this measurement tool was designed for “short-term or immature relationships.” Nevertheless, the sample had a large percentage of married respondents (70%), thus the concept of romantic partner would seem to be understood by the majority. Nonetheless, the terminology for some of the respondents may have influenced scores and may have in essence produced error variance for this variable. While this observation will be further discussed in the limitation section, it warrants inclusion in the discussion section as well.

The lack of support for hypothesis one could also be attributed to the findings in research question 3, where there is an association of perception of stress and religious coping. The PSS scores indicate that an association exists between stress perception and religious coping independent of the attachment style. This may account for the fact that in this sample of evangelical missionaries, attachment style did not influence stress perception. Due to the largely religious attributes of the evangelical population, the perception of stress and the association with religious coping may account for these findings. In other words, religious coping is one way in which the perceived stress is managed rather than being influenced by attachment style. This will be furthered explored in research question 3.

**God attachment.**

Confound variables may also have impacted this result. While this research design deliberately excluded the God attachment as a variable in order to test the strength of adult attachment, it is possible that in this faith-based population, the God attachment may in essence have incremental validity above the adult attachment. This suggestion is congruent with other
research that has explored adult attachment alongside the God attachment. For example, in a study of adult attachment and religion, Kirkpatrick and Shaver (1992) found that perceived secure attachment to God was positively related to life satisfaction and negatively related to anxiety, depression, and physical illness. A recent study by Foulkes (2015) found that God attachment made a significant contribution over adult attachment on transformational leadership. In this study, the God attachment contributed 14% of variability on composite transformational leadership versus adult attachment, which contributed 4.5% of variability to the model. In addition, Reiner et al. (2010) reported that adult and God attachment anxiety, as well as adult attachment avoidance, significantly predicted perceived stress. Furthermore, the God attachment anxiety had incremental validity over adult attachment.

These findings make sense in light of underlying constructs of both our understanding of the attachment system and religion. As Keister (2010) has pointed out, attachment theory and religion both provide relational schemas by which the connection to God can be made. In that connection, attachment provides a useful framework to understand one's inclination to use various resources within the religious community in times of distress.

To further elaborate, Belavich and Pargament (2002) suggested that attachment to God was predictive of spiritual coping, which, in turn, was predictive of adjustment. The researchers also postulated that attachment to God provides a useful framework for understanding why individuals choose particular coping strategies. For example, Hall (2007a) reported that anxiously attached individuals rely more on God and the religious community while those classified as avoidantly attached utilize more self-reliant and/or negative coping strategies. A longitudinal study by Ellison, Bradshaw, Kuyel and Marcum (2012) showed that a secure attachment to God at baseline is associated with a decrease in distress over time. Furthermore, a
secure attachment to God buffers against the deleterious effects of stressful life events on distress. An anxious attachment to God exacerbates the harmful effects of stress and was a more robust predictor of changes in distress than race, gender, SES, and church attendance (Ellison, et al., 2012). Furthermore, key findings reported by Bradshaw, Ellison, and Marcum (2010) indicate that secure attachment to God is inversely associated with distress, whereas both anxious attachment to God and stressful life events are positively related to distress.

Therefore, there may be some underlying support from the literature that the God attachment may have incremental validity above the adult attachment. However, discussion is ongoing surrounding the continuities and discontinuities of adult attachment and God attachment with competing theories and often-conflicting results (Hall, Fujikawa, Halcrow, Hill, & Delaney, 2009). Therefore, continued research in the area of attachment in missionary populations may help clarify the role of God attachment and perceived stress in this unique population.

**Discussion of Additional Findings Related to Research Question One**

**Serendipitous Findings**

Although this study did not replicate other studies linking attachment style to perception of stress, some interesting findings did result. For example, the analysis of hypothesis one revealed that both age and gender demonstrated significant effects on PSS total score in the ANCOVA. The effects of these covariates was explored further by assessing the interaction effect these variables had with Attachment Style on PSS total score. These results indicate that age and gender differences on PSS scores were independent of Attachment style. Both age and gender findings on stress are consistent with findings in other studies. For example, a study by
Reiner and colleagues (2010) found that females reported stress at higher rates than did males. Speculation on whether gender served as a moderator led to further analysis. Rather than gender acting as a moderator, it was found that gender served as a suppressor variable. While there are inconsistencies in studies on the relationship between the role of gender and stress perception (Reiner et al., 2010), this study adds to other research that does suggest a connection between gender and perception of stress.

Age is also implicated in other studies on stress. In fact, others that have suggested that age may be an important factor in determining the magnitude of the stress response (Carpenter et al., 2009; Kidd et al., 2011; Lupien, McEwen, & Gunnar, 2009). Therefore, the current study is congruent with other research that has suggested that both age and gender are implicated in the perception of stress.

**Distribution Patterns of Attachment Styles**

The statistical analysis revealed the distribution patterns of attachment style for this sample as Secure (67%), Avoidant (4%), and Anxious (29%). However, this pattern is not consistent with other studies. Studies conducted by Mickelson, Kessler & Shaver (1997) on a national representative sample (n= 8098) suggested patterns of distribution seen in college samples, where the largest percentage of studies are conducted, are congruent to those seen in the national representative sample. The distribution percentages Mickelson et al. (1997) report suggest 59% secure, 25% avoidant, and 11% anxious (1997). Studies by Ainsworth, Blehar, Waters, and Wall (1978) suggest patterns of attachment styles as: 65% secure, 14% ambivalent (preoccupied), 21% avoidant (dismissing), and 5% disorganized (fearful).

However, a study on evangelical German Christian males revealed a different distribution pattern, with results showing 80% had a secure attachment style (Ross, 2007). However, Ross
proposed that some of the differences found may be due to attachment scales used (2007). Keister’s (2010) study yielded a similar pattern. Utilizing the attachment styles of Bartholomew and Horowitz (1991), the following attachment styles were found in the Keister’s (2010) sample among Christians: secure (82%), preoccupied (9%), dismissing (5.8%), and fearful (1.6%). Further studies on missionary attachments styles may help shed light on patterns and whether a difference exists in distribution patterns of attachments styles among missionary populations.

**CHOPS Stress Inventory and Attachment Style Findings**

Exploratory analyses of the CHOPS stress inventory found it had good psychometric qualities. The internal consistency was good (Cronbach’s $\alpha = 0.82$) and correlation with PSS total score was moderate ($r = 0.62$, p<0.001). Further testing was conducted to determine if CHOPS scores differed by Attachment Style, and no significant difference was found. However, since the categories of the CHOPS Stress Inventory are specific for this sample, a closer examination of the scores is warranted. For example, descriptive statistic comparisons showed there were some between-group differences in several of the categories of stress. For example, there were between-group differences in how the Anxiety group and Avoidant group reported stress in the categories of Human/Interpersonal, Organizational, Psychological, Support, and Spiritual. A brief discussion of these categories follows.

**Human/interpersonal.**

The category of Human/Interpersonal explored the overall category of relationships. This includes relationships with family members, colleagues, nationals, and children. It also includes issues such as couple conflict, struggles with team members, social opposition, caring for aging parents, few school options, human rights violations, harassment, persecution, discrimination, and stigma.
The sample at large reported an overall stress rating of 64.54% for Human/Interpersonal stress. The Human/Interpersonal stress for the Anxiety group was higher at 71.24%, and for the Avoidant group lower at 40.0%. These results are consistent with what we know about attachment styles and about missionaries. Interpersonal stress is often considered one of the larger stressors missionaries encounter. The percentage of stress this sample reported is consistent with other similar studies and the general missionary literature. For example, those with anxious attachments are more clingy, demanding, and sensitive to rejection. Those with avoidant styles are less engaged, less interactive, and more likely to avoid stress, thus lowering the overall score on stress scales.

**Organizational.**

The category of Organizational referred to stress resulting from incongruence between one's background and the organizational ethos, policies, work style, management practices, expectations, incompetence, corruption, abusive leadership, dysfunction, disability practices, legal protection, and training. The sample at large reported an overall stress rating of 35.94%. The Anxiety group was only slightly higher at 39.73%, but the Avoidant group score was significantly higher at 63.63%. These results are consistent with what is known about how those with an avoidant attachment orientation manage, or rather avoid, conflict and view those in authority. For example, generally speaking, attachment style may predict how individuals perceive and address conflict (Bowlby, 1969, 1973; Pistole & Arricale, 2003). The most effective, mutually focused conflict management styles are found with those who possess secure attachments (O’Connell-Corcoran & Mallinckrodt, 2000). Individuals with avoidant attachment style do not participate in mutual engagement in resolving conflict (O’Connell-Corcoran & Mallinckrodt, 2000). Thus, those with avoidant orientations typically avoid conflict resolution,
increasing the perception of stress. Furthermore, one’s view of authority is also attachment-based (Davidovitz et al., 2007). Overall, those with avoidant attachment styles typically have a negative mental representation and appraisal of others (Bartholomew & Horowitz, 1991; Mikulincer & Shaver, 2003).

**Psychological/emotional.**

The category of Psychological/Emotional includes overall emotional stability and self-esteem. This category of possible experiences may include loneliness, frustration, depression, unwanted habits, developmental issues/stage of life issues, transition, grief, loss, and the cumulative impact of “adverse life events.” The overall sample percentage of reported stress was 56.83%. The Anxiety group percentage was slightly higher at 62.5% and the Avoidant group lower at 54.54%. This difference can be explained by overall anxious tendencies, which manifest in more psychological symptoms, whereas avoidant attachment types are less engaged and repress emotionality.

**Support/financial.**

Support/Financial stress includes areas related to the resources used to sustain one's work. These resources may include finances, housing, clerical/technical help, donor contact, minimum pay and/or financial support, and finances used for survival and not just for one’s missionary work. The percentage of the overall sample for reported stress in this category was 35.97%. These findings were inconsistent with Bosch (2014), who reported financial stress as one of the largest stressors missionaries face. The between-groups differences are interesting nonetheless. The Anxiety group percentage was only slightly higher at 38.89%, but the Avoidant group rated this category even higher at 45.45%. A possible explanation for the higher percentage of reported stress in the avoidant group may have to do with how funds are raised. The vast
majority of the agencies represented in this sample were faith-based entities with which support-raising is the accepted means by which missionaries receive a salary for their work. It may be conjecture, but a possible reason for the higher percentage in the avoidant group is that support-raising is largely an interpersonal process. Those with avoidant tendencies are likely to find the ongoing relational aspects stressful.

**Spiritual.**

The Spiritual category may include factors such as the overall relationship with the Lord, devotional life, temptations, time with other believers, spiritual warfare, finding meaning, evil, inner growth, practices/disciplines, and lack of trust/respect for spiritual leaders. The overall sample reported stress at 45.52%, but for the Anxiety group, the percentage was higher at 52.06%, and the Avoidant group was also higher at 54.54%. This is an interesting outcome, as the vast majority (99.3%) reported overall positive patterns of religious coping. Positive patterns of religious coping are defined as seeking spiritual support, religious forgiveness, collaborative religious coping, spiritual connection, religious purification, benevolent religious reappraisal, and religious focus (Pargament et al., 1998a).

Nevertheless, the stress measured in the CHOPS Stress Inventory reveals a different dimension of spiritual life. It The spiritual stress measured may be more global in nature rather than indicate how one copes religiously. Nonetheless, the results are interesting in that despite patterns of positive religious coping, close to half of the entire sample reported spiritual stress. This result also attests to the aforementioned significant association between perception of stress and religious coping. An additional finding worth noting is in the category of occupational stress. This was the highest area of stress reported. In the overall sample, 72.24% rated this category in the moderate, high, or extremely high category. The Anxiety group rated it at
77.78%, and the Avoidant group at 81.82%. These are noteworthy scores considering the spiritual component of the participants’ work.

Although the descriptive statistics show some between-group differences between the Anxious and Avoidant categories, the results should be interpreted with caution for several reasons. First, in this sample of evangelical missionaries, only 4% of the sample scored in the avoidant classification of attachment. Furthermore, the results were derived from a new assessment tool. Although initial statistical analysis showed good psychometric properties compared to the PSS, further research is needed.

**Research Question and Hypothesis Two**

2. Does the experience of stress predict positive or negative religious coping strategies missionaries employ?

H₀: Perceived stress will not differ significantly between positive and negative religious coping styles.

H₁: Lower levels of perceived stress will be directly associated with positive religious coping in missionary populations.

Since there were so few individuals who could be classified into the group of negative religious coping, a religious coping score was calculated based on the sum of scores for the positive and negative coping questions from the Brief RCOPE. In an unadjusted regression model, PSS total score was significantly associated with the religious coping score and in the adjusted model, which included gender, age, and education, PSS total score still showed a significant association with the religious coping score. These results suggest there is a significant association between perception of stress and religious coping.
Discussion of Results

The results of research question two are interesting. On one hand, in the overall sample, the vast majority of the respondents reported utilizing positive religious coping methods (99.3%), which was a surprising outcome in itself. This result required a different approach to the research question. The results of the regression analysis indicating a significant association between scores of the religious coping and scores on the PSS can best be explained by the fact that religious coping or the constructs that underly religious coping is how the stress is managed. This is consistent with other research. For example, Bong-Jae (2007) explained that research suggests that spiritual beliefs are protective factors for many individuals in times of stress because they are associated with enhanced coping skills and better psychological well-being. Therefore, one area that may be a buffer for the perceived amount of stress in missionary populations is religion. Knowing they are serving God and being obedient to His call may buffer the perception of stress leading to positive religious coping. Missionaries may even expect these stressors (Bagley, 2003; Eenigenburg & Bliss, 2010) to a certain degree, and thus have innate capacity to absorb the stress. In fact, Pargament (2002a) pointed out that during times of stress or crisis, spiritual or religious practices are converted into concrete forms of coping, which can have a strong impact on people’s health, provide resources for coping, and affect the individual’s perception of the event.

Research Question and Hypothesis Three

3. Does the perception of stress interact with attachment style on religious coping?

$H_0$: Experience of stress and attachment style will have no interaction on religious coping style.

$H_a$: Experience of stress and attachment style will have a significant interaction on
religious coping in that low experience of stress and secure attachment style will be associated with positive religious coping.

The hypothesis was not supported in that the interaction between Attachment Style and PSS total score was not significantly associated with the religious coping score. This means that the sample chose patterns of positive religious coping independent of their attachment style and independent of the scores of stress perception. This association remained non-significant after adjusting for age, gender, and education.

**Discussion of Results**

Another way to explain these findings is that in this population, the pattern of positive religious coping would not change if the stress was increased or reduced, or based on a certain attachment style. The vast majority of the population (99.3%) reported positive patterns of religious coping regardless of their attachment style or stress perception.

**Research Question and Hypothesis Four**

4. Does religious coping account for unique variance in perceived stress?

H₀: Religious coping will not account for a significant amount of variance in the perceived stress of missionaries.

Hₐ: Religious coping will account for a significant amount of variance in the perceived stress of missionaries.

Based on the adjusted linear regression model used in hypothesis two, religious coping accounted for approximately 5% of the variance in PSS total score as measured by eta-squared. Although a significant association between religious coping and stress perception was found in hypothesis two, it is likely that religious coping (or the mechanisms underlying this construct) has a relatively small impact on perceived stress. Religious coping by itself may not predict perceived stress, but is a mechanism by which the stress is managed.
Discussion of Results

Pargament et al. (1990) described the connection between religion and coping in three key ways. First, religion can be part of every element of the coping process, such as in the appraisal, the actual activities of coping, as well as in the outcomes. Second, religion can shape the coping process in what persons choose to engage in to cope. Third, religion can, in turn, be shaped by the process of coping itself. Pargament (2002b) pointed out that during times of stress or crisis, spiritual or religious practices are converted into concrete forms of coping, which can have a strong impact on people’s health, provide resources for coping, and affect the individual’s perception of the event.

To examine these findings in light of the complex relationship between these variables, several factors should be considered. In this case, the small amount of variance that religious coping accounted for may be explained by the fact that religious coping occurs in the latter part of the overall stress process. That is, the association is likely due to the use of religious coping to manage stress, rather than religious coping predisposing someone to have more or less perceived stress. This dynamic can be better understood by examining the diagram of the theoretical model proposed for this study (Figure 1).

In light of the proposed theoretical model, the model suggested a bidirectional relationship between stress perception and religious coping. The association between stress perception and religious coping was significant as seen in hypothesis 2. However, religious coping only accounted for 5% of the scores on the PSS. While counterintuitive considering the population in question, there could be several reasons for these results. The reasons may lie partly in the methodological approach. In essence, Pargament et al. (1998a) noted that the Brief RCOPE does not capture all there is to know about religious coping. They reported that only
33% of the total variance was explained by the factor analyses of the positive and negative religious coping methods. The authors of Brief RCOPE emphasized that the measure was not intended to be a substitute for a more thorough analysis of specific religious coping methods, but it can serve complementary purposes. Therefore, all of the variance of religious coping may not have been captured with this particular measurement tool. In fact, according to advanced understanding of religious coping, Pargament (2002b) proffered that no single research method could capture the character of religious coping because there is no single character of religious coping.

Furthermore, Pargament (1997) suggested that religious coping is a dynamic process that changes over time, context, and circumstances. In fact, positive religious coping may be one element of a broader coping system used by individuals. It might be that positive religious coping is used in certain circumstances, but may not be the primary coping mechanism that an individual utilizes in stressful situations. Pargament (2002b) stated that people draw religious solutions to problems from a more general orienting system that is made up of well-established beliefs, practices, attitudes, goals, and values. Moreover, religious coping, which is shaped by cultural factors, is triggered by particular situations, especially those situations that push the individual beyond his or her everyday understandings and limited personal and social resources (Pargament, 2002b). It may be that in the context of perceived stress, the use of positive religious coping may be utilized to a greater extent (i.e., variance) in different emotional situations such as a traumatic event, grief, or personal loss. Krok (2008) proffered that the relationships between spirituality dimensions, coping styles, and individuals’ reactions to stress depend on the configuration of their spiritual qualities. Reactions may change in proportion to dominance of particular qualities in individuals. Krok (2008) added that alterations in an
individual’s spirituality through personal experiences, spiritual practices, or religious education may influence the selection and use of coping styles when the individual approaches stressful events. One further consideration lies in the sample characteristics. Corsini (2009) postulated that evangelicals utilize religious coping in ways that might be different than Pargament et al. (1990) conceptualized. The fact that in this sample only 5% of the variance is accounted for in the perception of stress affirms previous findings that religious coping has a complex relationship with perceived stress (Ano & Vasconcelles, 2005). Due to the complexity of the relationship between religious coping and stress, further research is warranted. This need for further research holds particularly true for studies with evangelical missionary populations due to the stress-ridden religious vocation in which they are engaged.

**Research Question and Hypothesis Five**

5. In this sample of cross-cultural evangelical missionaries, will there be a greater pattern of positive or negative religious coping methods?

H₀: In this sample of cross-cultural evangelical missionaries, positive and negative religious coping will occur at an equal rate among the individuals.

H₁: In this sample of cross-cultural evangelical missionaries, there will be a greater use of the pattern of positive religious coping methods than the pattern of negative religious coping methods.

**Discussion of Results**

Hypothesis five was fully supported in that 99.3% reported positive religious coping patterns. This finding is consistent with Pargament et al. (1998a), who reported that overall, most people utilize positive religious coping. These results are significant for the population
studied, as generally speaking, positive religious coping is associated with better overall functioning (Koenig, 2001; Pargament et al., 1998a; Weber & Pargament, 2014). General literature on religious coping indicates that spirituality is an important buffer against stressful events, which may help people to overcome their distress and difficulties (Krok, 2008). Religion has been shown to have anxiolytic power (Inzlicht & Tullett, 2010), thus the results indication that the majority of this sample choose positive religious coping methods may signify that positive religious coping served as a way to manage some of the inherent stressors of missionary life. As Krok (2008) suggested, the mechanisms lying behind spiritual or religious coping may reflect finding meaning, purpose, and hope, which, in turn, may strengthen individuals in their struggle with suffering.

**Additional Findings and Observations in Overall Study**

**Social Desirability**

The results of the Marlowe-Crowne Short Form C (Reynolds, 1982) were encouraging, as there appears to be no social desirability bias in the responses. Previous research suggests that missionaries are reluctant to share vulnerabilities (Chester, 1983; Eenigenburg & Bliss, 2010; Mills, 2008). It is uncertain if the anonymity of the internet aided in these responses. An interesting anecdotal observation is that in the comments section of the responses, a significant number of comments related to the true/false format of the Marlowe-Crowne Short Form C (Reynolds, 1982). Several participants (n=7) commented that the answers were too “black and white.” Others asked that the researcher add a “sometimes” or “occasional” option.
CHOPS Stress Inventory

On the CHOPS Stress Inventory, respondents were given an option to list 3-5 of their top stressors. Of the entire sample of 361 that accessed the survey, 294 chose to share specific stressors they were experiencing. This indicates a willingness to share in this vital area affecting their lives. While these comments are not coded or measured statistically, the content shared included everything from daily hassles common to most humans to the extreme of assaults, including sexual assaults, and reported terrorist attacks. These responses demonstrate the magnitude of events along with a willingness to share these occurrences. It could be said that there was some implicit trust incorporated in the design of the survey. The research was not only approved by Liberty University, a known evangelical entity, but the invitation to the survey was sent out by sources familiar to the target sample population. Lastly, the study itself was designed to address missionary stress and overall to help further research that would ultimately aim to advance missionary member care services.

Overview of Theoretical Model and Results

The proposed theoretical model was tested.
Results suggest that parts of the hypothesized theoretical model were supported. The first part of the model was not supported in that in this sample, utilizing the scores of the ECR-S (Wei et al., 2007) and the PSS (Cohen et al., 1983), the attachment style did not predict the perception of stress. However, preliminary studies of the CHOPS Stress Inventory (O’Donnell et al., 2014) revealed some descriptive statistics highlighting between-group differences (Anxiety and Avoidant) in the perception of stress in 5 categories (Human/Interpersonal, Organizational, Psychological, Support, and Spiritual). Additional differences were found between the Avoidant and Anxious group as compared to overall sample in the Occupational category.

The bidirectional relationship between stress perception and religious coping suggests there was a significant association between perception of stress and religious coping in one
direction. In the other direction, religious coping only accounts for 5% of the scores on the PSS, indicating that religious coping is a construct by which stress is managed but does not predispose someone to perceive stress at a higher or lower rate. In this sample, attachment style did not influence the pattern of religious coping, as in the sample, 99.3% reported positive religious coping.
Summary of Findings

In a sample of 267 cross cultural evangelical missionaries, a proposed theoretical model exploring the relationships between attachment style, perception of stress, and religious coping was tested in five research questions and hypotheses. The hypothesis that attachment style would predict perception of stress was not supported. The results indicate that age and gender differences on PSS scores were independent of Attachment style. However, there were significant effects of age and gender on the scores for perceived stress.

Additionally, there was significant association between perception of stress and religious coping. Nevertheless, religious coping only accounted for 5% of the variance in perception of stress. The vast majority of the sample reported patterns of positive religious coping. Religious coping patterns were not influenced by attachment style.
Implications of Study

Implications for Practice

The results of this study can provide information to member care in specific areas related to the mental health of missionaries. The results of the stress levels reported overall may indicate the major areas to which to direct resources. For example, the results of the CHOPS Stress Inventory suggested the most common areas of stress reported are Occupational (72%), Human/Interpersonal (65%), Psychological/Emotional (57%), Cross Cultural (52%), and Spiritual (46%). These results are consistent with other studies of missionary stressors. However, it is the cumulative effects of stress that must continue to be addressed (Chester, 1983). At the time of the study, 68% of the sample reported the overall stress over the past month as moderate, high, or extremely high. This is telling. With the cumulative effect of stress over many domains, the potential for burnout is high. While the results of this study do not necessarily point to attachment style as a major predictor of perceived stress, other studies have (Pines, 2004). Still, member care initiatives can help foster resilience, which may serve as a buffer for stress (Alim et al., 2008).

Perception of Stress Gender and Age Variables

The serendipitous findings that age and gender had a significant influence on the perception of stress are important to explore. The finding in this study is congruent to others that have suggested that age may be an important factor in determining the magnitude of the stress response (Carpenter et al., 2009; Kidd et al., 2011; Lupien et al., 2009). According to the results of the current study, younger individuals are more susceptible to stress. In essence, the younger demographics of this sample population may be reflective of the demographics of the current
missionary force worldwide. Therefore, with the new younger (demographically speaking) missionary force being sent out, member care personnel can take note and provide additional stress management training for this age group. Furthermore, studies on missionary stressors conducted by Irvine et al. (2006) also suggested that younger missionaries were more vulnerable to permanent negative change due to traumatic stress.

**Spirituality and Stress**

The spiritual dimension of missionary life should continue to be a focus of member care. Helping missionaries mature in their faith is especially warranted considering the types of stressors missionaries experience physically, emotionally, and spiritually. However, spiritual formation, which is key to successful missionary service, begins years before missionaries leave their homeland. As Pollock (2002) pointed out, spiritual formation prior to going overseas is critical. He added that typically, nothing dynamic of a spiritual nature occurs during the flight across an ocean and it can be a great disappointment to discover that the person entering the airport in a new country is basically the same person who left the old. Pollock (2002) indicated that neither the name “missionary” nor the new geographical location produces the spiritual maturity that may be needed. Therefore, the expectation that missionaries are “spiritual giants” has a dark side. Missionaries must continue to grow and mature in their personal lives as well as in their professional or faith praxis. This continuous development is especially important as this study suggests age is an important variable in the perception of stress, and age may make a difference in the depth of spiritual or faith maturity. According to Harrowfield and Gardner (2010), this maturity is implicated in stress management and appraisal.

To elaborate, in a study of work-related stress in Christian organizations, Harrowfield and Gardner (2010) shared the concept of “vertical faith maturity,” which they described as a faith
that is focused on God, while horizontal faith focuses more on others. The researchers reported that this vertical faith plays an important role in appraisal and coping with work-related demands by employees in Christian organizations. They reported that in their study, respondents with higher levels of faith maturity were more likely to appraise stressors as challenges, and had more positive affect, less negative religious coping, and more stress related growth. In other words, based on Harrowfield and Gardner’s (2010) study, faith maturity was an important mediator of the relationship between challenge appraisals and positive religious coping, and positive religious coping mediated the relationship between faith and stress-related growth. Furthermore, the researchers found that mature faith does not reduce or accentuate the threat or harm from stressors, but it may be linked with an increased awareness of positive opportunities in difficult situations (Harrowfield & Gardner, 2010). This idea is consistent with Pargament’s (1997) suggestion that people with mature faith tend to have an encouraging perspective of stressors without disregarding the stressful and potentially threatening situation at hand. The finding is also consistent with Hall, Brokaw, Edwards, and Pike’s (1998) proposal the developmental maturity of one's faith and relationship with God is associated with the developmental maturity of one's relationships with others.

Therefore, in light of the above findings, the results of this study warrant the inclusion of a spiritual component in member care. With 72% reporting moderate, high, or extremely high stress, work-related or occupational stress was one of the most frequently reported categories in the CHOPS Stress Inventory. Considering the spiritual nature of the work missionaries do, work-related stress might be related to spirituality. This finding is congruent to many studies on missionary stress (O’Donnell, 1995) as well as to suggestions made by Erikkson (2012), Kimber (2012), and others (Adiwidarna, 1997; Andrews, 1999; Barnett, Duvall, Edwards, & Lewis Hall,
2005; Ng, 1997) who recommend more spiritual integration in member care initiatives. While faith maturity was not measured in this study, it stands to reason that a more mature faith would mitigate the negative effects of stress and increase growth through adversity.

Additionally, maturation factors are important to consider as the largest category of respondents were of a younger demographic and demonstrated a higher perception of stress. While chronological age does not always indicate a lower level of faith maturity, it makes sense that maturity both in faith and experience may mitigate stress.

**Gender Variable and Stress**

This study also suggests that gender may play a role in the perception of stress. While inconsistencies do exist among studies (Reiner et al., 2010), this study suggests that females perceive stress at a significantly higher level than males. This gender variable is extremely important to note. Across many mission settings, female missionaries far outnumber male missionaries. Furthermore, studies conducted by Pruitt (as cited in Walker, 2014) revealed that 85% of single missionaries are female. Considering the current missionary pool demographics along with the findings of this study, addressing the needs of females on the mission field is vital. It is also interesting that in this sample, 70% of the respondents were female. It may be that female missionaries are more likely to answer surveys. On the other hand, there may be more female missionaries in general, thus the percentage reflects the current pool. However, one other consideration for a higher response rate for females is that the topic of stress is one that sparked interest and specifically may be an area of concern for female missionaries.

**Member Care Needs of Females**

In light of these results, member care should continue to address the specific needs of female missionaries. There is some conjecture in the literature that women suffer more than
males in the area of interpersonal stress. At the same time, women often turn to interpersonal relationships to manage stress (Reiner et al., 2010). As previously cited, Ritchey and Rosik (1993) emphasized that the web of relationships among missionaries may be a source of support and care and promote health and wellness, or they may be conflict-ridden and a source of stress. How member care addresses these issues is important. Member care may provide additional resources for women on relationships and specifically for coping with the realities of missionary life. As Eenigenburg and Bliss (2010) have highlighted, expectations of women going into missionary service are unduly high. These high expectations are often unmet and can lead to disillusionment and burnout. Furthermore, among women missionaries, there is often competition, conflict, and comparison, all of which can fuel stress.

Graybill (2001) pointed out that women in general have a higher degree of emotional needs as compared to males. However, the emotional needs of women on the mission field are incrementally higher and harder to meet. For example, Graybill (2001) described the overall difficulty of missionary life as compared to life in a homeland setting. Most women thrive on security, roots, and safety, all of which may be lacking in mission settings. Some of the larger emotional needs are for intimacy and close friendships, validation and affirmation, healthy relationships in the mission community, spiritual nourishment and support, time alone, maintaining close contact with family members in their home country, and to be understood by others in their homeland. Graybill (2001) added that single females on the mission field have emotional needs that include learning to “go it alone” while serving, finding acceptance in cultures where being single is an anomaly (which can extend to the mission subculture as well), dealing with her sexuality, and coping with the fact that she may never get married. Married
female missionaries also have a host of emotional needs such juggling the role of wife, mother, and being a missionary (Graybill, 2001).

Graybill (2001) is not alone in advocating for addressing the needs of female missionaries. The role of women on the mission field has fostered several studies and recommendations (Bowers, 1984, 1985; Crawford & DeVries, 2005). For example, Crawford and DeVries (2005) found an overall lack of due recognition for women. They face difficulties in child rearing, resistance from men and other women on the field, differing expectations, and role ambiguity. They suggested mission agencies create an “ethos” whereby women’s choices in the roles they have on the mission field are honored (Crawford & DeVries, 2005). This idea is consistent with Hall and Duvall’s (2003) findings that women with the freedom to choose her own role in missionary work had a greater sense of well-being. Therefore, the specific needs of female missionaries is another area to which member care can direct efforts. Some specific ideas would be to address the emotional needs women have and specifically as they relate to relationships while on the mission field. It is often noted that women do not have a lot of options in friendships on the mission field (Graybill, 2001). Therefore, the pool from which they choose friends is limited. Additional resources may help with coping skills, choosing and maintaining healthy relationships, handling criticism, and conflict management.

Overall, there is a romantic and adventurous intrigue surrounding missionary life (Eenigenburg & Bliss, 2010). Many excellent programs are designed to address these romantic or adventurous notions pre-field. Over the years, there has been a more concentrated effort to provide pre-field psychoeducation about the realities of missionary life. These teachings and programs are often front-loaded; that is, the majority of the programs take place before the missionary leaves for service. More often than not, the realities of living cross-culturally are
harder than anticipated. Therefore, more ongoing assessments and/or frequent member care checkups may be helpful.

Overall, work-related stress is extremely concerning for all missionary units, young old, male and female, single and married. Therefore, member care initiatives could help reduce that stress by ensuring roles are clearly defined and match the spiritual gifting of the missionary. Another practical way to reduce stress is to insist that the missionaries take more time off for renewal and recreation. Pillars of health include balance in the physical, emotional, and spiritual realm. Many agencies provide retreats, regional conferences, and many other wonderful opportunities for missionaries. However, the logistics of accessing some of these opportunities can prevent missionaries from taking advantage of them. The logistical problems may include finances, getting time away due to the heavy workload or children’s schooling, or other obstacles. Agencies should ensure their missionaries have access to these special times.

**Summary of Implications for Practice**

Missionaries in this sample reported a wide variety of stressors across many domains of functioning. Age and gender variables showed significant effects on the PSS scores. The current missionary pool may reflect this particular sample and thus be comprised of a younger demographic who may be more susceptible to stress. Females outnumber males on the mission field, and have unique emotional and interpersonal needs. Therefore, it is recommended that member care continue to address stress management for all units, but give specific attention to the younger age groups and women on the field. Women in particular are more susceptible to interpersonal stress. Consequently, an additional focus of member care may be in addressing healthy relationships, managing criticism from others, or coping skills with limited options for friendships.
The results of this study emphasize the needs in several key areas that warrant additional attention. Work-related stress is extremely high, as is interpersonal stress. The overall ratings of stress in this sample experienced by missionaries across so many domains of functioning may lead to burnout. Member care should continue to be proactive in assisting missionaries by helping them develop overall coping skills, stress management, and time management, providing specific job roles according to gift mixes, and ensuring missionaries have access to times of refreshment and renewal. Member care should also continue to be proactive in providing opportunities for spiritual growth and ensuring missionaries have opportunities to attend to their most important relationship, the one with God.

**Implications for Future Research**

Missionaries in general are an understudied group (Keckler et al., 2008). Research that explores the interrelationship between variables are especially helpful to inform member care on how to implement best practice protocols. Therefore, based on the results of this study, the following areas are recommended for future research.

**Attachment Style**

Missionary research on attachment styles lags in comparison to the general population (Mills, 2008). Measuring attachment style in missionaries is an important area of research. However, the results of this study did not replicate the findings of other studies on attachment style and perception of stress. Therefore, methodological issues must be considered. Perhaps a different adult measurement tool or better instructions for the use of the ECR-S (Wei et al., 2007) would help resolve the confusion over the term “romantic partner.” Additionally, more studies on adult attachment style among missionaries would be helpful in order to determine if there are
any distribution patterns that emerge in this unique population. Further studies on attachment and perception of stress in missionary populations might include attachment as either a moderator or mediator variable. Other studies might include measurement of resilience to see if resilience acts as a buffer for the perception of stress. More importantly, as a result of this study, further research on the God attachment and perception of stress would help clarify if indeed the God attachment has incremental validity above adult attachment in missionary populations.

**Stress Perception-CHOPS Stress Inventory**

One of the more significant findings of this study was the comparison of the Perceived Stress Scale (Cohen et al., 1983) to the newly designed CHOPS Stress Inventory (O’Donnell et al., 2014). While several stress tools may serve to measure stress in missionary populations, many tools have a large number of questions, which may tire respondents. This tool is one of the first to provide a quantitative scale with stressors specific to cross-cultural workers, and has a total of 17 items. It demonstrated good psychometric quality and further studies utilizing it in research is warranted.

**Religious Coping**

The fact that 99.3% of the population reported patterns of positive religious coping should be reexamined since Pargament et al. (1998a) reported the Brief RCOPE only accounts for 33% of the variance of religious coping. Further studies in missionary populations could help determine if this is a common pattern or if a different measurement tool would add to the findings. Furthermore, a study similar to Harrowfield and Gardner’s (2010) that measures the faith maturity and the perception of stress would be interesting to conduct in a missionary sample. Such a study may help determine if faith maturity does mitigate stress in missionary populations.
Limitations of the Study

As in most research, generalizability concerns exist (Kazdin, 2003). The results of this study of 267 participants cannot be assumed to be true of all cross-cultural, evangelical missionaries. A large percentage of respondents (93%) reported their ethnicity as white, non-Hispanic, and the largest percentage were sent out from the USA (82%), making it difficult to generalize to other missionary populations, especially those sent out by NSC. Another notable observation is that 70% of the respondents were female and another 70% married, which also limits generalizability.

Furthermore, only certain people respond to surveys (Kazdin, 2003), and the overuse of surveys in missionary populations (Koteskey, 2007) may also have influenced participation. The fact that the survey was internet-based raises concerns as well. There may have been problems with limited access, internet instability, and security issues in restricted countries, which may have prohibited some from participating or completing the survey. In fact, there were many surveys with skipped, missed, or unanswered questions, resulting in a reduced data set. Several mission agencies sent the link out to their constituents near the end of the 30-day response period. Therefore, some who may have desired to participate may not have received the invitation in time to respond before the survey closed.

As previously mentioned, the use of self-reports has its own set of concerns (Kazdin, 2003; Mallinckrodt & Wei, 2005). However, the inclusion of a social desirability scale was helpful to establish that respondents were not influenced by social desirability bias. The cross-sectional design also creates concerns, as assessing missionaries at one point in time provides valuable information, but may not accurately reflect functioning across all contexts or constructs.
The study was conducted between April and May of 2015; therefore, external factors in each country may influence results. For example, in the comments section, several reported terrorist-related stress, terrorist attacks (one reported an attack that killed 147 people), political unrest or insecurity, military conflict, armed conflict, national/state elections, and power outages. Others reported country-specific stressors such as weather-related stressors, including tornadoes and excessive heat, and environmental factors in the country that were affecting the family’s health.

As mentioned previously, some of the measurement tools and specifically the social desirability true/false format and the terminology of “romantic partner” used in the Experience in Close Relationship Short Form (ECR-S; Wei et al., 2007) caused confusion and some had difficulty responding to the questions. Other statistical concerns were related to hypothesis two, which asked whether the experience of stress predicts whether missionaries employ positive or negative religious coping strategies. In this sample, 99.3% reported positive religious coping. This result created the need to approach the research question and statistical analysis from another angle. Specifically, the religious coping score was calculated based on the sum of scores for the positive and negative coping questions from the Brief RCOPE (Pargament et al., 1998a). In an unadjusted regression model, PSS total score was significantly associated with the religious coping score, and in the adjusted model, which included gender, age, and education, PSS total score still showed a significant association with the religious coping score. These results suggest there is a significant association between perception of stress and religious coping. However, it does raise questions as to whether a different approach to measuring religious coping should be examined.

For example, as mentioned previously, the Brief RCOPE religious coping scale as reported by Pargament et al. (1998a) only captures 33% of the variance of religious coping. In
research question 4, this lower percentage of variance to begin with may have affected the results, given that the results of this study suggest that Religious Coping only accounts for 5% of the variance of Perceived Stress scores. Future research may choose to use additional religious coping measures to capture more of the religious coping variable to assess how much variance is reflected in the perceived stress scores.

Results derived from the CHOPS Stress Inventory (O’Donnell et al., 2014) should be interpreted with caution and only serve as conjecture. Although the initial results showed good psychometric qualities, further research is needed to assess its validity.

**Conclusion**

As evidenced by the overall results of the ratings of CHOPS Stress Inventory and open-ended survey questions, cross-cultural missionaries in this sample are exposed to multiple stressors across many domains. However, the hypothesis that attachment style would predict how this stress is perceived was not supported. There was, though, significantly higher stress perceived in the younger age group categories as compared to the older age groups. There was also significantly higher perception of stress in the female respondents. Additionally, there was found a significant association between perceived stress and religious coping independent of the attachment style. The religious coping variable accounted for 5% of the PSS scores, and the overall sample reported positive patterns of religious coping. Member care initiatives may include increased attention to overall coping skills and stress management for missionaries. Targeted attention should be provided for the younger age groups and females. Member care should continue to provide help with time management, interpersonal stress, and job-related
issues, and ensure that missionaries have access to opportunities for refreshment, renewal, and spiritual growth.

Missionaries are an essential and integral part of God’s plan for the world. Their value cannot be underestimated. Over the years, many wonderful lessons have been learned which have helped reduce premature attrition (Taylor, 1997) and keep the missionary force healthy physically, emotionally, and spiritually. These efforts are to be celebrated. Although this concludes the discussion on this study, it is through prayer that in some way these results can have a meaningful and beneficial impact on those who have set their heart on pilgrimage (Psalm 84).
REFERENCES


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Schwandt, J. R., & Moriarty, G. (2008). What have the past 25 years of member care


APPENDIX A: Measurement Tools

Due to copyright laws, the measurement tools used in this study are not included in this manuscript.
APPENDIX B: Permission to Use or Adapt Measurement Tools

RE: Permission to use ECR-Short Form

Wei, Meifeng [PSYCH] <wei@lastate.edu>

You are very welcome! Best wishes to your study!

From: Tone, Laurie Anne <latone@liberty.edu>
Sent: Sunday, September 14, 2014 4:30 PM
To: Wei, Meifeng [PSYCH]
Subject: RE: Permission to use ECR-Short Form

Dear Dr. Wei, thank you very much. I am looking forward to the research utilizing this scale. Thank you for the link as well.
Laurie

From: Wei, Meifeng [PSYCH] <wei@lastate.edu>
Sent: Saturday, September 13, 2014 8:25 PM
To: Tone, Laurie Anne
Subject: RE: Permission to use ECR-Short Form

Thank you for your interest in my scale. Please feel free to use it. See my website for article #20.

Meifeng Wei, Ph.D.
Professor of Psychology
W112 Lagomocino Hall
Iowa State University
515-294-7534 (office)
515-294-6424 (fax)

From: Tone, Laurie Anne <latone@liberty.edu>
Sent: Friday, September 12, 2014 6:50 PM
To: Wei, Meifeng [PSYCH]
Subject: Permission to use ECR-Short Form

Dear Dr Wei,
My name is Laurie Tone and I am a Ph.D. student at Liberty University and entering the dissertation phase. I am writing to seek permission to use the Experience in Close Relationship Short form in my research. Should permission be granted I would be happy to share any research findings with you. Thank you for your consideration and thank you for the tremendous contributions you have made to our field. I am using a lot of your findings in my literature review and have benefitted greatly from your research. Please let me know if you need more specifics about the study or any guidelines you have for the use of the ECR 12 Item
RE: Permission to use Perceived Stress Scale PSS-10 in Research

Sheldon Cohen <scohen@cmu.edu>

Sat, 13 Sep 2014 12:23 PM

To: Tone, Laurie Anne <latone@liberty.edu>

Laurie, you are welcome to use the PSS for your dissertation. Best of luck with your work. sc

From: Tone, Laurie Anne [mailto:latone@liberty.edu]
Sent: Friday, September 12, 2014 7:27 PM
To: Sheldon Cohen
Subject: Permission to use Perceived Stress Scale PSS-10 in Research

Dear Dr. Cohen,
My name is Laurie Tone and I am a Ph.D. student at Liberty University entering the dissertation phase of my studies. I am writing to you to ask permission to use the 10 item Perceived Stress Scale in my research.

Should permission be granted I would be happy to share any research findings with you. Please let me know if you need more specifics on the research or if you have any questions or guidelines for the use of the PSS-10.
Thank you and thank you for the tremendous amount of contributions you have made to the field. Your work is appreciated.

Respectfully submitted,
Laurie A. Tone, MA
Ph.D. student
Liberty University
RE: Permission to use Brief RCOPE in research

Kenneth I Pargament <kpargam@bgsu.edu>

Mon 9/15/2014 7:22 AM
Reply

To: Tone, Laurie Anne <latone@liberty.edu>

Dear Laurie:

You have my permission to use the Brief RCOPE. Please keep me posted on your findings.

Sincerely,

Kenneth I. Pargament, Ph. D.
Professor, Department of Psychology
Bowling Green State University
Bowling Green, Ohio 43403
(419) 372-8037


From: Tone, Laurie Anne [mailto:latone@liberty.edu]
Sent: Friday, September 12, 2014 7:07 PM
To: Kenneth I Pargament
Subject: Permission to use Brief RCOPE in research

Dear Dr Pargament,

Greetings and blessings to you. My name is Laurie Tone and I am in the dissertation phase of a Ph.D. in Professional Counseling through Liberty University. For the dissertation research, I am hoping to study the patterns of positive and negative religious coping in cross cultural, evangelical missionary populations along with the role of attachment style and experience of stress. Therefore, I am requesting permission to use the 14 item Brief RCOPE in my study. Thank you for your consideration and should permission be granted I would be happy to share the findings with you. Thank you for your tremendous contributions to the field. Your work is greatly appreciated.

Respectfully submitted,
Laurie A. Tone MA
Ph.D. student
Liberty University
615-557-5717
On Thu, Aug 7, 2014 at 6:42 PM, Tone, Laurie Anne < > wrote:

Dear Drs Kelly and Michele, thank you very much for your permission and your wonderful suggestions and observations. I am going to keep working on it and will resend an updated version for you. I really appreciate your feedback and the time you have given for this. Many thanks and continued blessings. Will be in touch again soon.

Laurie

From: Kelly ODonnell < >
Sent: Wednesday, August 06, 2014 1:37 AM
To: Tone, Laurie Anne
Cc: Michele lewis odonnell; Member Care Associates
Subject: Re: Permission to adapt and thoughts

Dear Laurie,

Thanks for your update on your dissertation. Yes, feel free to use the 2012 version of the CHOPS Inventory. Feel free to also adapt it as you have (format) as well as adjusting and adding additional items in the 10 categories.
This is a License Agreement between Laurie A. Tone ("You") and John Wiley and Sons ("John Wiley and Sons") provided by Copyright Clearance Center ("CCC"). The license consists of your order details, the terms and conditions provided by John Wiley and Sons, and the payment terms and conditions.

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| License type | 3494210542769 |
| License date | Oct 22, 2014 |
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| Licensed content title | Short, homogenous versions of the Marlow-Crowne Social Desirability Scale |
| Licensed copyright line | Copyright © 1972 Wiley Periodicals, Inc., A Wiley Company |
| Licensed content author | Robert Strahan, Kathleen Carrese Gerbasi |
| Licensed content date | Feb 21, 2006 |
| Start page | 191 |
| End page | 193 |
| Type of use | I don't see my intended use |
| Special requirements | I would like permission to use one of the short forms of marlowe crowne social desirability scale in my Ph.D. research non commercial use internet based survey |
| Order reference number | permission to use in Ph.D. research |
| Total | 0.00 USD |

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APPENDIX C: IRB Documents, Informed Consent, Invitation to Participate in Research

LIBERTY UNIVERSITY
INSTITUTIONAL REVIEW BOARD

April 15, 2015

Laurie Anne Tone
IRB Exemption 2169.041515: Examining the Relationship between Attachment Style, Stress Perception, and Religious Coping in the Evangelical Missionary Population

Dear Laurie,

The Liberty University Institutional Review Board has reviewed your application in accordance with the Office for Human Research Protections (OHRP) and Food and Drug Administration (FDA) regulations and finds your study to be exempt from further IRB review. This means you may begin your research with the data safeguarding methods mentioned in your approved application and no further IRB oversight is required.

Your study falls under exemption category 46.101(b)(2), which identifies specific situations in which human participants research is exempt from the policy set forth in 45 CFR 46:101(b):

(2) Research involving the use of educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures or observation of public behavior, unless:

(i) information obtained is recorded in such a manner that human subjects can be identified, directly or through identifiers linked to the subjects; and (ii) any disclosures of the human subjects' responses outside the research could reasonably place the subjects at risk of criminal or civil liability or be damaging to the subjects' financial standing, employability, or reputation.

Please note that this exemption only applies to your current research application, and any changes to your protocol must be reported to the Liberty IRB for verification of continued exemption status. You may report these changes by submitting a change in protocol form or a new application to the IRB and referencing the above IRB Exemption number.

If you have any questions about this exemption or need assistance in determining whether possible changes to your protocol would change your exemption status, please email us at

Sincerely,

Fernando Garzon, Psy.D.
Professor, IRB Chair
Counseling
(434) 592-4054

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Liberty University | Training Champions for Christ since 1971
CONSENT FORM

Exploring the Relationship between Attachment Style, Stress Perception and Religious Coping

Laurie Anne Tone
Liberty University
Center for Counseling and Family Studies

You are invited to participate in a dissertation research study exploring the relationship between attachment style, perception of stress, and religious coping. You were selected as a possible participant because you were identified by your agency or a colleague as a cross-cultural worker. Please read this form and ask any questions you may have before agreeing to be in the study.

This study is being conducted by Laurie Anne Tone, a Ph.D. candidate in the Center for Counseling and Family Studies at Liberty University. Dr. Fernando Garzon is the faculty advisor and chair of the dissertation committee for this study and is also available to answer any questions you may have.

Studies Background Information:
The purpose of this study is to investigate how attachment style affects the perception of stress and how stress affects the style of religious coping. The study seeks to answer several research questions as to how bonding relationships formed with parents or early caregivers (attachment style) affects our functioning as adults when we are under stress and how that stress may affect how we cope religiously.

Procedures:
The attached link provides access to the study. The first page provides an opportunity to agree to participate. If you agree to participate please click the box and the next page will begin 5 different surveys.

There will be two surveys that will measure stress (Perceived Stress Scale (PSS) and CHOPS Stress Inventory). One survey will measure religious coping (Brief RCOPE), and one will measure social desirability (Short Form C Marlowe-Crowne). The last measurement will examine attachment style (Experiences in Close Relationships - Short Form ECR-S). You will then be asked demographic information. It should take approximately 15-20 minutes to complete. Your responses are completely anonymous and there will be no way to link your information to any of your responses. Furthermore, your responses will not be shared with your agency and only the statistics consultant and principal researcher (Laurie Anne Tone) will have access to the data. Each survey is protected by a password and results will be held on a password-protected computer with all identifiable information removed.

At the close of the survey you will be invited to participate in a drawing to win one of ten $25.00 gift certificates to Amazon.com. Your email address for the drawing will not be linked to your responses and winners will be randomly selected. If you win, you will be notified by the email you provide. At the end of the survey, you will also be asked to forward this link to other colleagues or friends also serving cross-culturally. There is a limited time frame for this study,
and the link will only be available for 30 days, so your prompt response is very much appreciated.

Risks and Benefits of Being in the Study:
While no study is without risk this study has been designed to be of minimal risk in that the risks are no more than you might encounter in everyday life or in the taking of a psychological test. It is important that you do not overanalyze any one of the questions and be as honest as you can be. However, some of the questions about stress or relationships may provoke some sad memories or uncomfortable feelings. If you feel you may experience an unexpected emotional reaction by participating, please do not proceed. However, should you proceed and these feelings become unmanageable, please do not attempt to finish the study as your well-being is of utmost importance.

Furthermore, if during the course of the surveys, should you experience any unmanageable symptoms and desire to speak to someone from your agency, please do so. You may also call me at the number provided or write to me by email. I will do my best to connect you with someone who can help you.

Benefits of the Study
While there are no direct benefits to you there are indirect benefits to society. This is one of the first known studies to examine these three factors together. It has the potential to add to the research on cross-cultural workers and provide insight into how these three areas intersect in your personal and professional life. The study also may help those who care for you such as the agency in general, or member care and help them provide appropriate care in specific areas across your career. The study is also introducing a new measurement tool for stress (Chops Stress Inventory) that was designed specifically for this study. It will be compared to a known measurement tool (Perceived Stress Scale). Your participation can add significant data to make appropriate statistical comparison. In fact, the higher number of participants, the stronger this study will be. So your participation as well as you forwarding this to your colleagues or friends is very appreciated. However, if you do receive additional invitations for this study please only answer the survey one time for statistical integrity.

Compensation:
You will not receive payment for your participation but in a way to thank you will be invited to participate in a drawing at the end of the survey for one of ten $25.00 gift certificates to Amazon.com.

Confidentiality:
The records of this study will be kept private. In the dissertation and any sort of report I might publish, I will not include any information that will make it possible to identify a subject. Research records will be stored securely on a password-protected computer and all identifiable data will be removed. Only the researcher and the statistics consultant will have access to the data. Participation in this study is voluntary. Your decision whether or not to participate will not affect your current or future relations with Liberty University. If you decide to participate, you are free to not answer any question or withdraw at any time without affecting those relationships.
Contacts and Questions:
The researcher conducting this study is Laurie Anne Tone. You may ask any questions you have now. If you have questions later, you are encouraged to contact me at the following email: latone@liberty.edu or by phone 615-557-4717. The faculty advisor for this study is Dr. Fernando Garzon and he can be reached at fgarzon@liberty.edu or at (434) 592-4054. If you have any questions or concerns regarding this study and would like to talk to someone other than the researcher or faculty advisor, you are encouraged to contact the Institutional Review Board, 1971 University Blvd, Suite 1837, Lynchburg, VA 24515 or email at: irb@liberty.edu.

Statement of Consent:
To participate in this study you must be at least 18 years of age, be working in a country outside of your home or passport country for at least 3 months. This same consent form along with the following statement will appear in the first page of the survey:

I have read and understood the above information and give my consent to participate in the study. There will be a check box that will be provided, and once clicked, it will open up the actual surveys.

Thank you very much for your willingness to contribute to the advancement of academic knowledge and help further understanding of the interaction of these three factors in your current life setting.

Laurie A. Tone
Ph.D. Candidate
Liberty University
latone@liberty.edu
615-557-4717
CONSENT FORM
Exploring the Relationship between Attachment Style, Stress Perception and Religious Coping
Laurie Anne Tone
Liberty University
Center for Counseling and Family Studies
You are invited to participate in a dissertation research study exploring the relationship between attachment style, perception of stress, and religious coping. You were selected as a possible participant because you were identified by your agency or a colleague as a cross-cultural worker. Please read this form and ask any questions you may have before agreeing to be in the study.
This study is being conducted by Laurie Anne Tone, a Ph.D. candidate in the Center for Counseling and Family Studies at Liberty University. Dr. Fernando Garzon is the faculty advisor and chair of the dissertation committee for this study and is also available to answer any questions you may have.

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At the close of the survey you will be invited to participate in a drawing to win one of ten $25.00 gift certificates to Amazon.com. Your email address for the drawing will not be linked to your responses and winners will be randomly selected. If you win, you will be notified by the email you provide. At the end of the survey, you will also be asked to forward this link to other colleagues or friends also serving cross-culturally. There is a limited time frame for this study, The Liberty University Institutional Review Board has approved this document for use from 4/15/15 to -- Protocol # 2169.041515 and the link will only be available for 30 days, so your prompt response is very much appreciated.
Risks and Benefits of Being in the Study:
While no study is without risk this study has been designed to be of minimal risk in that the risks are no more than you might encounter in everyday life or in the taking of a psychological test. It is important that you do not overanalyze any one of the questions and be as honest as you can be. However, some of the questions about stress or relationships may provoke some sad memories or uncomfortable feelings. If you feel you may experience an unexpected emotional reaction by participating, please do not proceed. However, should you proceed and these feelings become unmanageable, please do not attempt to finish the study as your well-being is of upmost importance.
Furthermore, if during the course of the surveys, should you experience any unmanageable symptoms and desire to speak to someone from your agency, please do so. You may also call me at the number provided or write to me by email. I will do my best to connect you with someone who can help you.

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Compensation:
You will not receive payment for your participation but in a way to thank you will be invited to participate in a drawing at the end of the survey for one of ten $25.00 gift certificates to Amazon.com.

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Contacts and Questions:
The researcher conducting this study is Laurie Anne Tone. You may ask any questions you have now. If you have questions later, you are encouraged to contact me at the following email: latone@liberty.edu or by phone 615-557-4717. The faculty advisor for this study is Dr. Fernando Garzon and he can be reached at fgarzon@liberty.edu or at (434) 592-4054.
If you have any questions or concerns regarding this study and would like to talk to someone other than the researcher or faculty advisor, you are encouraged to contact the Institutional
Statement of Consent:
To participate in this study you must be at least 18 years of age, be working in a country outside of your home or passport country for at least 3 months. This same consent form along with the following statement will appear in the first page of the survey:
I have read and understood the above information and give my consent to participate in the study.
There will be a check box that will be provided, and once clicked, it will open up the actual surveys.
Thank you very much for your willingness to contribute to the advancement of academic knowledge and help further understanding of the interaction of these three factors in your current life setting.
Laurie A. Tone
Ph.D. Candidate
Liberty University
latone@liberty.edu
615-557-4717
Here’s your chance to help the world figure out your stress. :-) If you are a cross-cultural worker, are at least 18 years old, and have been working in a foreign country for at least 3 months, you are invited to participate in an online research survey. This research aims to learn how the areas of attachment style, stress perception, and religious coping affect you in your work overseas. The survey is anonymous and should take about 15-20 minutes to complete. At the end, you will be eligible to win one of 10 gift certificates to Amazon.com. To participate in this research, please click on the link below.

https://www.surveymonkey.com/s/ccworker

This link will be available until May 18, 2015.
Invitation to Participate in Research

If you are a cross-cultural worker, are at least 18 years old, and have been working in a foreign country for at least 3 months, you are invited to participate in an online research survey. This research aims to learn how the areas of attachment style, stress perception, and religious coping affect you in your work overseas. The survey is anonymous and should take about 15-20 minutes to complete. At the end, you will be eligible to win one of 10 gift certificates to Amazon.com.

To participate in this research, please click on the link below. Please forward this invitation letter to others you know who are working in cross-cultural contexts. Please contact me if you have any questions about this research. Thank you very much for your time and help.

Laurie A. Tone
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Liberty University
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