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Anxiety, Attributions, and Marital Quality: A Mediation Model

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Abstract

Marital quality plays a significant role in the physical and mental health of many people. The purpose of this study was to examine anxiety, attributions, and marital quality in a sample of females. The first two hypotheses aimed to assess the relationship between anxiety and marital quality, and the relationship between attributions and marital quality. The primary research question aimed to assess attributions as a mediator in the relationship between anxiety and marital quality. Participants (N = 358) completed a demographic questionnaire, the Quality Marriage Index (QMI; Norton, 1983), the Marital Adjustment Test (MAT; Locke & Wallace, 1959), the Relationship Attribution Measure (RAM; Fincham & Bradbury, 1992), the Marital Attitude Survey (MAS; Pretzer, Epstein, & Fleming, 1991), the State-Trait Anxiety Inventory (STAI; Spielberger, 1983), the Big Five Inventory – Neuroticism subscale (BFI-N; John & Srivastava, 1999), the Perceived Stress Scale (PSS; Cohen, 1994), and the Center for Epidemiologic Studies – Depression (CES-D; Radloff, 1977). The researcher used hierarchical regression analysis to assess the first two hypotheses and structural equation modeling to assess the third research question. Hierarchical regression analyses showed that anxiety and marital quality correlated inversely after controlling for depression, such that higher levels of anxiety correlated with lower levels of marital quality. Additionally, these analyses showed that attributions and marital quality correlated positively after controlling for depression, such that higher levels of positive attributions correlated with higher levels of marital quality. Structural equation modeling analysis provided evidence that attributions mediated the relationship between anxiety and marital quality, such that greater anxiety predicted more negative attributions

which then predicted lower marital quality. Limitations, implications, and future considerations were all addressed.

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CHAPTER ONE: INTRODUCTION

Anxiety, Attributions, and Marital Quality: A Mediation Model

Marriage is "the central relationship for a majority of adults" (Kiecolt-Glaser & Newton, 2001, p. 472), and is a stronger contributor to global happiness than either satisfaction with work or satisfaction with friendships, although the latter's relationship is stronger for women than for men. Marriage has been found to be correlated strongly with lower mortality, better overall happiness, improvements in emotional well-being, and higher survival rates for certain illnesses (Waite & Lehrer, 2003). Relationship health, then, is a significant and underappreciated public health issue (Cordova et al., 2014).

Although marriage has been correlated with various physical outcomes and global happiness, it is *marital quality* that actually plays a significant role in marriage's overall protectiveness. Marital quality is a spouse's general sentiment, or global evaluation, of the marriage that manifests in subjective, evaluative judgments (Fincham & Bradbury, 1987). Marital quality has been shown to be related positively to rate of healing, related negatively to subjective pain levels, blood pressure, and mortality (Wickrama, Lorenz, Conger, & Elder, 1997), as well as psychopathology (Bodenmann & Randall, 2012; Whisman & Baucom, 2012), and has even been found to precede psychiatric illness (Whisman, 2007). Given the myriad of implications, marital quality is a very significant aspect of marriage and health. As such, it is important to understand factors that significantly influence marital quality, such as anxiety and attributions.

Anxiety

Anxiety, or the anticipation of future threats (American Psychiatric Association; APA, 2013) affects approximately 20% of the population at any given point,

approximately 30% over the course of one's lifetime, and approximately 60% more women than men (National Institute of Mental Health; NIMH, 2005). Anxiety is frequently found in conjunction with depression (Scott et al., 2007), has been correlated positively with hypertension, gastrointestinal issues, genitourinary difficulties, and migraines (Harter, Conway, & Merikangas, 2003), and is correlated with an overall higher susceptibility to developing medical diseases such as cerebrovascular disease and atherosclerosis, in addition to gastrointestinal, hypertensive, and respiratory diseases (Bowen, Senthilselvan, & Barale, 2000).

Anxiety is negatively related to a person's self-perceived marital quality, such that individuals with anxiety experience less relationship satisfaction than their non-anxious peers (Clout & Brow, 2016; Gana, Saada, Brox, Kileck, and Cazauvieilh, 2015; McCleod, 1994; Pankiewicz, Majkowicz, & Krzykowski, 2012; Whisman, Uebelacker, & Weinstock, 2004). Anxiety has also been found to be related negatively to global marital quality, such that marital quality was lower when one partner of a dyad reported anxiety or depression (Pankiewicz et al., 2012). Some distinctions may exist between men and women with regard to the experience of anxiety and marital quality. Women with anxiety report significantly lower relationship quality than their non-anxious female peers and than males with anxiety (Gottman, 2015). Additionally, women have been found to experience lower rates of marital quality when their male counterpart had anxiety, although the reverse was not supported (Pankiewicz et al., 2012). In contrast, Gana et al. (2015) reported that males who were partnered with women who experience anxiety had lower marital quality than their peers. Further, a negative relationship was not found for men with anxiety and their female partner's marital quality (Gana et al., 2015). Thus,

there are conflicting findings with regard to the relationship between partner anxiety and marital quality. Additionally, wives' marital quality in heterosexual marriages was related positively with their physical and mental health, but the same strength of the relationship was not found for men (Levenson, Carstensen, & Gottman, 1993).

Anxiety can play a significant role in both self-perceived marital quality and global marital quality. Women were not only more likely to experience anxiety than their male partners, but they were also more likely to experience the negative ramifications of anxiety, such as lower self-perceived marital quality, lower global marital quality, and worse physical health outcomes. While anxiety is a significant factor in marital quality, attributions play a more important role.

Attributions

Attributions are a perceptual filter that result from the underlying conditions of the relationship (Heider, 1958). They function in such a way that the perceiver (oneself) ascribes an actor's (one's partner) behavior to external or internal factors (Karney & Bradbury, 2000). Attributions have been described using a number of terms throughout the literature, including sentiment override (Weiss, 1980), negative interpretation bias (Olthius, Stewart, Watt, Sabourin, & Keogh, 2012), relationship-specific interpretation bias (Finn, Mitte, & Neyer, 2013), and perceived partner responsiveness (Bar-Kalifa et al., 2015). While the specifics of these terms may somewhat vary, the overarching theme remains the same, in that attributions are the explanations that partners give to behavior (Kimmes, Durtschi, Clifford, Knapp, & Fincham, 2015). They play a pivotal role in that incoming information is filtered through a lens that attributes the partner's behavior or

language to external or internal factors, which in turn provides further evidence or refutes the actor's view of the partner's character (McNulty & Karney, 2016).

The relationship between attributions and marital quality has been studied so extensively that Fincham (2001) declared it to be, "possibly the most robust, replicable phenomenon in the study of marriage" (p. 7). Attributions have been associated consistently with individual levels of marital quality (Karney & Bradbury, 2000), but also have a bearing on the relationship as a whole, in that they are correlated positively with global marital quality (Fincham & Bradbury, 1987; Gana et al., 2015; Karney & Bradbury, 2000). While the underlying causes of attributions within relationships are relatively unknown at this point, there has been consensus that negative attributions are associated with lower levels of marital quality, and positive attributions are associated with higher levels of marital quality (Fincham & Bradbury, 1987; Gana et al., 2015; Hawkins, Carrére, & Gottman, 2002; Heffner et al., 2006; Karney & Bradbury, 2000, Kimmes et al., 2015; Notarius, Benson, Sloane, Vanzetti, & Hornyak, 1989).

Changes in attribution style (i.e., moving from negative to positive attributions or vice versa) have been strongly associated with same-direction changes in relationship satisfaction for each spouse (Karney & Bradbury, 2000). For example, when a partner's attributions go from positive to negative, their relationship satisfaction tends to decrease. Attribution style has been found to be more predictive of long-term marital quality than marital quality in the initial stages of a relationship; initial marital quality has not been found to predict future marital quality (Karney & Bradbury, 2000). Attributions can be seen as protective, such that positive attributions predict viewing partner behavior as situational and temporary, whereas partners in distress tend to have negative attributions

that are global and enduring (Fincham & Bradbury, 1987). They are also protective in that having positive illusions, such as marital idealization (rose-colored glasses, positive attributions, etc.) have been associated with both relationship satisfaction and commitment levels (Gana et al., 2015).

Attributions serve as the perceptual lens through which individuals view partner behavior. They play a significant role in self-perceived and global marital quality and are stronger predictors of future marital quality than marital quality itself. They have been found to be directly associated with increases and decreases in current marital quality, such that when attributions change, marital quality changes in that same direction, as well.

Attributions and Anxiety

Anxiety and attributions both have been found to be significant variables with regard to predicting marital quality. To date, there has been very little research published regarding the relationship between attributions and anxiety. From the aforementioned findings, one can assert that a negative relationship exists between anxiety and marital quality (Clout & Brow, 2016; Gana et al., 2015; McCleod, 1994; Pankiewicz et al., 2012; Whisman et al., 2004), and that the relationship between negative attributions and marital quality is well established (Fincham & Bradbury, 1987; Gana et al., 2015; Hawkins et al., 2002; Heffner et al., 2006; Karney & Bradbury, 2000, Notarius et al., 1989). What one cannot confidently assert is the direction of the relationship between attributions and anxiety.

Several studies have assessed anxiety and attributions as variables implicated in marital quality, but these studies have been conducted in different ways and garnered

different findings. For example, Waldinger and Schulz (2006) treated emotions (not specifically anxiety) as a mediator between relationship satisfaction and attributions and found that emotional experiences fully mediated the relationship between attributions and relationship satisfaction. Alternatively, there has been evidence that attributions serve as a mediator between anxiety and relationship satisfaction. For example, Finn et al. (2013) studied attributions in the form of a relationship-specific interpretation bias and found that this bias mediated the relationship between neuroticism and relationship satisfaction (Finn et al., 2013). Neuroticism and anxiety are not synonymous, yet they are highly related (Finn et al., 2013; Zinbarg et al., 2016). Additionally, another type of attribution termed perceived partner responsiveness fully mediated the relationship between social anxiety and self-perceived relationship satisfaction after controlling for depression in both men and women (Bar-Kalifa et al., 2015). Lastly, individuals with anxiety sensitivity, or a risk factor for developing anxiety disorders, reported higher levels of negative interpretation bias, which is a tendency to interpret ambiguity or neutral information as threatening (Olthius et al., 2012).

Although the research has been limited, the findings present a clear view that a relationship between anxiety and attributions exists, and that these two factors are related to marital quality. However, the findings do not present a clear view of the direction of the relationship between anxiety and attributions. Most of the published research has focused on attributions as the mediator between anxiety (or a related variable, such as neuroticism) and marital quality (or relationship satisfaction), although there has also been evidence that emotional state (not specifically anxiety) is the mediator for attributions and marital quality. Although there has been research on anxiety, attributions,

and marital quality, there has not been a lot. The sparse research coupled with the conflicting findings with regard to the mediator role of attributions, in particular, highlights a need for further study.

Neuroticism

Neuroticism has been linked with attributions and marital quality. Neuroticism is considered a stable personality trait that is characterized by sensitivity to negative stimuli (Abbasi, Rattan, Kousar, & Elsayed, 2018) and has been associated inversely with marital satisfaction (Amiri, Farhoodi, Abdolvand, & Bidakhavidi, 2011) and global evaluations of the marriage (Donnellan, Conger, & Bryant, 2004), as well as correlated positively with negative partner interactions (Donnellan et al., 2004). Overall, neuroticism has been shown to be related inversely to relationship satisfaction, such that as people score higher in levels of neuroticism, their relationship satisfaction decreases (Finn et al., 2013).

Stress

Stress has been linked with both marital satisfaction and relationship perceptions (Falconier, Nussbeck, Bodenmann, Schneider, & Bradbury, 2015; Neff & Karney, 2009). It has been conceptualized as extradyadic and intradyadic stress, each touted as having unique relationships with relationship satisfaction (Falconier et al., 2015), such that extradyadic stress was found to have an indirect effect on marital satisfaction, whereas intradyadic stress was found to have a direct effect on marital satisfaction. Stress has also been reported to have a distinct association with relationship satisfaction for women when compared with men, in that relationship satisfaction was lower for women with higher levels of stress (Neff & Karney, 2009). In general, higher levels of stress have

been correlated with lower levels of relationship satisfaction and more negative perceptions.

Theoretical Model

The theoretical basis for the current study is the Vulnerability-Stress-Adaptation Model of Marriage (VSA; Karney & Bradbury, 1995). Through the VSA model (see Figure 1), Karney and Bradbury (1995) conceptualized marital quality and subsequent dissolution as a result of the interplay between enduring vulnerabilities (i.e., personality, mood), external stressors (i.e., career, finances), and adaptive processes (i.e., coping, attributions). Theoretically, adaptive processes serve as the mediator between the combination of actor enduring vulnerabilities and external stressors and self-perceived marital quality. Marital quality, in turn, predicts marital dissolution (Karney & Bradbury, 1995; Karney, 2010). In other words, enduring vulnerabilities and stressful events indirectly impact marital quality via adaptive processes. For the purposes of this study, enduring vulnerabilities are represented by trait anxiety and neuroticism, adaptive processes are represented by attributions, and marital quality is the outcome (see Figure 2).

Control Variables

Depression will be a control variable. Depression has been a consistent predictor of current and long-term marital quality and relationship satisfaction where the causal pathways differ for men and women, with women experiencing lower relationship satisfaction prior to depression and men the opposite (Fincham, Beach, Harold, & Osborne, 1997). Further, Gana et al. (2015) found that depressive mood had a bigger impact on marital quality than anxious mood. Anxious and depressive moods have been

shown to account for 29% of the variance in men's relationship quality and 24% of the variance in women's relationship quality (Gana et al., 2015). In order to assure that depression is not confounding the research, it is important that it is measured and controlled for during data collection and analysis.

Purpose and Hypotheses

Given the lack of research regarding anxiety and attributions, the main purpose of this study is to assess whether attributions serve as a mediator between trait anxiety and marital quality. This study will target women, as previous research has provided evidence of gender differences in the relationships between anxiety, health, attributions, and relationship satisfaction (Gana et al., 2015; Gottman, 2015; Kiecolt-Glaser & Newton, 2001; Levenson et al., 1993; Pankiewicz et al., 2012). The first hypothesis is that trait anxiety levels will correlate inversely with marital quality after controlling for depression. The second hypothesis is that positive attributions will correlate positively with marital quality after controlling for depression. The third focus is a research question to explore whether attributions will act as a mediator between enduring vulnerabilities (i.e., trait anxiety) and marital quality after controlling for depression.

CHAPTER TWO: LITERATURE REVIEW

There have been well over two million marriages annually in the United States since 2000 (Centers for Disease Control and Prevention [CDC], 2017). There has also been an average of 860,000 divorces annually since 2000 (CDC, 2017), which is an approximate divorce rate of 43%. Interestingly, marriage is a "central relationship" (Keicolt-Glaser & Newton, 2001, p. 472) for a significant portion of people in the United States. Given the sheer volume of people who are currently married, it seems like an important undertaking to understand the role of marriage with regard to physical and mental health. As it stands, marriage has been associated strongly with both mental health and physical health, and accounts for more global satisfaction with life than satisfaction with friendships or career satisfaction (Kiecolt-Glaser & Newton, 2001). Although it may seem marriage in and of itself is protective, it is actually *marital quality* that plays the more significant role. Marital quality, a distinct aspect of a marriage, is a spouse's general sentiment, or global evaluation, of the marriage that manifests in subjective and evaluative judgments (Fincham & Bradbury, 1987). High marital quality has been defined as high levels of self-perceived and reported relationship satisfaction, mostly positive attitudes toward one's partner, and low levels of negative or hostile behaviors (Robles, Slatcher, Trombello, & McGinn, 2014). Conversely, low marital quality is reflected through low levels of perceived and reported satisfaction with the relationship, a mostly negative attitude toward one's partner, and high levels of negative or hostile behaviors (Robles et al., 2014). Unmarried people are happier than those who are unhappily married, and unhappily married partners are likely to experience increased distress when compared with unmarried people (Kiecolt-Glaser & Newton, 2001).

Marital quality is a distinct and significant aspect of marriage in that it is more predictive and protective for partners with regard to their physical health and their mental health.

It is important to note that the research in this area has been conducted primarily on heterosexual couples and with an assumption that gender is binary. The literature included in this research reflects that trend but is not reflective of the full scope of the researcher's interest in relationships or beliefs about same-gender relationships or gender identity.

Marital Quality and Health

Marital quality is a mediator between marriage and physical health outcomes. It has a significant relationship via direct and indirect pathways to physical health and a variety of internal systems including, but not limited to, immunological, endocrinological, neurologic, and cardiovascular (Kiecolt-Glaser & Newton, 2001). In a meta-analysis of 64 articles, Keicolt-Glaser and Newton (2001) found when relationships were poor, troubled, or had low levels of marital quality, individuals within the relationship were more likely to experience negative physical and mental health issues than their non-troubled, married peers. Marital quality has been found to be related inversely to mortality, periodontal disease, rheumatoid arthritis, and blood pressure (Kiecolt-Glaser & Newton, 2001). Their meta-analysis included the search terms marital satisfaction, marital conflict, marital quality, marital adjustment, and marital interaction and they searched articles published between 1990 and December of 1999. It is a thorough and robust meta-analysis, but the literature is somewhat dated, and their search terms did not include the term relationship or any of its variants, which limited their findings. On the other hand, Robles et al. (2014) conducted a more recent meta-analysis

over 126 empirical and published articles on relationship quality, marital quality, and physical health from the past 50 years. However, their findings and the focus of their study was not to review marital quality and health. Rather, it was to study the mediating pathways between health and marital quality; thus, there is less emphasis and less reported on their meta-analysis. However, Robles et al. (2014) reported that marital quality was related positive to psychological well-being, and that psychological well-being was assessed via indicators that included anxiety and depressive symptoms, self-esteem, happiness, and life satisfaction. Additionally, they reported that links between marital quality and "objective clinical endpoints" (p. 169) were strongest; these endpoints included cardiovascular disease-related outcomes, mortality, wound healing, and ulcer incidence (Robles et al., 2014).

People with higher levels of marital quality have indicated lower rates of disease activity during a rheumatoid arthritis flare up, better sleep, higher self-rated health, fewer physician visits, and fewer physical illness symptoms (Kiecolt-Glaser & Newton, 2001). Those with higher marital quality also showed less cardiovascular reactivity during conflict discussions, less depressive and/or anxiety symptoms, higher levels of self-esteem and life satisfaction, and reported more happiness (Robles et al., 2014). Conversely, women with rheumatoid arthritis were more likely to have reduced disease activity during a flare up when simultaneously reporting less criticism, less negativity, and more positive interactions from their spouse (Kiecolt-Glaser & Newton, 2001). Additionally, women with lower levels of relationship satisfaction and hypertension showed elevated nighttime blood pressure, as well as elevated systolic blood pressure during a conflict discussion. Kiecolt-Glaser et al. (1993) also found that married couples

with higher levels of negative behaviors during a problem discussion reported lower relationship satisfaction than their low negative behavior peers, in addition to showing higher levels of immunological change after 24 hours together. While the above is relevant for all sexes, women have been found to have a higher likelihood of more negative immunological changes compared with men (Kiecolt-Glaser et al., 1993). Levenson et al. (1993) hypothesized that wives bore the burden of a dissatisfied relationship through high autonomic arousal and subsequent physical health issues, and that husbands' tendency to withdraw from relational conflict served as a buffer between their dissatisfaction and physical health.

The role marital quality has played is clear; it correlates negatively with physical health and mental health. Research suggests that marital quality serves a protective role in the relationship between marriage and physical health (Keicolt-Glaser et al., 1993; Robles et al., 2014). Marital quality has been predictive of psychopathology (Hammet, Castañada, & Ulloa, 2016) across different racial and ethnic groups (McShall & Johnson, 2015). The strongest relationship between low marital quality (or marital distress) and psychiatric disorders was for generalized anxiety disorder (Whisman, 2007). Thus, it is crucial that we further understand the role anxiety plays with regard to the experience of marital quality.

Anxiety and Marital Quality

Anxiety affects up to approximately 19.1% of the United States (U.S.) adult population, (NIMH, 2017). Over the course of one's lifetime, 31.1% of U.S. adults will experience anxiety, and the prevalence of anxiety for women was reported at 23.4% compared with only 14.3% for men (NIMH, 2017). Twenty-three percent of anxiety

cases are considered "severe" (equating to 4.1% of the U.S. adult population). The American Psychiatric Association (APA; 2013) has defined anxiety disorders as,

> disorders that share features of excessive fear and anxiety and related behavioral disturbances. *Fear* is the emotional response to real or perceived imminent threat, whereas *anxiety* is anticipation of future threat. Obviously, these two states overlap, but they also differ, with fear more often associated with surges of autonomic arousal necessary for fight or flight, thoughts of immediate danger, and escape behaviors, and anxiety more often associated with muscle tension and vigilance in preparation for future danger and cautious or avoidant behaviors (p. 189).

Anxiety disorders, then, have been defined as a combination of biological arousal from an immediate threat (fear) and anticipation of threats (anxiety). Anxiety, in particular, is the focus for this research, but it is important to note the difference between definitions of anxiety disorders, fear, and anxiety. Anxiety can be further conceptualized in two ways; state and trait. States have been purported to be fleeting emotional moments with varying levels of intensity, whereas traits have been described as stable tendencies of people to perceive and react to the world in foreseeable and specific ways (Spielberger, 1983). More specifically, state anxiety has been defined as a fleeting elevation of anxiety in a perceived threatening situation, whereas trait anxiety has been deemed a stable tendency or proneness to anxiety and perception of events as threatening or dangerous (Spielberger, 1983). The two concepts are distinct yet related, in that a person with higher levels of trait anxiety might have stronger episodes of state anxiety in tense situations.

Although there is an abundance of literature on physical health and marital quality, there is little in comparison on anxiety and marital quality (Dehle & Weiss, 2002;

Kasalova et al., 2017; Pankiewicz et al., 2012; Whisman, 2007; Zaider, Heimberg, & Iida., 2010). In a recent meta-analysis, Kasalova et al. (2017) consolidated 73 published articles regarding anxiety and marital satisfaction in order to centralize common issues within a partnership where one or both people have anxiety. Kasalova et al.'s (2017) findings indicated that anxiety is both a precursor to marital dissatisfaction and a result of marital dissatisfaction. They reported on correlates of anxiety that arose from the literature, including struggling with intimacy, a tendency towards dysfunctional communication, and issues with conflict. Kasalova et al. (2017) also found common marital issues with regard to specific anxiety disorders such as panic disorder, generalized anxiety disorder, and specific phobias. Relationship issues were not only common with individuals who had generalized anxiety disorder, but the presence of generalized anxiety disorder was a strong predictor of marital dissatisfaction (Kasalova et al., 2017). In individuals with panic disorder, a higher likelihood of being dependent on their partner or spouse was a common theme. Individuals with social anxiety were found to struggle with establishing romantic relationships and then being vulnerable when in romantic relationships (Kasalova et al., 2017). What Kasalova et al. (2017) neglected to do within their meta-analysis was to expand their search to include social science literature, disregarding robust research on anxiety, attributions, and marital quality. They also failed to report in depth on the articles, instead opting for one or two articles per theme.

Although there are differences between the manifestation of anxiety in a relationship and subsequent levels of marital quality, the role of gender seemed significant in that marital quality differed for women and men when experiencing certain

types of anxiety. McCleod (1994) was one of the first to study the role of anxiety and its implications for marital functioning and satisfaction. Her two-year study was conducted with a total of 611 couples in the Detroit area who were primarily white and married, and involved two interviews, one at the start of the study and one at the two-year mark. With regard to phobic disorder, McCleod (1994) found relationship quality was lower in general. However, there was no association between specific phobia and marital quality for wives (McCleod, 1994), such that those with specific phobia have not been shown to have lower rates of marital quality than their non-phobic peers. However, husbands with phobic disorder had lower levels of self-perceived marital quality, as well as lower levels of perceived marital quality for their wives (McCleod, 1994). Further, with regard to panic disorder, the trend remained the same, in that husbands with higher level of panic disorder reported lower self and partner-reported marital quality. A major flaw with McCleod's (1994) study was that she did not include a measure of anxiety during the first interview; thus, there was no baseline or predictive ability for analyzing her findings with regard to the consistency or trajectory of anxiety.

Pankiewicz et al. (2012) found that the presence of an anxiety disorder in female partners was a significant determinant of self-perceived marital quality, such that they rated their marital quality as much lower than their non-anxious female peers. Pankiewicz et al.'s (2012) study was conducted with 85 couples within which at least one partner was recruited from local psychiatric hospitals or outpatient setting and met the ICD-10 diagnosis criteria for panic or generalized anxiety disorder, which was more reflective of trait anxiety than state anxiety. Approximately half of their sample size had anxiety and thus they split their sample into three groups; a female-anxiety and male-none group, a

male-anxiety and female-none group, and a female-anxiety and male-anxiety group. Their findings indicated that marital quality was highest for the non-anxious female participants, and that self-evaluated marital quality was lowest in groups where both parties had an anxiety disorder. The sample size in Pankiewicz et al.'s (2012) study was small and the findings should not be generalized to other couples, given the lack of discernment between types of anxiety, as well as their recruitment pool. However, women still seem to play a significant role with regard to anxiety and marital quality (Pankiewicz et al., 2012).

In a nonclinical sample of 47 married couples, Dehle and Weiss (2002) sought to explore whether state anxiety, or anxious affect, was influential on daily marital adjustment or quality at both the self-reported level and cross-spouse level. They studied 45 couples and used proximal and distal variables as the context for processing relationship behaviors. Proximal variables are more immediate, subjective, and transitory (such as state anxiety or anxious affect), while distal variables are more stable, such as personality, temperament, and belief systems (Dehle & Weiss, 2002). Although it is currently unknown whether state anxiety is implicated in marital quality, Dehle and Weiss (2002) speculated that spouses who experience tension, nervousness, and an inability to relax may interpret neutral spouse behavior as negative. Allegedly, this negativity would lead to negative affect reciprocity, or responding to negativity with negativity. In other words, state anxiety could alter an individual's perceptual filter for incoming messages and result in a neutral message sounding negative, regardless of the content of the message. Their findings indicated that self-reported anxiety for wives did not predict later decreases in self-reported marital quality or partner-reported marital

quality. However, self-reported anxiety for husbands predicted later decreases in both self-reported marital quality and partner-reported marital quality (Dehle & Weiss, 2002). One of the biggest limitations of this study is that it was conducted on a nonclinical sample and with a short lag (three months) between time one and time two. The sample size was relatively small and homogenous in that it was primarily white and middle class. Their method for assessing anxiety could be reflective of daily stressors rather than anxiety during conflict or partner interactions. Lastly, they did not speculate on any mediating variables between anxiety and marital quality, although they indicated that more research was needed to understand the mechanisms behind the relationship (Dehle & Weiss, 2002).

Although anxiety primarily has been correlated with self-reported marital satisfaction, not partner-reported marital satisfaction (Whisman et al., 2004), there have been exceptions. Findings from 573 primarily white couples where wives met the DSM-III diagnostic criteria for generalized anxiety disorder, phobic disorders, or panic disorder indicated that their husbands reported lower levels of relationship satisfaction when compared with husbands in marriages with non-anxious wives (McCleod, 1994). The presence of generalized anxiety disorders in husbands was not related to decreased marital quality in husbands or wives (McCleod, 1994). Males with anxiety have not been found to report lower levels of self-perceived marriage quality than their non-anxious peers (McCleod, 1994; Pankiewicz et al., 2012); rather, males with anxiety disorders reported lower levels of marital quality *only* when their female partners were affected with anxiety.

Additionally, using a daily diary approach, Zaider et al. (2010) studied 33 heterosexual married or cohabitating couples where the wife met diagnostic criteria for an anxiety disorder, implying a trait-anxiety approach to assessment. Overall, findings indicated a significant positive relationship between wife anxiety and husband daily stress, in that husband stress levels were increased on the days when wives reported higher levels of anxiety. Interestingly, when wives reported higher levels of anxiety, husbands reported less support and availability from their wives, rather than more negative interactions (Zaider et al., 2010). Husbands with wives who had anxiety have also reported a reduced amount of positive interactions in their communication (Zaider et al., 2010), which is significant given that positive affect and interaction is correlated inversely with relationship stability and health (Driver & Gottman, 2004; Gottman, Coan, Carrere, & Swanson, 1998). The limitations of Zaider et al.'s (2010) study include the focus on couples who have sought out couple therapy, as well as exclusion of participants who did not meet the diagnostic criteria for anxiety disorder according to the Diagnostic and Statistical Manual of Mental Disorders (4th ed.; DSM-IV; American Psychiatric Association, 1994). On average, it takes six years for a couple to begin therapy after recognizing issues within their relationship (Kantrowitz & Wingert, 1999), which means that the findings of this research are specific to couples who have reached such a state of distress that they reach out for therapy. Thus, participants who reach out for therapy are not reflective of the larger population, especially of those individuals with anxiety symptoms who do not meet the full diagnostic criteria.

Bar-Kalifa et al. (2015) studied social anxiety and romantic relationships in 86 Israeli couples who had been cohabitating for a mean length of three years and had been

together an average of 4.6 years. Bar-Kalifa et al.'s (2015) participants were tasked with electronically completing a daily diary entry with specific questions/prompts one hour before bed for 35 days. More specifically, Bar-Kalifa et al. (2015) wanted to assess whether social anxiety (reflective of trait anxiety) predicted perceived partner responsiveness, and then whether perceived partner responsiveness predicted relationship satisfaction. Individuals with social anxiety disorders were found to have a higher likelihood of impairment within their romantic relationships, including lower levels of relationship satisfaction when in a relationship (Bar-Kalifa et al., 2015). Additionally, individuals with social anxiety have been found to misperceive their partner's behavior as less responsive than what objective measures would indicate (Bar-Kalifa et al., 2002). While the findings can likely be generalized to other individuals with social anxiety, it is not appropriate to assume similarity across cultures or age groups, or to conflate with state anxiety. Further, it is unclear to what extent the perceived partner responsiveness scores from participants reflected biased perceptions or actual partner responsiveness. Lastly, there were issues with the sample used. The sample used did not meet the clinical criteria for social anxiety but were instead categorized based on the sample's range.

In sum, anxiety has a lifetime prevalence of approximately 31%, meaning that one-third of the population over the course of a lifetime will experience anxiety in some capacity. Women experience higher levels of anxiety than men and individuals with anxiety experience lower levels of relationship satisfaction and marital quality than their non-anxious peers (Bar-Kalifa et al., 2015; McCleod, 1994; Pankiewicz et al., 2012; Whisman et al., 2004; Zaider et al., 2010). Further, the presence of anxiety correlates negatively with self-perceived marriage quality and has been found to be the largest

known determinant of lower marital quality (Pankiewicz et al., 2012). Conceptualizations of anxiety have ranged from panic disorder and phobias to generalized anxiety (Dehle & Weiss, 2002; McCleod, 1994; Whisman, 2007). Individuals with social anxiety have struggled with initiating and maintaining relationships due to a variety of factors, including lack of vulnerability and assertiveness, acting too dependent on their partner, and misperceiving partner behavior as less responsive (Bar-Kalifa et al., 2015; Kasalova et al., 2017). The relationship between social phobias and relationship satisfaction is inverse (McCleod, 1994), and individuals with generalized anxiety have lower marital quality (Whisman, 2007).

Lower levels of relationship satisfaction have been proposed to be a function of one of three things. First, the presence of anxiety, or the tendency to be on alert and to look for threats, has been found to precede the experience of relationship distress (Kasalova et al., 2017; McLeod, 1994). In other words, individuals in the relationship feel anxious and this anxiety is associated with the later development of relationship distress. Second, an individual may start to experience anxiety as a result of relationship distress; thus, the relationship dissatisfaction comes first and is followed by the anxiety (Hammet, Castañeda, & Ulloa, 2016; Kasalova et al., 2017), such that anxiety and depression both increase as marital distress increases. More specifically, Hammet et al. (2016) found that heterosexual newlyweds reported higher levels of anxiety and depression when experiencing higher levels of marital distress. Third, the relationship between anxiety and relationship satisfaction may be bidirectional (Kasalova et al., 2017; Pankiewicz et al., 2012; Zaider et al., 2017), in that marital distress may influence psychopathology and psychopathology may influence marital distress. Regardless of the direction of the

relationship, anxiety and marital quality are related inversely, such that when anxiety is high, marital quality is low. It is important that we understand other factors that influence marital quality as much as possible, including an important concept known as attributions.

Attributions

Attributions have been defined as "the analysis of underlying conditions that give rise to perceptual experience" (Heider, 1958, p. 22). In other words, attributions are a result of conditions of the relationship; they further serve the function of a filter, in that any incoming information is ascribed to either internal or external factors related to the messenger. Attributions have been given a variety of names throughout the literature, including sentiment override (Weiss, 1980), negative interpretation bias (Olthuis et al., 2012), relationship-specific interpretation bias (Finn et al., 2013), and perceived partner responsiveness (Bar-Kalifa et al., 2015). While the specifics of these are slightly different, the overarching theme remains the same, in that they are the explanations partners give for one another's behavior (Kimmes et al., 2015). Attributions and related concepts play a pivotal role in filtering incoming information through a lens that then assigns the partner's behavior or language to external or internal factors, which in turn provides further evidence or refutes the view of their partner's character (McNulty & Karney, 2016). There have been two dimensions of attributions supported in the literature, causal attributions and responsibility attributions, both of which are correlated inversely with relationship quality (Bradbury & Fincham, 1992). Causal attributions are concerned with the explanation given for partner behavior and whether the behavior is seen as internal to the partner, global, and unchanging or stable. On the other hand,

responsibility attributions are concerned with intentionality, motivation (i.e., selfishness), and blameworthiness. Responsibility attributions correlated positively with anger and mediated the relationship between casual attributions and relationship satisfaction (Fincham & Bradbury, 1992).

Sentiment override has been defined as a broad dimension of affection for one's partner and marriage; it is not reflective of an objective response to a situation or behavior (Hawkins et al., 2002). The overall sentiment one has for their partner will outweigh the content of an interaction. Sentiment override can be negative or positive. Positive sentiment override is reflective of giving the benefit of the doubt to the partner during negative interactions, attributing positive experiences to a partner's character as opposed to ulterior motives, and attributing negative experiences to a situation rather than a partner's character (Gottman, 2016). Conversely, negative sentiment override can manifest as partners having a chip on their shoulder during any interaction (Gottman, 2016). Negative sentiment about one's partner overrides any positive traits or actions and may lead partners to receive neutral statements as hostile attacks, due to statements being viewed through a negative lens (Gottman, 2016). Further, Gottman (1998) reported that negative attributions lessen the impact of positive partner behavior and enhance the impact of negative partner behavior. In other words, when a spouse attributes a negative assumption to their partner, it increases the likelihood of further negative assumptions and decreases the likelihood of positive assumptions.

Interpretation biases are generally reflective of individual tendencies to focus on negative or threatening aspects of a situation versus positive or safe aspects of a situation (Weems & Watts, 2005). In terms of the relevant literature, there are two forms of

interpretation bias that have been studied, negative interpretation bias (Weems et al., 2007) and relationship-specific interpretation bias (Finn et al., 2013). Negative interpretation bias is defined as an information-processing error where individuals tend to understand incoming information from partners as threatening, regardless of whether the information was positive, neutral, or negative (Weems et al., 2007). The relationship-specific interpretation bias was developed out of a perceived need for a domain-specific construct that was specific to relationships (Finn et al., 2013). Finn et al. (2013) asserted that interpretation biases can be specific to given situations or contexts, such as a relationship, but did not necessarily expand outside of the context. Previous research would assess interpretation biases regarding relationships using a broad scale, which Finn et al. (2013) indicated was inappropriate due to lack of nuance. The relationship-specific interpretation bias serves a similar function to the negative interpretation bias (perceiving incoming stimuli as threatening), but it is specific to relationships rather than in general. Lastly, perceived partner responsiveness has been deemed a core principle (Bar-Kalifa et al., 2015) for a growing body of relationship research. It is reflective of the perception of partner behaviors, with a special emphasis on one's perception of feeling understood, valued, and cared for, and that one's needs are met. Perceived partner responsiveness (Reis, Clark, & Holmes, 2004) has been seen as a central component for relationship satisfaction, resulting in less defensive reactions and thus less negative affect reciprocity (Bar-Kalifa et al., 2015).

In total, there are different types of attributions, including positive and negative, as well as causal and responsibility (Fincham & Bradbury, 1992), and there have been different attempts at understanding the processes of attributions, including interpretation

biases and perceived partner responsiveness (Finn et al., 2013; Weems et al., 2007). Although the terminology for attributions may vary across journals and disciplines, the underlying concept remains the same. Namely, that attributions are reflective of perceptions for partner behavior, that they are positive or negative, and that they are not indicative of or a response to the immediate content of a conversation or behavior, but an overarching perception or sentiment of the relationship.

Attributions and Marital Quality

Attributions have been correlated positively with marital quality, in that positive attributions have been found to be related to higher levels of marital quality. The evidence in support of this association is unparalleled, rendering it possibly "the most robust, replicable phenomenon in the study of marriage" (Fincham, 2001, p. 7), and also not better accounted for by other factors such as affect of self and partner (Fincham, 2001) or depressive symptoms (Fincham, Beach, & Bradbury, 1989). The level of distress in partners has been strongly associated with the type of attributions they give to partner behavior, such that those with higher levels of distress tend to make more negative attributions for negative events (i.e., global, enduring, blameworthy), and those with lower levels of distress tend to make more positive attributions for negative events (Fincham & Bradbury, 1992). In other words, distressed spouses have been found to be more likely to view negative partner behavior as enduring and global, and positive partner behavior as situational and temporary.

Attributions can be both negative and positive. Even a distorted view of reality, such as marital idealization, has been found to be related positively to marital satisfaction. In a cross-sectional study, Gana et al. (2015) assessed marital idealization, a

distorted view of reality that is positive, with 198 French married or cohabitating couples and found that positive biases were associated with higher levels of marital quality. Gana et al. (2015) also wanted to study whether marital idealization was a mediator between mood and marital quality and to what extent (i.e., full versus partial mediation). Consistent with other findings, they found that self-reported relationship satisfaction was lower for individuals with anxiety and that partner-reported relationship satisfaction was lower for men when their female partners reported anxiety, but the reverse was not true (Gana et al., 2015). Further still, positive illusions such as marital idealization were a better predictor of relationship persistence than individual factors such as personality traits and these illusions were related positively to relationship satisfaction for both self and partner (Gana et al., 2015). Two limitations from this study were that the sample was a non-representative one, thus not generalizable, and data were collected using only self-report measures. Self-report measures are common, but not wholly accurate in that people can easily lie when responding.

In an attempt to understand the role of attributions in marital relationships and marital interactions, Holtzworth-Munroe and Jacobsen (1985) conducted research with 44 couples by splitting them into distressed and non-distressed groups via their Dyadic Adjustment test scores (DAS; Spanier, 1976). During the study, couples were given a battery of assessments including brief vignettes followed by direct or indirect probes for attributions, such as “What is the cause of your spouse’s behavior; why does he/she do this” (p. 1402). Distressed spouses were found to be more likely to engage in distress-maintaining attributions for spousal negative behavior when compared with their non-distressed peers, as well as less likely to engage in relationship-enhancing attributions for

spousal positive behavior (Holtzworth-Munroe & Jacobson, 1985). Additionally, wives were more likely to produce approximately similar amounts of causal attributions regardless of distress level, whereas only distressed husbands were likely to engage in attributional activity and non-distressed husbands were unlikely to engage in any attributional activity (Holtzworth-Munroe & Jacobson, 1985). These findings were similar whether the assessment probe was direct or indirect. While their findings are compelling, one critique is that probing a hypothetical situation may not result in honest or accurate responses. Additionally, participants wrote their responses, thus activating a more cerebral part of their brains and potentially blocking an immediate and semi-conscious response, which is closer to an honest attribution.

Gender has also been shown to play a role with regard to attributions and marital quality. Wives who felt distressed in their relationship were more likely to filter neutral and negative messages through a negative attributional lens, while spouses in non-distressed relationships tended to view neutral or negative messages through a positive attributional lens (Gottman, 1998). For example, rather than assuming the partner is *always selfish*, a non-distressed spouse might assume that a partner is having a bad day (positive causal attribution). The attribution is specific to the situation, rather than a global assessment of their partner's character. Distressed and non-distressed wives have not only been found to generate approximately the same amount of attributions (whether positive or negative), but also have been more likely than husbands to engage in causal attributions for spouse behavior, regardless their level of distress (Gottman, 1998). Conversely, only distressed males were more likely to engage in causal attributions for spousal behavior (Gottman, 1998; Holtzworth-Munroe & Jacobson, 1985) and tended to

generate more negative attributions than distressed wives once relationship conflict was present (Gottman, 1998). In other words, with regard to attributions, wives make the same approximate amount of attributions (whether positive or negative) when distressed or non-distressed. On the other hand, husbands make far fewer attributions when non-distressed, but significantly more negative causal attributions than their wives when distressed.

In another study of 40 couples, Bradbury and Fincham (1992) found gender differences with regard to attributions and distress, in that the relationship between causal attributions and behavior was stronger for distressed wives than non-distressed wives or husbands. During this study, couples were videotaped while trying to come to a mutually agreed upon resolution for a current problem in the relationship. The primary problem was identified through their initial assessment and was then prescribed by the experimenter. Causal and responsibility attributions made up a significant amount of variance for marital satisfaction for wives (Fincham & Bradbury, 1987), although maladaptive responsibility attributions tend to correlate inversely with marital quality (Bradbury & Fincham, 1992).

One last important finding from Karney and Bradbury (2000) was that attributions in the beginning of marriage had significant implications for satisfaction over the trajectory of the relationship. This research was completed in an eight-wave, four-year study with 54 primarily White couples who had been married less than six months when data collection began. For both partners, higher levels of negative causal attributions correlated with lower levels of marital satisfaction. Further, higher levels of negative responsibility attributions correlated with lower levels of marital satisfaction for only

wives. Interestingly, levels of marital satisfaction had no predictive capabilities for future attributions or future marital satisfaction (Karney & Bradbury, 2000). In short, attributions were more predictive of changes over time than marital satisfaction, thus implying that attributions play a significant role in a relationship.

Attributions have been thoroughly supported in the literature as correlated positively with marital quality. Positive attributions were correlated with higher levels of relationship satisfaction or marital quality, whereas negative attributions were correlated with lower levels of relationship satisfaction or marital quality. Attributions present differently based on gender, in that males made fewer attributions overall until a certain level of distress had been reached and females tended to make approximately equal amounts of attributions, regardless of distress level. Ultimately, attributions have been found to be a robust phenomenon that cannot be understated as significant for marital quality.

Attributions and Anxiety

There is ample evidence that anxiety is related inversely with marital quality (Bar-Kalifa et al., 2015; McCleod, 1994; Pankiewicz et al., 2012; Whisman et al., 2004; Zaider et al., 2010) and that attributions correlate positively with marital quality and relationship satisfaction (Fincham, 2001; Gana et al., 2016). What is less well understood is the cause of attributions in romantic relationships (Kimmes et al., 2015). To date, there are three distinct ways that researchers have viewed the relationship between anxiety and attributions. First, attributions have been seen as predictive of or a mediator for the relationship between anxiety and marital quality. Second, emotions have been viewed as the mediator between anxiety and attributions. Third, attributions and anxiety have both

been seen as uniquely predictive of marital quality and related, yet distinct, constructs. There has been little evidence to explain why attributions exist and how they develop, and the evidence is less clear with regard to the relationship between attributions and anxiety with marital quality. More specifically, the direction of the relationship is unclear, as well as the significance of each of the variables (i.e., do attributions account for more marital quality or does anxiety).

Research has indicated that attributions mediate the relationship between anxiety and marital quality. Fincham, Garnier, Gano-Phillips, and Osborne (1995) were among the first researchers to study preinteraction appraisals, which are expectations spouses give to an upcoming interaction with their spouse. Fincham et al. (1995) conducted their study on 92 couples who had been married an average of 5 years. They found that reported affect immediately prior to a problem-solving discussion was correlated positively with marital satisfaction for both husbands and wives. Fincham et al. (1995) also found that a partner's predictions regarding the interaction were positively correlated with marital satisfaction for both husbands and wives. One major limitation of this study is the lack of variety with regard to measures of anxiety and attributions (Fincham et al., 1995).

Kimmes et al. (2015) was interested in understanding the nature of attributions, attachment, and relationship satisfaction over time, and was specifically interested in assessing attributions as a mediator between anxious attachment and relationship satisfaction. They conducted their longitudinal study with a sample of 767 married Germans (Kimmes et al., 2015) and found that pessimistic attributions fully mediated the relationship between relationship satisfaction and anxious attachment. More specifically,

higher levels of anxious attachment for both husbands and wives were related to pessimistic attributions two years later, and pessimistic attributions were correlated positively with relationship satisfaction (Kimmes et al., 2015). They also reported gender differences, in that more pessimistic attributions for husbands was correlated with lower relationship satisfaction for wives a year later, but the reverse was not true (Kimmes et al., 2015). There are a few issues with this study. First, Kimmes et al. (2015) created their own way of assessing pessimistic attributions, and they did so by posing two statements and asking participants to respond to each, including, "When we have a problem, [partner name] only thinks about his/her own needs," as well as, "If I address a problem, it annoys him/her and he/she is angry" (p. 553). Not only is the second statement double-barreled, but one of the main aspects of this study was done using a form of measurement with no previous empirical support. This is an issue in their methodology and thus weakens their findings substantially. Secondly, Kimmes et al. (2015) studied anxious attachment and although this is correlated with anxiety, they are distinct constructs. Lastly, although Kimmes et al. (2015) was interested in assessing for causality, they had no way of doing so and thus the direction of this relationship is not fully known. Clearly, more research in this area is needed.

Alternatively, emotions have been purported to mediate the relationship between relationship satisfaction and attributions. Waldinger and Schulz (2006) studied the emotional experience *during* an interaction with 102 heterosexual, Bostonian couples who had a mean relationship length of 1.9 years. Waldinger and Schulz (2006) asserted that the research on attributions has consistently focused on stable attributions and relationship qualities, as opposed to attributions that vary with emotional states. They

wanted to know whether emotions during an interaction, beyond global sentiment override, fully mediated the relationship between attributions and relationship satisfaction. Couples were recorded discussing a personal incident, and then watched the recording and continually rated their emotional state (i.e., negative or positive) via a self-rated dial when watching. Waldinger and Schulz (2006) found that emotions fully mediated or explained the relationship between attributions and relationship satisfaction. One limitation of this study is that partners were required, per se, to discuss difficult topics, which could have served as a prime for internal tension and thus a skewed internal state. Additionally, there was no measure for video recall other than the self-rating dial when watching one's video.

Olthuis et al. (2012) reported on negative interpretation bias, a form of attributions, and anxiety sensitivity in women and found that both account for unique variance in panic and generalized anxiety symptoms. Although they suggested that while anxiety sensitivity might be a trait that individuals have, negative interpretation bias is a way in which that trait expresses itself, which implied that negative interpretation bias is a result of anxiety sensitivity. Additionally, Olthuis et al. (2012) reported that anxiety sensitivity and negative interpretation bias are distinct yet related constructs. In short, individuals who score high on measures of anxiety sensitivity tend to have higher levels of negative interpretation bias and thus are more likely to interpret ambiguous information in a threatening way.

Finn et al. (2013) asserted that the interpretation bias was central in the "anxiety-related cognitive processing" (p. 201), but deserved more attention within a relationship-specific context. Finn et al. (2013) elucidated that it would be inaccurate to assume

behavior similarity over a variety of relationships and situations, and that a need existed for understanding interpretation bias that was specific to relationships, thus creating the concept of the relationship-specific interpretation bias. After developing a measure to assess a relationship-specific interpretation bias, Finn et al. (2013) established validity and reliability within a sample of 182 primarily female students. They also wanted to assess whether the relationship-specific interpretation bias was a mediator between neuroticism and relationship satisfaction. In a second study of 210 committed couples, Finn et al. (2013) found that neuroticism was related inversely to relationship satisfaction and that the relationship-specific interpretation bias was correlated more strongly with relationship satisfaction than a general interpretation bias. Both the relationship-specific interpretation bias and the negative interpretation bias have been purported to explain the relationship between anxiety and relationship satisfaction. Further, expected partner behavior has been shown to mediate the relationship between affect (not anxiety, specifically) and marital satisfaction (Fincham et al., 1995). Similar to previous findings, expected partner behavior as a mediator held true for men and women differently. For husbands, expected partner behavior was found to mediate the relationship between marital satisfaction and affect for positive affect towards wives, and for negative affect for wives towards husbands (Fincham et al., 1995). Perceived partner responsiveness has also been found to fully mediate the relationship between social anxiety and relationship satisfaction (Bar-Kalifa et al., 2015).

Although the research supporting the relationship between attributions and marital quality or relationship satisfaction is strong, the specific relationship between attributions, anxiety, and relationship satisfaction is not as clear. Some evidence would suggest

attributions mediate the relationship between anxiety and relationship satisfaction (Fincham et al., 1995; Kimmes et al., 2015); other evidence has suggested emotions mediate the relationship between attributions and relationship satisfaction; and still other evidence has suggested the relationships are bidirectional.

Neuroticism, Attributions, and Marital Quality

Neuroticism has been found to be a relatively stable personality trait (Abbasi et al., 2018) characterized by sensitivity to negative stimuli. It has been defined as a tendency to experience certain unpleasant emotions, including guilt, anxiety, anger, and fear (Daspe, Sabourin, Péloquin, Lussier, & Wright, 2013), and further coined as an alias to trait anxiety (Caughlin, Huston, & Houts, 2000). True to form, Karney and Bradbury (1997) asserted that neuroticism has "demonstrated the most consistent associations with marital outcomes over time" (p. 1078), and that higher levels of neuroticism were correlated with lower levels of marital satisfaction and higher levels of dissolution. Further research has found that neuroticism has been found to be related inversely with self-perceived marital quality (Amiri et al., 2011) and global evaluations of marriage (Finn et al., 2013). In a sample of 100 participants in a Tehranian university, Amiri et al. (2011) found that neuroticism and marital satisfaction covaried inversely, in that when higher levels of neuroticism were present, so were lower rates of marital satisfaction. A significant critique of this study is that it has limited information available, so there is no way to know the steps they took to collect the data or the descriptive statistics of their sample.

Karney, Bradbury, Fincham, and Sullivan (1994) were actually the first to study the role of neuroticism, or negative affectivity, with attributions and marital satisfaction

in a sample of 80 couples who had been married an average of 8.6 years. Karney et al. (1994) used structural equation modeling with a variety of questionnaires that couples completed at home and then mailed back. The team first found that partners high in negative affectivity were prone to making negative attributions, which was in line with previous research. They further found that attributions and marital satisfaction were related even after controlling for negative affectivity (Karney et al., 1994). In other words, the relationship between attributions and marital satisfaction remained significant when removing individual negative affectivity. This is significant in that they asserted negative affectivity did not explain the relationship between attributions and marital satisfaction, and they called for more research regarding the role of negative affectivity, attributions, and marital satisfaction. Karney et al.'s (1994) sample did not include individuals with "severely distressed, neurotic, or depressed" (p. 421) partners and their sample of data was at one point in time rather than longitudinal.

Although changes in attribution have generally been correlated with changes in marital quality, this has not been the case for women with high levels of neuroticism. Interestingly, neuroticism has been found to predict rigidity regarding attributions, but not attribution style (Karney & Bradbury, 2000). For these women, changes in marital quality have been found to be related less strongly to changes in attributions. In other words, attributions remained stable regardless of changes in marital quality. Karney and Bradbury's (2000) findings were based on an eight-wave, four-year study of newlyweds who had been married less than six months at the initial start of data collection. A critique of this study, in particular, is that the data collection was completed on individuals who did not have established marriages.

Stress, Attributions, and Marital Quality

Stress has been deemed another variable that influences marital satisfaction and relationship trajectory. Neff and Karney (2009) reported that wives, but not husbands, experienced lower levels of marital satisfaction when experiencing higher levels of stress. Wives who were especially sensitive to external stress also showed evidence of having the sharpest drops in marital satisfaction over four years. Further, Neff and Karney (2009) reported that changes in stress levels for wives correlated positively with changes in perceptions of their relationship, such that these perceptions acted as a mediator between stress and marital satisfaction. Neff and Karney (2009) also suggested that within-person vulnerabilities can influence the ability to separate global stress from relationship stress. Their findings were based on self-report data collected through an eight-wave, four-year study with 82 couples. Approximately 33% of the couples divorced prior to the end of the data collection, but all data was included in the analysis and reporting because Neff and Karney (2009) used a growth curve modeling for analysis. Findings were limited, however, due to the self-report nature of the research. Additionally, there was no controlling or acknowledgement of confounding variables, such as anxiety.

In a sample of 110 heterosexual, Swiss couples, Falconier et al. (2015) reported that relationship satisfaction and depression were associated with intradyadic stress (i.e., between partners), whereas anxiety and physical well-being were associated with extradyadic stress (i.e., daily hassles). However, they also found that for men and women, daily hassles were correlated with intradyadic stress; thus, there may be indirect effects regarding extradyadic stress and relationship satisfaction sans a direct link (Falconier et

al., 2015). Further, they found gender differences among their sample, in that extradyadic stress for women was directly related to intradyadic stress for males and subsequent decreases in relationship satisfaction for males. Falconier et al.'s (2015) participants had been in their current relationship for a minimum of one year, with an average relationship of 18.21 years. Falconier et al.'s (2015) study should not be generalized outside of Switzerland, nor should it be assumed to be reflective of different models of stress. Additionally, their research was built on the systemic-transactional stress model, which is a distinct theoretical model of how stress manifests within relationships. In other words, it should not be generalized outside of this model of stress.

Stress has been evidenced as a variable that is influential with regard to both attributions and marital quality, such that individuals with higher levels of stress have been shown to experience lower levels of marital satisfaction and have altered perceptions of their relationships. Although the variables in these studies are slightly different (i.e., marital satisfaction versus marital quality), the essence of the findings seem significant enough that the research should be included for the purpose of this study.

Theoretical Model

This research is theoretically grounded in the Vulnerability-Stress-Adaptation model of marriage (VSA; Karney & Bradbury, 1995). The VSA model (see Figure 1) was a result of a perceived deficit in marital research, such that marital outcomes had been studied, but the variables related to marital outcomes had not been explored in depth (Karney & Bradbury, 1995). This led to a moderately thorough understanding of the snapshot of marriages, but a shallow understanding of how marriages succeed and fail

over time. Karney and Bradbury (1995) developed the VSA model through their review of four theoretical perspectives of marriage (social exchange theory, behavioral theory, attachment theory, and crisis theory), 115 studies that fell under the umbrella of one of the four theoretical perspectives, and longitudinal studies of marriage that were not associated with any specific theory of marriage (Karney & Bradbury, 1995).

Each of the themes of the VSA model were based on the four theoretical perspectives of marriage in combination with replicated studies and longitudinal studies on marriage. For example, attachment theory informed the role of enduring vulnerabilities based on personal needs and history of each spouse; crisis theory informed the role of stressful events; and behavioral theory informed the role of adaptive processes based on the ways people think about one other, as well as treat and respond to one another (Karney & Bradbury, 1995). Marital quality, then, was purported to be a function of the combination of enduring vulnerabilities, stressful events, and adaptive processes. According to the VSA model, marital quality is influenced by enduring vulnerabilities and stressful events *through* adaptive processes, such that enduring vulnerabilities and stressful events separately and together influence adaptive processes, and adaptive processes predict marital quality. For the purpose of this study, marital quality will be the only construct that is studied as is, whereas attributions will be conceptualized as adaptive processes, trait anxiety and neuroticism will comprise enduring vulnerabilities, and state anxiety and stress will comprise daily stressors (see Figure 2).

Control Variables

Depression will be controlled for this study, as it has been robustly evidenced as being correlated with marital quality (or relationship satisfaction). More than 50% of

people who present with a depressive or anxious episode will also be experiencing (or reporting) symptoms of the other (Hirschfield, 2001). Depression and anxiety are not only frequently comorbid, but they are also both implicated in marital quality and relationship satisfaction. While it has been asserted that anxiety is the largest determinant of marital quality (Pankiewicz et al., 2012), other research has argued that symptoms of depression were most predictive of relationship satisfaction when controlling for anxiety (Rehman, Evraire, Karimiha, & Goodnight, 2015), and that both partners experiencing depression is associated with the lowest levels of marital quality (Whisman et al., 2004). These findings have been further clarified to suggest that anxiety and depression were significant predictors of *husband* marital quality, but depression was not as significant a component for wife marital quality in the presence of generalized anxiety disorder (McCleod, 1994). Whisman et al. (2004) found that one's depression was related inversely to partner marital quality, rather than self-perceived marital quality. Fincham et al. (1997) argued that women's depression is a result of marital quality, whereas husband's depression is a predictor of marital quality. Additionally, depression has been shown to be related to hostile interaction, higher rates of divorce, and disturbed communication (McCleod, 1994). In short, depression plays a significant role in marital quality and health. While that is the case, the researcher is not attempting to study depression along with anxiety. The researcher will control for depression to the extent possible during data analysis due to the significant role it has played (and continues to play) in marital quality and relationship research.

Research Statement and Purpose

The purpose of this research is multifold, although the main priority is the assessment of whether attributions serve as a mediator between trait anxiety and marital quality. If they do, this would provide specific evidence for the VSA model (Karney & Bradbury, 1995), as well as further understanding of marital quality in relationship research. This study will target women, given the consistency with which gender differences have been presented in the literature on marital quality and health (Kiecolt-Glaser et al., 1993; Levenson et al., 1993; Rendall, Weden, Favreault, & Waldron, 2011), anxiety and marital quality (Driver & Gottman, 2003; Gottman et al., 1998; McCleod, 1994; Pankiewicz et al., 2012; Zaider et al., 2010), and attributions and marital quality (Bradbudy & Fincham, 1992; Holtzworth-Munroe & Jacobson, 1985).

Hypothesis one is that trait anxiety and marital quality correlate negatively after controlling for depression. This is in line with previous research on the negative relationship between anxiety and marital quality. Hypothesis two is that positive attributions will correlate positively with marital quality after controlling for depression. The third purpose and main focus of this study is a research question to assess whether attributions serve as a mediator between trait anxiety and marital quality after controlling for depression.

Chapter two has consolidated research on marital quality and its implications for health, anxiety, attributions, and the relationship between them all. This has included basic definitions on marital quality and anxiety, as well as a more umbrella definition for attributions. The VSA model was proposed as a theoretical grounding for the study, and depression was discussed as a control variable. The purpose of this research is to confirm two hypotheses related to anxiety, marital quality, and attributions, and to examine a

research question designed to explore whether attributions serve as a mediator between anxiety and marital quality while controlling for depression.

CHAPTER THREE: METHODOLOGY

Participants and Procedure

To be included in the study, participants had to identify as women, aged 18-65, and be in a committed relationship, including marriage, civil union, engagement, or exclusively dating. Participants had to be living with their relationship partner. This study was conducted with approval of the Institutional Review Board from the University of Missouri – Saint Louis. Participants were recruited nationally, and recruitment took place in various forms. Potential participants were contacted via listservs, online forums (such as Reddit, Tumblr, Facebook, Twitter, and The Knot), anxiety self-help groups, Craigslist advertisements, Amazon MTurk, and snowball sampling. Through the various modalities, participants were provided a link to the online survey that began with informed consent. At the end of the survey, participants were provided with an option to enter a separate raffle to win one of six $50 Visa gift cards.

Measures

Demographic Questionnaire

This questionnaire collected information on each participant's age, gender, ethnicity, subjective social class, sexual orientation, relationship status, relationship length, cohabiting status, education level, and region where currently living.

Marital Adjustment Test (MAT)

The MAT (Locke & Wallace, 1959) is a 15-item, sef-report measure used to assess marital satisfaction using a weighted-scoring system. The MAT employs a variety of scales within the measure, including a 6-point Likert-type scale ranging from 0 (*always disagree*) to 5 (*always agree*) for items such as "handling of family finances" and

"friends," as well as forced-choice responses that are unique to the question, such as, "In leisure time do you generally prefer to be "on the go" ___, to stay at home ___?" Higher scores indicate higher levels of relationship satisfaction. The MAT was reported as having strong reliability through split-half technique (.90) and evidence of construct validity (Locke & Wallace, 1959) in a sample of 236 predominantly White, educated subjects with a mean length of marriage slightly over five years.

Quality Marriage Index (QMI)

The QMI (Norton, 1983) is a 6-item, self-report measure used to assess relationship satisfaction. The QMI employs a 7-point Likert-type scale for five questions ranging from 1 (*very strong disagreement*) to 7 (*very strong agreement*) and a 10-point Likert-type scale for one question ranging from 1 (*very unhappy*) to 10 (*perfectly happy*). Sample items include, "We have a good marriage" and, "My relationship with my partner makes me happy." Higher scores indicate higher levels of relationship satisfaction. The QMI showed evidence of reliability (Cronbach alpha was .94 and Pearson's coefficient was .93) with the Kansas Marital Satisfaction Scale in a sample of 113 conservative couples (Calahan, 1997).

Relationship Attribution Measure (RAM)

The RAM (Fincham & Bradbury, 1992) is a 6-item, self-report measure that assesses causal attributions and responsibility attributions. Causal attributions are reflective of partner behavior as global or specific, whereas responsibility attributions are reflective of how partner behavior is perceived to be motivated, the level of blameworthiness for the partner, and partner intention. Distressed partners make causal global attributions for negative behavior, causal specific attributions for positive

behavior, and negative responsibility attributions (Fincham, Beach, & Nelson, 1987). The RAM employs a 6-point Likert-type scale ranging from 1 (*disagree strongly*) to 6 (*agree strongly*). Participants are given eight vignettes and then asked to indicate how strongly they agree with statements such as, "The reason my husband criticized me is *not* likely to change," and, "My husband's behavior was motivated by selfish rather than *un*selfish concerns." Higher scores reflect more negative attributions on both dimensions. The two subscales of the RAM correlated highly with a measure of marital satisfaction in a sample of 50 married couples (for wives, $r = .90$, for husbands, $r = .95$). In the same sample, the Cronbach alphas were as follows: causality for wives = .73 and for husbands = .85; responsibility for wives = .90 and for husbands = .89). The researcher modified language within this scale from "husband" to "partner" for inclusivity of same-gender relationships and committed, but not married partners. No other changes were made.

Marital Attitude Survey (MAS)

The MAS (Pretzer, Epstein, & Fleming, 1991) is a 39-item, self-report measure that assesses dysfunctional attributions across eight relationship domains. For the purpose of this research, only two domains with a total of 12 questions will be used; Attribution of Malicious Intent to Spouse (eight questions) and Attribution of Causality to Spouse's Behavior (four questions). These two domains were chosen due to their similarity with responsibility and causal attributions. The MAS employs a 5-point Likert-type scale ranging from 1 (*strongly agree*) to 5 (*strongly disagree*). Sample items include, "My partner doesn't seem to do things just to bother me," and, "If my partner did things differently we'd get along better." Certain items are reverse scored and lower scores reflect endorsement of malicious intent and/or causality within the partner. In a sample of

156 participants married for an average of 11.9 years and with a mean age of 37.2, alpha coefficients were .72 for causality to spouse's behavior and .93 for malicious intent (Pretzer et al., 1991). In that same sample, Pretzer et al. (1991) indicated construct validity through correlations with each domain and other relevant measures.

Big Five Inventory – Neuroticism subscale (BFI-N)

The BFI-N (John & Srivastava, 1999) is an 8-item subscale of the 44-item BFI that measures neuroticism, or emotional stability. The BFI-N employs a 5-point Likert-type scale ranging from 1 (*disagree strongly*) to 5 (*agree strongly*). Participants indicate how strongly they agree or disagree with statements regarding oneself, such as, "Is relaxed, handles stress well," and, "can be tense." Higher scores reflect higher levels of neuroticism. The BFI-N showed evidence of adequate reliability (Cronbach's alpha = .84) in a sample of 462 undergraduate students (61% female), as well as good evidence of convergent validity with two additional measures of personality (r = .90 for both; Costa & McCrae, 1992; Goldberg, 1992) in the same sample.

State-Trait Anxiety Inventory (STAI)

The STAI (Spielberger, Gorsuch, Lushene, Vagg, & Jacobs, 1983) is a 40-item, self-report measure, comprised of two 20-item subscales; one subscale assesses state anxiety and the other subscale assesses trait anxiety. The STAI employs a 4-point Likert-type scale ranging from 1 (*not at all*) to 4 (*very much so*). Example items from the state anxiety subscale include "I feel calm" and "I feel upset." Participants are directed to indicate how they feel "*right now*" when completing the state anxiety subscale. Example items from the trait anxiety subscale include "I am content" and "I am inadequate." Participants are directed to indicate how they feel "*generally*" when completing the trait

anxiety subscale. For both subscales, multiple items are reverse scored and higher scores indicate higher levels of anxiety. The STAI-trait subscale has shown evidence of good reliability in a sample of college students (ranging from .73 to .86). The STAI-state subscale did not show good test-retest reliability, which was expected given the nature of what it measures. Overall, the alpha coefficients for the state and trait subscales were .92 and .90 (Spielberger, 1983) in samples of working adults, college students, and high school students. Spielberger (1983) also reported high correlations (ranging from .85 to .73) with trait anxiety and other measures of anxiety, such as the IPAT Anxiety Scale (Cattell & Scheier, 1963) and the Taylor Manifest Anxiety Scale (Taylor, 1953), providing evidence of construct validity. For the purposes of this study, the STAI-trait subscale assessed an aspect of enduring vulnerabilities, whereas the STAI-state subscale assessed an aspect of daily stressors.

Perceived Stress Scale (PSS)

The PSS (Cohen, Kamarck, & Mermelstein, 1983) is a 10-item, self-report measure that assesses an individual's perception of stress over their last month and whether participants find their lives unpredictable, uncontrollable, and overloaded. The PSS employs a 5-point Likert-type scale ranging from 0 (*never*) to 4 (*very often*); total scores range from 0 to 16 and higher scores indicate higher levels of stress. Items 4, 5, 7, and 8 are reverse scored (e.g., 0 = 4, 1 = 3, 2 = 2). Participants indicate how strongly they agree with statements such as, "In the last month, how often have you felt that you were on top of things" and "In the last month, how often have you been able to control irritations in your life?" The PSS has been associated with greater vulnerability to life-elicited depressive symptomology and more colds, thus evidencing validity with a sample

of 2,387 primarily White individuals (Cohen et al., 1983). Additionally, the PSS shows evidence of reliability through correlations with stress measures and self-reported health and health service measures (Cohen et al., 1983).

Center for Epidemiologic Studies Depression Scale (CES-D)

The CES-D (Radloff, 1977) is a 20-item, self-report measure that assesses an individual's level of depression over the past week. The CES-D employs a four-point Likert-type scale ranging from 0 (*rarely or none of the time*) to 3 (*most or all of the time*); total scores range from 0 to 60 with higher scores indicating higher levels of symptomatology. Scores above 16 are considered of clinical significance. Sample items include "I thought my life had been a failure," and "I talked less than usual." Items 4, 8, 12, and 16 are reverse scored. The CES-D showed evidence of high internal consistency (.85 and .90) in general and in patient populations and high validity through clear discrimination between general and patient groups (Radloff, 1977). Further validity was evidenced through high correlations (.69 to .75) with the Hamilton Clinician's Rating scale (Radloff, 1977).

Data Analysis Plan and Hypotheses

Upon completion of data collection, the researcher engaged in data cleaning, including identifying and removing outliers, assessing the nature of missing data, and checking for assumptions of normality, homogeneity of variance, linearity, and independence (Tabachnick & Fidell, 2014). The researcher then reported descriptive statistics about the sample.

The first and second hypotheses were assessed using hierarchical regression. A hierarchical multiple regression was appropriate for examining the change in

predictability related to one predictor variable while holding other predictor variables constant (Petrocelli, 2003). The first hypothesis was that trait anxiety levels for women would relate negatively to marital quality after controlling for depression. The predictor variable in question was trait anxiety, the outcome variable was marital quality, and the control variables was depression. The second hypothesis was that women's attributions would relate positively with marital quality after controlling for depression, such that positive attributions would correlate with higher levels of marital quality. The predictor variable was attributions, the outcome variable was marital quality, and the control variable was depression.

The third focus for this study was a research question that was assessed using structural equation modeling (SEM; Ullman, 2013). The research question explored whether attributions served as a mediator between trait anxiety and marital quality while controlling for depression and simultaneously testing the overall strength of the VSA model. SEM is appropriate for use when testing a model or a specific relationship within the model, when there is evidence of complex relationships, as well as when there will be "multiple regression analyses of factors" (Ullman, 2013, p. 731). SEM is a combination of multiple regression analysis and factor analysis and is a good fit for assessing the adequacy of a model (i.e., the VSA model) and the amount of variance accounted for by the independent variables (Ullman, 2013). In this case, the latent variables were the main components of the VSA model, whereas the indicators were the specific measures used to assess each latent variable. The latent variables were enduring vulnerabilities (trait anxiety and neuroticism), adaptive coping (attributions), marital quality, and daily stressors (state anxiety and perceived stress). Ullman (2013) positioned SEM as the "only

analysis that allows complete and simultaneous tests of all relationships" (p. 734), thus making it the most appropriate analysis for this research question.

CHAPTER FOUR: RESULTS

Preliminary Analysis

Preliminary analysis was completed with the dataset, including data preparation, cleaning, and screening. This included renaming and recoding variables, computing subscales and scales, and removing cases that did not meet the criteria or had too much missing data. During data preparation, the RAM (Fincham & Bradbury, 1992) was recoded so that higher scores reflected higher levels of positive attributions. This adjustment resulted in scores that were in alignment with other measures, and also served to help simplify the analysis process.

The initial number of participants in this study was 537. To prepare for data analyses, cases were removed if the participant did not identify as female or transfemale (n = 16), if two of three attention checks were incomplete or inaccurate (n = 87), if participants indicated they were not in a relationship (n = 9), if participants indicated they were not cohabiting with their partner (n = 28), or if consent was not given to participate in the study (n = 11). The researcher included two submission options on the informed consent page for people to click. One option indicated consent to participate and the other indicated no consent to participate. The researcher neglected to include skip logic when setting up the informed consent, such that all participants, regardless of their consent or lack thereof, were able to complete the study. The outcome was that 11 individuals completed the study after indicating a lack of consent and thus were removed during the preliminary analysis. All remaining participants were over the age of 18. Additionally, in conducting a missing variables analysis, participants were removed if they were missing 15% or more of their responses (n = 6). Three participants did not complete the CES-D

scale but did complete all other measures. Their data were used during analyses not involving the CES-D. One participant did not complete the STAI. Likewise, their data were omitted during analyses with the STAI, but used during other analyses.

Descriptive statistics indicated that all participant scores fell between the minimum and maximum values for each scale and subscale. Next, univariate outliers and multivariate outliers were removed from the dataset. Univariate outliers were removed when the Z score was higher than 3.29 or lower than -3.29 (n = 3). Multivariate outliers were removed using the Mahalanobis function and appropriate critical value, which was 29.588 (n = 1). There were no violations with skewness or kurtosis, nor were there any for linearity, homoscedasticity, or normality. The final number of participants was 368.

Next, multicollinearity was assessed among the main variables. No subscales were correlated above .90. Further assessment of multicollinearity for full scales reflected one condition index above 30.0, although it was not paired with two variance proportions of .50 or greater. Due to having multiple related variables in order to use structural equation modeling, the researcher opted to assess multicollinearity specific to variables being assessed with each hypothesis. This included assessing for multicollinearity with anxiety, depression, and marital quality measures, since they were all included in hypothesis one. For this assessment, VIF scores all fell below 3.0 and condition indices did not exceed 13.0, indicating a lack of multicollinearity. When assessing multicollinearity with the variables in the second hypothesis, including depression, attributions, and marital quality, no VIF scores were above 3.0 and no condition indices were above 17.0, indicating that there were no issues with multicollinearity for variables in the second hypothesis.

Among the remaining sample ($N = 368$), ages ranged from 19-72 with 90% of participants falling between the ages of 25 to 58. Participants were exclusively female and varied in ethnicity and sexual orientation; most (84%) identified as Caucasian/White, 9% identified as Asian, and 6% identified as African-American/Black. Additionally, most (75%) identified as exclusively heterosexual/straight, 14% identified as mostly straight/heterosexual, and 7% identified as bisexual.

The researcher assessed whether any demographic variables were correlated with outcome variables of marital quality. Identifying as exclusively straight/heterosexual correlated positively with the QMI ($r = .150$, $p < .001$). Identifying as White correlated positively with the MAS ($r = .223$, $p < .01$). Identifying as Asian correlated negatively with the MAS ($r = -.167$, $p < .01$). Given these correlations, identifying as exclusively straight/heterosexual, White, or Asian were all used as covariates in the main analyses. Overall, the sample reflected higher levels of marital quality and average levels of anxiety when compared with normative data. Means, standard deviations, ranges, and correlations for variables in the model are found in Table 1.

Main Analyses

The first two hypotheses were tested using hierarchical regression analysis and the third research question was tested using structural equation modeling. The structural equation modeling analysis included assessing a measurement model, assessing the proposed structural model, running an alternative model, and using bootstrapping methods to assess for significant indirect effects.

Hierarchical Regression Analysis

The first hypothesis was that trait anxiety and marital quality would correlate inversely after controlling for depression. Two hierarchical regression analyses (see Tables 2 and 3) were conducted to assess this hypothesis using two outcome variables (MAT and QMI). The first analysis used QMI as the outcome variable. In step 1, the demographic variables Caucasian/White, Asian, and exclusively heterosexual/straight were entered as they had all correlated with outcome measures. These variables accounted for 1.4% of the variance of marital quality (QMI) and were not significant predictors of marital quality. In step 2, the control variable depression (CES-D) was entered. This variable accounted for an additional 10.2% of variance and was a significant predictor of marital quality, F (4,311) = 10.13 ($p < .001$). In step 3, the predictor variable anxiety (STAI) was entered. Anxiety accounted for an additional 7.9% of variance and was a significant predictor of marital quality, F (5,310) = 12.51 ($p < .001$). All variables in the model accounted for 19.4% of the variance in marital quality, F (5,310) = 30.43 ($p < .001$). The regression coefficient (as shown in Table 2) was negative, meaning that the relationship between anxiety and marital quality is inverse, such that higher levels of anxiety correlate with lower levels of marital quality.

A second hierarchical analysis was conducted using the MAT as the outcome variable. In step 1, the demographic variables Caucasian/White, Asian, and exclusively heterosexual/straight were entered. These variables accounted for 1.2% of the variance of marital quality (MAT) and were not significant predictors. In step 2, the control variable depression (CES-D) was entered. This variable accounted for an additional 7.6% of variance and was a significant predictor of marital quality, F (4,294) = 7.10 ($p < .001$). In step 3, the predictor variable anxiety (STAI) was entered. Anxiety accounted for an

additional 5.8% of variance and was a significant predictor of marital quality, F (5,293) = 10.01 ($p < .001$). All variables in the model accounted for 14.6% of the variance in marital quality, F (5/293) = 19.84 ($p < .001$). Both analyses for the first hypothesis provide further support that anxiety and marital quality correlate negatively after controlling for depression.

The second hypothesis was that positive attributions and marital quality would correlate positively after controlling for depression. Two hierarchical regression analyses (see Tables 4 and 5) were conducted to assess this hypothesis using two outcome variables (MAT and QMI). The first analysis used the QMI as the outcome variable for marital quality. In step 1, the demographic variables Caucasian/White, Asian, and exclusively heterosexual/straight were entered. These variables accounted for 1.8% of variance for marital quality (QMI) and were not significant predictors of marital quality. In step 2, the control variable depression (CES-D) was entered. This variable accounted for an additional 10.5% of variance and was a significant predictor of marital quality, F (4,298) = 10.40, ($p < .001$). In step 3, the predictor variables for attributions (MAS and RAM) were entered. Attributions accounted for an additional 40.6% of variance in marital quality and was a significant predictor of marital quality, F (6,296) = 55.36 ($p < .001$). All variables in the model accounted for 52.9% of variance in marital quality, F (6.296) = 127.61 ($p < .001$).

The second analysis used the MAT as the outcome variable for marital quality. In step 1, demographic variables Caucasian/White, Asian, and exclusively heterosexual/straight were entered. These variables accounted for 1.4% of variance for marital quality (MAT) and were not significant predictors of marital quality. In step 2, the

control variable depression (CES-D) was entered. This variable accounted for an additional 7.1% of variance for marital quality and was a significant predictor of marital quality, F (4,282) = 6.55 ($p < .001$). In step 3, the predictor variables for attributions (MAS and RAM) were entered. These variables accounted for an additional 34.5% of variance for marital quality and were significant predictors of marital quality, F (6.280) = 35.23, ($p < .001$). All variables in this model accounted for 43% of variance in marital quality, F (6.280) = 84.82, ($p < .001$). The second hypothesis also received support from these analyses, such that positive attributions were found to be correlated positively with marital quality after controlling for depression.

Structural Equation Modeling

The third focus of this study was a research question designed to explore whether attributions serve as a mediator between anxiety and marital quality. This was tested using SEM via the software AMOS version 25. SEM analysis cannot be conducted with missing responses in the dataset, so all cases were removed from the dataset that had any missing responses (N = 110). The final number of participants included in the SEM analysis was 258. Additionally, the decision was made to remove the exogenous variable of stress from the model. Stress and anxiety were highly correlated exogenous variables, such that the PSS and STAI-S (indicators for stress) were highly correlated with the BFI-N and the STAI-T (indicators for anxiety). Further, the measurement model path coefficient between stress and anxiety was very high (.98). Conceptually and statistically, stress and anxiety overlapped too much and thus stress was removed to ensure a better fit. After removing stress, the measurement model results indicated a very good model fit

with indices as follows: χ^2 (9, N = 258) = 10.24, $p < .331$, CFI = .999, TLI = .997, and RMSEA = .023.

After confirmation of model fit with the measurement model, the hypothesized structural model was run along with the additions of depression, exclusively heterosexual/straight, White, and Asian as control variables. Depression was allowed to covary with the exogenous variable of anxiety, given their level of comorbidity. Results from a model fit for the hypothesized structural model were good, with indices as follows: χ^2 (37, N = 258) = 58.9, $p = .01$, CFI = .986, TLI = .979, and RMSEA = .048. The structural model output indicated significant path coefficients between all variables (see Figure 3). Path coefficients for specific relationships were as follows: anxiety and attributions (ß = -.27, $p < .001$), anxiety and marital quality (ß = -.26, $p < .001$), and attributions and marital quality (ß = .52, $p < .001$). The relationship between marital quality and depression was not significant. In other words, the path coefficients indicated that higher levels of anxiety correlated negatively with positive attributions, higher levels of anxiety correlated negatively with marital quality, and positive attributions correlated positively with marital quality. Thirty nine percent of the variance in marital quality is predicted by other variables in this model.

An alternative model was tested where anxiety served as the mediator between attributions and marital quality while controlling for depression. The fit indices for this alternative model were as follows: χ^2 (37, N = 258) = 89.93, p =.00, CFI = .966, TLI = .950, and RMSEA = .075. These fit indices were adequate, but the hypothesized structural model had better goodness of fit. Additionally, two of the path coefficients were smaller when compared with the hypothesized structural model, with specific

relationships and findings as follows: attributions and anxiety (ß = -.07, $p < .05$), anxiety and marital quality (ß = -.21, $p < .01$), attributions and marital quality (ß = .55, $p < .001$). The path coefficient for attributions and marital quality was slightly larger in the alternative model. Similar to the hypothesized structural model, there was no significant relationship found between marital quality and depression. The data provided more support for the hypothesized structural model, in which attributions served as a mediator between anxiety and marital quality.

Finally, bootstrapping tests were performed to assess for indirect effects in the mediation model. This is an appropriate test to use for assessing significant indirect effects (Mallinckrodt, Abraham, Wei, & Russell, 2006). This procedure was done with 1000 bootstrap to compute bias-corrected 95% confidence intervals (BC 95% CIs) for indirect effects. Indirect effects are considered non-significant if zero falls between the lower and upper confidence intervals; in other words, the upper and lower confidence intervals should both be positive or both be negative in value to assert significance in the relationship (Shrout & Bolger, 2002). The indirect effects in this model were significant, supporting the research question that attributions mediated the relationship between anxiety and marital quality (b = -.40, BC 95% CI [-.69, -.19], ß = -.28 x .52 = -.15).

CHAPTER FIVE: DISCUSSION

Marital quality, or one's general sentiment about their relationship, has been found to play a protective role for individuals in relationships, such that higher levels of marital quality were found to be related to more positive outcomes including lower pain levels, lower blood pressure, and higher rates of healing (Wickrama et al., 1997), along with higher rates of personal well-being and lower rates of depression (Proulx, Helms, & Buehler, 2007). It would then seem essential to understand factors that are implicated in marital quality, given the relationships it has with a variety of outcomes. Anxiety is one such factor. Anxiety has been correlated negatively with marital quality, such that higher levels of anxiety are related to lower levels of marital quality (Clout & Brow, 2016; Gana et al., 2015; McCleod, 1994). Additionally, anxiety affects significantly more women than men (NIMH, 2005) and has a larger relationship to marital quality for women when compared with men (Gana et al., 2015; Gottman, 2015; Pankiewicz et al., 2012). Another factor found to be strongly correlated with marital quality is attributions. Attributions, or internal explanations for partner behavior (Kimmes et al., 2015), have been found to play an extremely significant role in marital quality. Fincham (2001) described attributions and their relationship with marital quality as the "most robust, replicable phenomenon" (p. 7) in marital research. However, to date, there has been minimal research on the role of both attributions and anxiety with marital quality. The purpose of this study was to assess the hypothesized mediating role of attributions in the relationship between anxiety and marital quality for females. More specifically, the research question and main analysis assessed whether attributions mediated the relationship between anxiety and marital quality.

This topic is important for a multitude of reasons, not least of which includes the sheer number of people in committed relationships and thus impacted by relational dynamics and marital quality. First, understanding committed relationships and how they sustain or dissolve has long-term, far-reaching effects on mental health, physical health, and life longevity. Additionally, low levels of marital quality are simply unpleasant to experience. Second, this research is important given the implications for both clinicians and educators. Clinicians need to have a methodology or approach that is grounded in research rather than speculation or anecdotal experience. Similarly, educators have a duty to impart data-driven, up to date knowledge to their students. This includes a combination of original, groundbreaking theories along with recent and relevant findings. Lastly, this research adds to specific knowledge about the VSA model (Karney & Bradbury, 1995) by providing further support to three key variables of the model: enduring vulnerabilities, adaptive processes, and marital quality.

Major Findings

The first major finding was in support of the first hypothesis, which was that trait anxiety and marital quality would correlate negatively after controlling for depression. In short, the first finding of this study indicated an inverse relationship between anxiety and marital quality, which was consistent with previous findings that higher rates of anxiety were related to lower rates of marital quality or relationship satisfaction (Kasalova, 2017; Pankiewicz et al., 2012; Zaider et al., 2010). Additionally, depression was a control variable in this hypothesis, given that it has been consistently found to be related inversely with marital quality (Rehman et al., 2015; Whisman et al., 2004). Thus, controlling for depression, greater trait anxiety predicted lower marital quality.

The first finding adds to a body of research that currently supports the inverse direction of the relationship between anxiety and marital quality. In short, when women experienced higher levels of anxiety, they were more likely to experience lower rates of marital quality. This finding is significant not in that it presents new information, but that it adds further support to the existing body of literature. Additionally, the majority of the population has been or will be in a significant romantic relationship at some point in their lives and women, in particular, are more likely to experience anxiety when compared with men (NIMH, 2005). If women were more likely to experience lower rates of marital quality when they experienced anxiety, then this directly impacts clinical conceptualization and treatment. Clinician conceptualization should broaden with this additional knowledge, such that women who come in for anxiety might also be screened for relationship distress or those who come in for relationship distress might also be screened for anxiety. The purpose of additional screening would be to have a thorough understanding of the multitude of factors implicated in marital quality and to adequately address them. Since the impact of relationship dissolution is profound and can be multi-generational, then clinical responsibility entails robust conceptualization from an efficacious perspective. Furthermore, the simple act of imparting knowledge about marital quality can be relieving for clients in that they can feel validated, empowered, and at times better able to depersonalize from it when possible. Rather than think, “This is all my fault. I’m such a failure,” a client might instead think, “Wow, I didn’t realize so many people experience this. I’m glad I’m not alone.”

The second hypothesis was that marital quality and attributions, or the perceptual filter used for incoming information from a partner, would correlate positively after

controlling for depression. More specifically, positive attributions would correlate positively with marital quality after controlling for depression. The findings supported this hypothesis and were consistent with previous research (Fincham, 2001; Fincham et al., 1989; Gottman, 1998; Holtzworth-Munroe & Jacobson, 1985).

Given the strong words from Fincham (2001) regarding the robust nature of attributions and marital quality, this second finding is not surprising. Although the addition of this finding to a rich body of literature might seem insignificant, every addition to the literature helps to further strengthen what exists, as well as add nuance to what has already been found. Aside from being an addition to the literature, this finding is significant given the number of women who are in or have been in romantic relationships in their lives. With this knowledge comes the need for clinicians and educators to deeply understand the role attributions play in marital quality for women. In short, attributions should be incorporated into the work clinicians and educators do on both a conceptual level and a treatment level. Conceptually, clinicians should have a working knowledge of various models of relationships and marital quality. It is the role of the clinician to be able to adequately and succinctly conceptualize and discuss immediate concerns through a lens that encompasses the presenting concern, a relevant theoretical model or models, and the current body of knowledge regarding that concern. This same process should take place, albeit in a slightly different way, for educators. The focus for educators should shift to include rich discussion with students on not only what attributions are, but the impact they have on marital quality and how to address them.

The third component of this study was a research question that aimed to assess attributions as a mediator between trait anxiety and marital quality. In other words, the

research aimed to test whether attributions served as the mechanism through which the relationship existed between trait anxiety and marital quality. The third and final finding of this study was confirmed. In short, attributions, or the perceptual filters we give to incoming information from our partner, explained the relationship between trait anxiety and marital quality. This finding is consistent with some related previous literature (Fincham et al, 1995; Kimmes et al., 2015), although contradictory of other related findings (Waldinger & Schulz, 2006).

This is arguably the most significant finding of the research, given that there has been limited and conflicting research to date on the role of attributions, anxiety, and marital quality in combination. This finding, in particular, seems to indicate that anxiety in and of itself is not solely responsible or predictive of marital quality, but that anxiety primarily impacts attributions, or the explanations given to partner behavior, and those attributions then directly influence marital quality. This not only provides clarity to conflicting research and evidence to a sparse body of literature, but it even more specifically provides direct support to the VSA model (Karney & Bradbury, 1995). Through the VSA model, Karney and Bradbury (1995) posited that both stressful events and enduring vulnerabilities directly influence adaptive processes, which then impact marital quality, which ultimately impacts marital stability. Although this research did not attempt to include all variables in the VSA model, the findings specifically provide evidence for the relationships between enduring vulnerabilities, adaptive processes, and marital quality. Anxiety was conceptualized and treated as an enduring vulnerability, attributions served the role of adaptive processes, and marital quality represented itself. Findings suggested that the relationship between enduring vulnerabilities (anxiety) and

marital quality was mediated by adaptive processes (attributions). Thus, there was evidence to support that Karney and Bradbury (1995) theorized a conceptually sound model for relationships.

Additionally, this finding is significant in that it adds clarity to conflicting literature. More specifically, some findings have indicated that attribution-like concepts mediate the relationship between anxiety or like factors and marital quality (Fincham et al., 1995; Kimmes et al., 2015), while other findings have indicated that emotions mediate the relationship between an attribution-like concept and marital quality (Waldinger & Schulz, 2006). Kimmes et al. (2015) focused their research on assessing attributions as a mediator between anxious attachment style and marital quality and their outcome provided evidence of that relationship. Although Kimmes et al.'s (2015) findings were significant and seem consistent with the findings from this research, it is important to note that although anxious attachment might correlate positively with anxiety, they are distinct components. Similarly, Fincham et al. (1995) found that expected partner behavior served as the mediator between affect and marital satisfaction. Affect is not the same construct as anxiety, nor is expected partner behavior the same concept as attributions, but there seems to be conceptual overlap. Thus, Fincham et al.'s (1995) work did not provide direct evidence to support attributions as a mediator, although it did lay important groundwork. Lastly, Waldinger and Schulz (2006) focused their efforts on emotions, although not specifically anxiety, and whether they were a mediator between attributions and relationship satisfaction. They found that emotions can, in fact, serve as a mediator between attributions and relationship satisfaction. Although the findings from this research cannot provide support for emotional states as a

mediator between attributions and relationship satisfaction, it can be asserted that running the alternative model with anxiety as a mediator was not as good a fit to the data when compared with attributions as a mediator. Additionally, these findings are significant in that they have capacity to directly impact clinical and educator work. Being able to discern between relationship issues and anxiety is a fine line with a lot of nuance, but the more laypeople and professionals think, read, and research, ideally the clearer the line becomes.

Limitations

Like any research study, this study has its limitations. One of the first limitations was the demographics of the sample. The vast majority of the participants identified as White (84%), cisgender (100%), and exclusively straight (75%). In essence, the sample limitations would indicate that one cannot generalize these findings to any relationships outside the realm of straight, White, cisgender females. Furthermore, although the invitation for participation indicated any female within a relationship and living with their partner could participate, the language within the study itself might have been confusing, as the term marriage was utilized within some of the assessments, as well as a reference to husband and wife, which could have resulted in attrition or a general lack of participation from individuals who did not identify with that language.

Secondly, one of the assessments used was philosophically questionable. The MAT (Locke & Wallace, 1959) is and has been widely used. It consistently proves to have good validity and reliability, although this researcher does not agree with some of the basic questions or scoring that are included. The MAT offers a relatively heteronormative line of questioning and also emphasizes certain aspects of a relationship

as more important than others. For example, two questions regarding agreement about physical demonstrations can result in more possible points per question than any other questions about agreement on a variety of topics. The researcher could find no theoretical basis for the discrepancy in allocating points among the questions and disagrees with the notion that physical demonstrations should be worth more points than other aspect of a relationship. Partners can disagree about a multitude of topics and the way with which partners engage in disagreement, or conflict, is far more telling about their marital quality than the topic they disagree on. Gottman (1994) found that the majority (69%) of conflict between both happy and distressed partners was irresolvable, and that the way conflict was handled was the predictor of marital quality and success rather than the topic of conflict. In short, the MAT is a widely used and validated measure for marital quality among many samples, but one that this researcher takes some issue with from a philosophical standpoint.

Lastly, the type of data methodology used for this research is limited. In doing a one-time, self-report assessment, there is little understanding of what participant reporting would look like over time with regard to attributions, anxiety, and marital quality. Individuals can also struggle to report things accurately, whether based on their lack of insight and self-awareness or their discomfort in reporting something perceived as negative. The latter, in particular, might also influence attrition rates with the research, such that the majority of people who completed the survey could have higher rates of marital quality than a broader population sample. Additionally, a one-time assessment might not accurately capture an average stance or experience for partners. For example, if a woman completing this study was two months post-partum, the likelihood of her having

decreased marital quality is significantly higher than a person who has no children or has older children (Lawrence, Cobb, Rothman, Rothman, & Bradbury, 2015). The research did not include any question on the age or number of children, and thus this finding could very well have been a covariate but was not included. Additionally, there are likely a variety of other aspects of being in a relationship that impact marital quality, and those were not included for the sake of focusing on key pieces to the VSA model (Karney & Bradbury, 1995) and other significant covariates.

Implications and Future Research

There are three main implications for these findings. The first is client conceptualization, the second is clinical treatment, and the third is education. Conceptualization is important in that the way clinicians understand and think about their clients directly influences their approach to treatment. When clinicians do not have a thorough understanding of client or patient presenting problems, or when they are conceptualizing information through an ill-informed lens, then their approach to treatment is misguided. In order to be most effective with clients, clinicians need to be informed on recent and relevant research. With regard to these findings, when a female client presents with both anxiety and marital quality issues, then clinician conceptualization should broaden to incorporate attributions, as well as assess the degree to which treatment should focus on the relationship itself, individual treatment, or a combination of the two prior to commencing treatment. Marital quality should be taken seriously and be viewed as indicative of further need for assessment of anxiety and attributions, but not be only seen as an indicator of the relationship itself. In other words, marital quality and anxiety are complex and should be seen as dynamic rather than static

variables that indicate one specific conceptualization. Being aware of the relationships between anxiety, marital quality, and attributions can influence client conceptualization and treatment recommendations and a focus on marriage counseling as a starting point need not be the only or first approach to treatment.

The second implication for these findings is regarding clinical treatment and is a direct result of client conceptualization. Clinicians are responsible for being well informed on recent and relevant research, but that means nothing if not translated into practice. The point of being informed and knowledgeable is to let that knowledge directly impact the work being done with clients. If a female comes in for marital strife and further assessment shows high levels of anxiety, then the clinician conceptual lens should first broaden, followed closely by a more nuanced approach to treatment. Regardless of theoretical grounding, directly approaching a client's marital strife without a broad conceptual lens and the possibility of subsequent conjunctive individual work or psychoeducation about the role of attributions and anxiety in marital quality is doing a disservice to clients. This should not be misconstrued as a blanket statement that every female client presenting with relationship strife should be compelled to start conjunctive individual work, nor should this be seen as a subtle way of blaming one partner for low marital quality. Rather, a client who is going through marital counseling and is continuing to struggle with anxiety should be thought of as a candidate for conjunctive individual treatment at a minimum. The intention of this is merely to ensure that clinicians have a more nuanced approach to treatment after multiple variables are taken into consideration. Additionally, given this research was focused on females, the same implications cannot be made for male. It is the role of the clinician to ensure clients are as

informed as possible about the variables regarding their marital quality, including attributions and anxiety.

The third major implication for these findings is regarding education. It is the duty of the educator to be both informed and elucidative for students. In particular, the mediating role of attributions in the relationship between anxiety and marital quality should be discussed in systems and relationship-oriented classes, as well as during any supervision that is being done with future licensed professionals. Educator knowledge is meaningless unless shared with students in a way that seeks to broaden their conceptual lens and ability or treatment with future clients. The educator role is also one of being and staying informed about recent and relevant research, such that incorporating new findings into current courses or supervision work should be considered standard practice and part of the experience.

Future research should first and foremost seek to explore the mediating relationship of attributions in different populations, including populations that are comprised of primarily people of color, those with same-gender sexual orientations, and gender expansive individuals. More research would provide further understanding and nuance to the VSA model, as well as to the specific role of attributions and the generalizability of these findings. Additionally, future research should seek to conduct a similar study in a cross-sectional, longitudinal fashion. By tracking individuals in relationships over the course of their relationship and starting at different time points, the results could provide far more insight than a one-time, self-report approach. Additionally, future research should expand to include different times throughout the lives of a relationship. In other words, a similar study could be done with new parents, with older

couples, or with newlyweds. These are simple examples of the possible scope of future research.

Future research should also explore the alternative SEM model where anxiety was the mediator between attributions and marital quality. More specifically, given that the measurement model for anxiety as a mediator between attributions and marital quality was good, even though not as good as the model used for this study, it would be interesting to assess for what populations or situations anxiety plays the role of a stronger mediator when compared with attributions. For example, could this hold true for people with developmental trauma and heightened physiological systems? Or could this hold true for males rather than females? Future research should seek to expand on when an alternative model might be better fitting and for what type of sample or population.

Additionally, other factors should be taken into consideration with future research, including the role of daily stressors, which could be related to the number of conflicts between partners and how those partners subjectively experience those conflicts. Might conflict be a factor that fits within the daily stressors variable of the VSA model, which would then have a direct impact on attributions? If conflict is a factor, would it be the style of conflict, the level of toxicity within conflict, the number of conflicts, the conflict topics, or something else entirely? This should be explored with additional research. There are a multitude of additional factors to be taken into consideration with regard to this topic and research, not least of which includes expanding on the current study through replication with various populations, but also includes exploring an alternative model and additional variable such as conflict.

Conclusion

This research has three main findings, two of which added to strong existing bodies of knowledge and one of which answered a research question that had conflicting findings and minimal literature. First, trait anxiety and marital quality were found to be related inversely while controlling for depression. This finding adds to a strong body of research and still has important implications, not least of which included clinical and educator responsibility. The role of anxiety continues to be more significant for females than males both socially and within relationships and should continue to be explored within therapeutic and research realms. The body of literature will continue to grow and become more nuanced, and will hopefully expand to incorporate relevant interventions regarding alleviating anxiety and increasing marital quality. One theoretical approach to anxiety is that it is a bottom up process, such that excessive arousal happens within the hindbrain or midbrain and then expresses in the forebrain through a variety of different mechanisms. Assuming this is accurate, interventions to increase marital quality through anxiety would be geared towards the midbrain and hindbrain. A typical talk therapy or focus on changing one's thoughts might not be as effective a treatment for anxiety as a somatic or neuro-focused approach.

Second, positive attributions and marital quality were found to be related positively while controlling for depression. Given the vastness of the body of research on attributions, this finding was both unsurprising and validating that the current research was done well. One aspect to note is that lack of clarity regarding why attributions exist. There is little, if any, doubt that attributions and marital quality are related. However, there is very little understanding as to why this relationship is so powerful and why attributions are so influential on marital quality. This variable, in particular, needs to be

studied more and beyond the capabilities of a typical self-report assessment. This should be studied through brain imaging software, self-report concurrently with physiological measures, or through another physiological avenue beyond subjective self-report studies. To understand the mechanism of attributions would give researchers, educators, and clinicians a direct look at the underbelly of a powerful variable, as well as a direct avenue for addressing the variable within each respective profession. Further still, converting findings to layperson language would be beneficial in that individuals could understand themselves to a greater extent and directly impact their own marital quality without additional, and sometimes costly, measures such as clinical work.

Lastly, and arguably the most significant finding, this research found evidence to support attributions as a mediator between anxiety and marital quality while controlling for depression, sexual orientation and ethnicity/race. Evidence to support attributions as the mediator between anxiety and marital quality was not only the main research question of the study, but also added clarity and nuance to a limited body of conflicting research and added further support to the VSA model (Karney & Bradbury, 1995). Additionally, each finding has the ability to directly help women, in particular, to achieve higher levels of marital quality, which should correlate with better physical and mental health outcomes. Importantly, there is still information lacking. If anxiety is a conceptualized as a bottom up process for people, then attributions might be seen as a forebrain or cerebral response to those heightened brain states. Without having a deep understanding of where attributions develop, it is hard to speculate on the best interventions. One such intervention might be to simultaneously work to alleviate anxiety through a somatic or neuro-focused mechanism while also addressing the attributions directly through a

cognitive approach. The cognitive approach might not be effective by itself, but when paired with a direct alleviation of anxiety, then the outcome could be more effective. This finding is simply an addition to a small body of research on the three variables of anxiety, attributions, and marital quality. Much more is needed.

Lastly and most importantly, these findings should serve to directly impact researchers, clinicians, and educators on both conceptual and technical realms. It is both clinician and educator responsibility to be intelligent and up to date consumers of research, as well as to be able to impart that knowledge to the population they work with, such as students and clients. It is the researcher responsibility to find gaps in the field and expand on current bodies of knowledge. The combination of these things should lead to a much deeper understanding of the roles of anxiety, attributions, and marital quality, as well as more specific ideas regarding interventions and best practices for working with female partners with anxiety and low levels of marital quality. Ideally, this research is exciting and this researcher hopes to leave the reader with both a sense of urgency to implement findings into clinical or educator life, as well as a drive to learn more about marital quality, attributions, and anxiety.

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Appendix A

Table 1

Mean, Standard Deviation, Range and Zero-Order Correlation Among Study Variables

Variable	Mean	SD	Range Min	Range Max	1	2	3	4	5	6	7	8
1. MAT	114.74	21.69	42.00	151.00	1	.874**	-.284**	-.315**	.600**	-.416**	.345**	.495**
2. QMI	36.14	7.87	10.00	45.00	-	1	-.318**	-.345**	.651**	-.448**	-.419**	.534**
3. BFI-Neurot.	23.45	6.98	8.00	40.00	-	-	1	.570**	-.300**	.575**	-.733**	-.225**
4. CES-D	14.84	12.33	0.00	55.00	-	-	-	1	-.380**	.695**	-.830**	-.323**
5. MAS	45.88	8.87	15.00	60.00	-	-	-	-	1	-.423**	-.402**	.511**
6. STAI.State	36.13	12.18	20.00	72.00	-	-	-	-	-	1	.792**	-.369**
7. STAI.Trait	41.10	12.65	20.00	75.00	-	-	-	-	-	-	1	-.355**
8. RAM	178.03	41.40	74.00	288.00								1

**$p < .01$

Table 2

Hierarchical Regression Analyses for Anxiety Predicting Marital Quality (QMI)

Variable	*B*	*SE B*	ß	*t*	R^2	ΔR^2	*F*	*p*
Step 1								
Exclusively Heterosexual/Straight	1.80	1.01	.10	1.78				
Asian	-.86	.98	-.61	-.88				
Caucasian/White	-.15	.25	-.04	-.60				
					-	-	-	-
Step 2								
Exclusively Heterosexual/Straight	.89	.98	.05	.91				
Asian	-.23	.93	-.02	-.24				
Caucasian/White	-.26	.24	-.72	-1.1				
CES-D	-.21	.04	-.33	-5.98**				
					.115	.102	10.126	.000
Step 3								
Exclusively Heterosexual/Straight	.61	.93	.03	.65				
Asian	-.67	.93	.03	.65				
Caucasian/White	-.29	.23	-.08	-1.2				
CES-D	.04	.06	.06	.66				
STAI	-.16	.03	-.48	-5.5**				
					.181	.079	14.954	.000

Note. N=316. $^{**}p < .001$

Table 3

Hierarchical Regression Analyses for Anxiety Predicting Marital Quality (MAT)

Variable	*B*	*SE B*	ß	*t*	R^2	ΔR^2	*F*	*p*
Step 1								
Exclusively Heterosexual/Straight	5.06	2.91	.10	1.73				
Asian	-1.77	2.84	-.044	-.62				
Caucasian/White	-.05	.73	-.01	-.06				
					-	-	-	-
Step 2								
Exclusively Heterosexual/Straight	2.88	2.84	.06	1.01				
Asian	-.38	2.75	-.01	-.14				
Caucasian/White	-.28	.71	-.03	-.40				
CES-D	-.50	.10	-.28	-4.95**				
					.088	.076	7.102	.000
Step 3								
Exclusively Heterosexual/Straight	1.72	2.77	.03	.62				
Asian	-1.57	2.68	-.04	-.59				
Caucasian/White	-.39	.69	-.04	-.56				
CES-D	.08	.16	.05	.50				
STAI	-.38	.09	-.41	-4.45**				
					.146	.058	10.014	.000

Note. N=299. $^{**}p < .001$

Table 4

Hierarchical Regression Analyses for Attributions Predicting Marital Quality (QMI)

Variable	*B*	*SE B*	ß	*t*	R^2	ΔR^2	*F*	*p*
Step 1								
Exclusively Heterosexual/Straight	2.21	1.05	.12	2.11*				
Asian	-.75	1.03	-.05	-.73				
Caucasian/White	-.22	.26	-.06	-.83				
					-	-	-	-
Step 2								
Exclusively Heterosexual/Straight	.98	1.01	.05	.97				
Asian	-.41	.98	-.03	-.42				
Caucasian/White	-.36	.25	-.99	-.10				
CES-D	-.21	.04	-.34	-5.96**				
					.122	.105	10.396	.000
Step 3								
Exclusively Heterosexual/Straight	1.02	.75	.06	1.37				
Asian	-.16	.72	-.01	-.22				
Caucasian/White	-.60	.19	-.17	-.3.24**				
CES-D	-.04	-.03	-.07	-1.54				
MAS	-.49	.04	.55	11.24**				
RAM	.05	.01	.24	5.12**				
					.529	.406	55.358	.000

Note. N=303. . $^{*}p < .05$, $^{**}p < .001$

Table 5

Hierarchical Regression Analyses for Attributions Predicting Marital Quality (MAT)

Variable	*B*	*SE B*	ß	*t*	R^2	ΔR^2	*F*	*p*
Step 1								
Exclusively Heterosexual/Straight	5.70	2.99	.11	1.91				
Asian	-.69	2.97	-.02	-.23				
Caucasian/White	.27	.77	.03	.35				
					-	-	-	-
Step 2								
Exclusively Heterosexual/Straight	3.11	2.94	.06	1.06				
Asian	-.02	2.87	-.001	-.01				
Caucasian/White	-.05	.75	-.01	-.07				
CES-D	-.48	.10	-.28	-.47**				
					.085	/071	6.545	.000
Step 3								
Exclusively Heterosexual/Straight	2.23	2.33	.04	.96				
Asian	.71	2.27	.02	.31				
Caucasian/White	-.66	.60	-.96	-1.11				
CES-D	-.09	.09	-.05	-1.04				
MAS	1.26	.14	.49	9.13**				
RAM	.12	.03	.23	4.29**				
					.430	.345	35.229	.000

Note. N=287. **$p < .001$

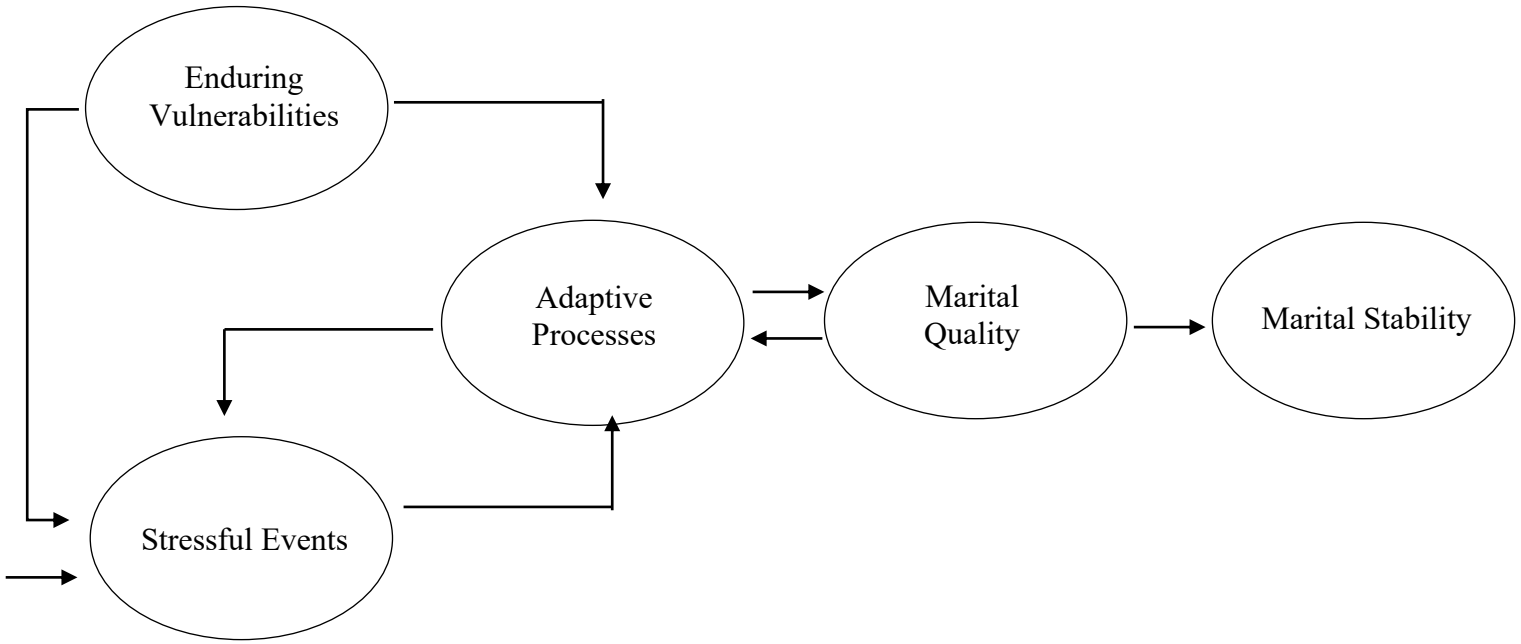

Figure 1. The Vulnerability-Stress-Adaptation Model (Karney & Bradbury, 1995).

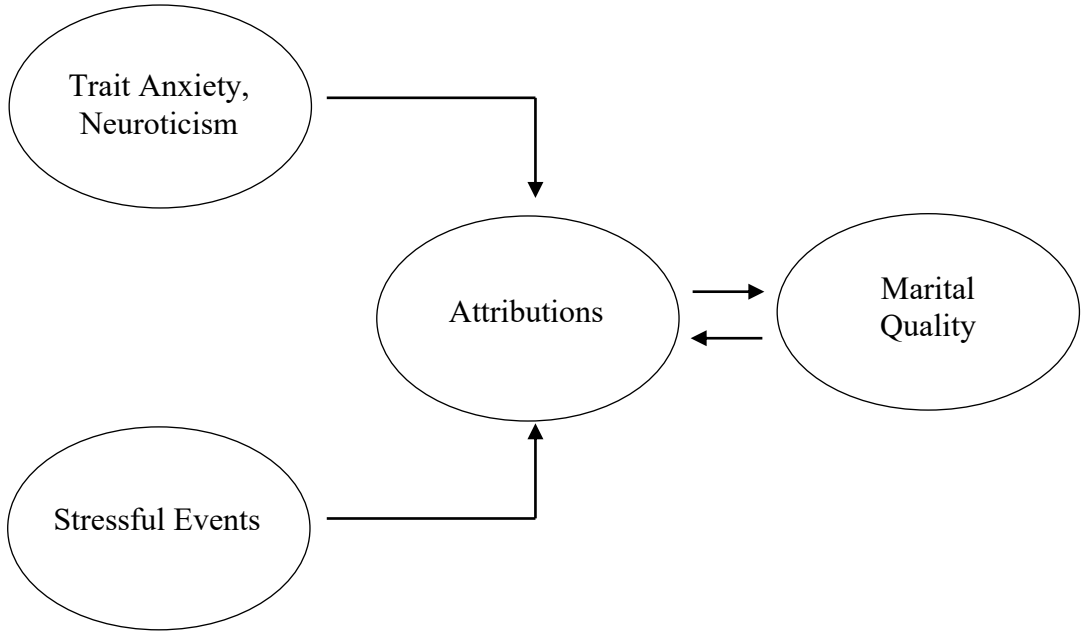

Figure 2. Hypothesized Theoretical Model.

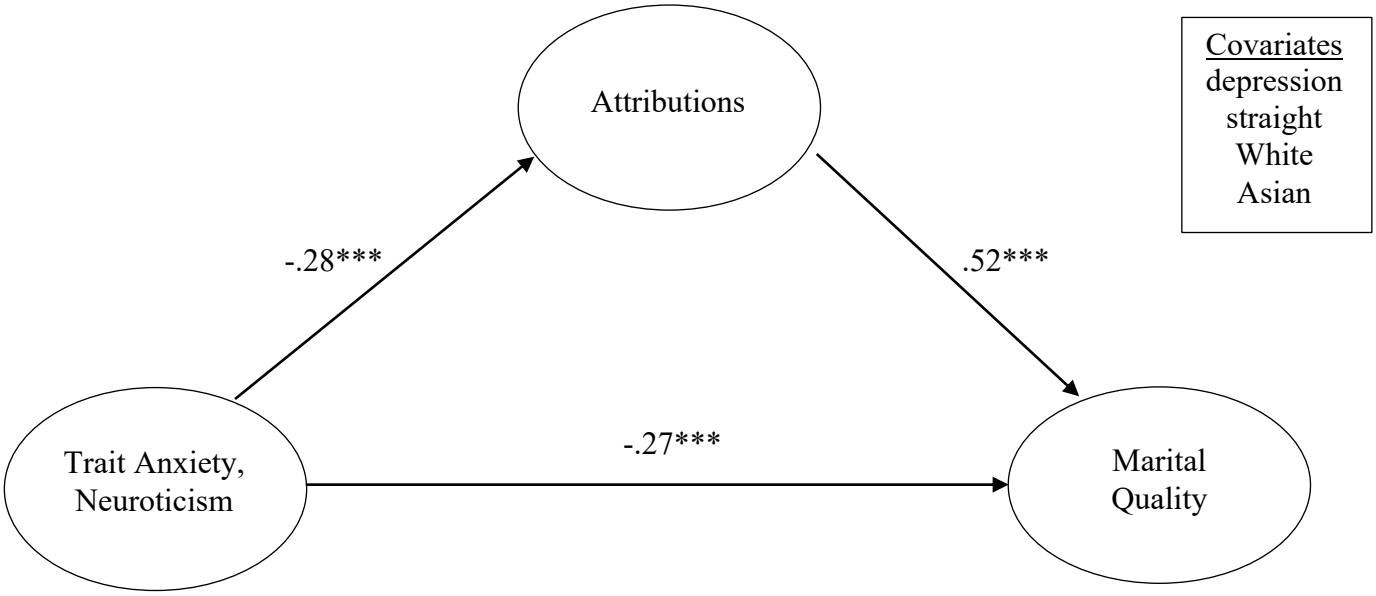

Figure 3. Path Coefficients. This figure shows the path coefficients of the structural model (all path coefficients were standardized).
$^{***}p < .001$

Appendix B

Demographic Questionnaire

Age

Gender
Female
Male
Genderqueer
Transgender - Female to Male
Transgender - Male to Female
Other – please explain

Race/Ethnicity (choose as many as applicable)
American Indian/Native Alaskan
Asian
Black/African-American
Hispanic/Latino/a
Native Hawaiian/Pacific Islander
White/Caucasian
Other – please explain

Sexual Orientation
Exclusively Straight/Heterosexual
Mostly Straight/Heterosexual
Bisexual
Mostly Lesbian or Gay
Exclusively Lesbian or Gay
Pansexual
Queer
Questioning
Asexual
Other – please explain

Current Relationship Status
Single
Dating
Committed Relationship
Engaged
Married
Divorced
Widowed
Remarried
Other – please explain

Do you and your partner currently live together?
Yes
No
Other – please explain

Which most closely describes your current socioeconomic status?
Very low income/poverty level
Working class
Middle class
Upper middle class
Upper class

Which most closely describes your current socioeconomic status over the past five years?
Very low income/poverty level
Working class
Middle class
Upper middle class
Upper class

What is your educational background?
Some high school
Completed high school
Some college
Obtained an undergraduate degree
Some graduate school
Obtained Master's degree
Obtained doctorate/MD/JD

What best describes the area that you live in?
Urban
Suburban
Rural
Semi-Rural

Please indicate your current religious identity.
Agnostic
Atheist
Baha'i
Baptist/Southern Baptist
Buddhist
Catholic
Christian
Hindu
Jewish
Pagan
Protestant (including Methodist, Episcopal, Lutheran)

Spiritual, but not religious
Mormon
Muslim
Native/Indigenous tradition (any tribe/country)
Wiccan
None
Other – please identify

How did you hear about this survey?
Craigslist
Email
Social Media
Amazon
Anxiety Groups
Wedding Groups
Friend
Other – please identify

Marital Adjustment Test (MAT; Locke & Wallace, 1959)

1. Check the dot on the scale line below which best describes the degree of happiness, everything considered, of your present relationship. The middle point, "happy," represents the degree of happiness which most people get from a relationship, and the scale gradually ranges on one side to those few who are very unhappy in their relationship, and on the other, to those few who experience extreme joy or felicity in their relationship.

State the approximate extent of agreement or disagreement between you and your mate on the following items. Please check each column (*using the following Likert-type scale: always agree, almost always agree, occasionally disagree, frequently disagree, almost always disagree, always disagree*)

2. Handling family issues
3. Matters of recreation
4. Demonstrations of affection
5. Friends
6. Sex relations
7. Conventionality (right, good, or proper conduct)
8. Philosophy of life
9. Ways of dealing with in-laws

10. When disagreements arise, they usually result in:
    a. Husband giving in
    b. Wife giving in
    c. Agreement by mutual give and take
11. Do you and your mate engage in outside interests together?
    a. All of them
    b. Some of them
    c. Very few of them
    d. None of them
12. In leisure time do you generally prefer:
    a. To be “on the go”
    b. To stay at home
13. Do you ever with you had not married?
    a. Frequently
    b. Occasionally
    c. Rarely
    d. Never
14. If you had your life to live over, do you think you would:
    a. Marry the same person
    b. Marry a different person
    c. Not marry at all
15. Do you confide in your mate:
    a. Almost never

b. Rarely
c. In most things
d. In everything

Quality Marriage Index (QMI; Norton, 1983)

This questionnaire asks about relationship attitudes and behaviors. The answers will provide information and relationships and will have direct practical application in counseling and marital enrichment programs.
Try to answer the questions as honestly as possible. Do not spend too much time on any one question. Give each question a moment's thought and then answer it. Answer all questions with your partner in mind, unless directed otherwise.

1 (*very strong disagreement*) to 7 (*very strong agreement*)

1. We have a good marriage.
2. My relationship with my partner is very stable.
3. Our marriage is strong.
4. My relationship with my partner makes me happy.
5. I really feel like *part of a team* with my partner.

10-point Likert-type scale

1 (*very unhappy*) to 10 (*perfectly happy*)

6. On the scale below, indicate the point which best describes the degree of happiness, everything considered, in your marriage. The middle point, "happy," represents the degree of happiness which most people get from marriage. The scale gradually increases on the right side for those few who experience extreme joy in marriage and decreases on the left side for those who are extremely unhappy.

Relationship Attribution Measure (RAM; Fincham & Bradbury, 1992)

This questionnaire describes several things that your partner might do. Imagine your partner performing each behavior and then read the statements that follow it. Please circle the number that indicates how much you agree or disagree with each statement, using the rating scale below.

1 (*disagree strongly*)
2 (*disagree*)
3 (*disagree somewhat*)
4 (*agree somewhat*)
5 (*agree*)
6 (*agree strongly*)

Your partner criticizes something you say:

1. My partner's behavior was due to something about them (e.g., the type of person they are, the mood they were in).
2. The reason my partner criticized me is *not* likely to change.
3. The reason my partner criticized me is something that affects other areas of our marriage.
4. My partner criticized me on purpose rather than unintentionally.
5. My partner's behavior was motivated by selfish rather than unselfish concerns.
6. My partner deserves to be blamed for criticizing me.

Your partner begins to spend less time with you.

1. My partner's behavior was due to something about them (e.g., the type of person they are, the mood they were in).
2. The reason my partner spends less time with me is *not* likely to change.
3. The reason my partner spends less time with me is something that affects other areas of our marriage.
4. My partner spends less time with me on purpose rather than unintentionally.
5. My partner's behavior was motivated by selfish rather than unselfish concerns.
6. My partner deserves to be blamed for spending less time with me.

Your partner does not pay attention to what you are saying.

1. My partner's behavior was due to something about them (e.g., the type of person they are, the mood they were in).
2. The reason my partner does not pay attention to me is *not* likely to change.
3. The reason my partner does not pay attention to me is something that affects other areas of our marriage.
4. My partner does not pay attention to me on purpose rather than unintentionally.
5. My partner's behavior was motivated by selfish rather than unselfish concerns.
6. My partner deserves to be blamed for not paying attention to me.

Your partner is cool and distant.

1. My partner's behavior was due to something about them (e.g., the type of person they are, the mood they were in).
2. The reason my partner is cool and distant with me is *not* likely to change.

3. The reason my partner is cool and distant with me is something that affects other areas of our marriage.
4. My partner is cool and distant me on purpose rather than unintentionally.
5. My partner's behavior was motivated by selfish rather than unselfish concerns.
6. My partner deserves to be blamed for being cool and distant with me.

Your partner doesn't complete their chores.

1. My partner's behavior was due to something about them (e.g., the type of person they are, the mood they were in).
2. The reason my partner doesn't complete their chores is *not* likely to change.
3. The reason my partner complete their chores is something that affects other areas of our marriage.
4. My partner doesn't complete their chores on purpose rather than unintentionally.
5. My partner's behavior was motivated by selfish rather than unselfish concerns.
6. My partner deserves to be blamed for not completing their chores.

Your partner makes an important decision that will affect the two of you without asking for your opinion.

1. My partner's behavior was due to something about them (e.g., the type of person they are, the mood they were in).
2. The reason my partner makes this decision without me is *not* likely to change.
3. The reason my partner makes this decision without me is something that affects other areas of our marriage.
4. My partner makes this decision without me on purpose rather than unintentionally.
5. My partner's behavior was motivated by selfish rather than unselfish concerns.
6. My partner deserves to be blamed for making this decision without me.

Your partner doesn't give you the support you need.

1. My partner's behavior was due to something about them (e.g., the type of person they are, the mood they were in).
2. The reason my partner doesn't give me support is *not* likely to change.
3. The reason my partner doesn't give me support is something that affects other areas of our marriage.
4. My partner doesn't give me support on purpose rather than unintentionally.
5. My partner's behavior was motivated by selfish rather than unselfish concerns.
6. My partner deserves to be blamed for not giving me support.

Your partner is intolerant of something you do.

1. My partner's behavior was due to something about them (e.g., the type of person they are, the mood they were in).
2. The reason my partner is intolerant of me is *not* likely to change.
3. The reason my partner is intolerant of me is something that affects other areas of our marriage.
4. My partner is intolerant of me on purpose rather than unintentionally.
5. My partner's behavior was motivated by selfish rather than unselfish concerns.
6. My partner deserves to be blamed for being intolerant of me.

Marital Attitude Survey (MAS; Pretzer, Epstein, & Fleming, 1991)

Please choose the number which indicates how much you agree or disagree with each statement this week, using the rating scale below:

1 (*strongly agree*)
2 (*agree somewhat*)
3 (*neutral*)
4 (*disagree somewhat*)
5 (*strongly disagree*)

1. My partner doesn't seem to do things just to bother me.
2. My partner intentionally does things to irritate me.
3. It seems as though my partner deliberately provokes me.
4. If my partner did things differently we'd get along better.
5. The way my partner treats me determines how well we get along.
6. Whatever problems we have are caused by the things my partner says and does.
7. My partner doesn't intentionally try to upset me.
8. I'm sure that my partner sometimes does things just to bother me.
9. I think my partner upsets me on purpose.
10. I'm certain that my partner doesn't provoke me on purpose.
11. The things my partner says and does aren't the cause of whatever problems come up between us.
12. I doubt that my partner deliberately does things to irritate me.

Big Five Inventory – Neuroticism subscale (BFI-N; John & Srivastava, 1999)

Here are a number of characteristics that may or may not apply to you. For example, do you agree that you are someone who likes to spend time with others? Please choose a number next to each statement to indicate the extent to which you agree or disagree with that statement.

1 (*disagree strongly*)
2 (*disagree a little*)
3 (*neither agree nor disagree*)
4 (*agree a little*)
5 (*agree strongly*)

1. Is depressed, blue
2. Is relaxed, handles stress well
3. Can be tense
4. Worries a lot
5. Is emotionally stable, not easily upset
6. Can be moody
7. Remains calm in tense situations
8. Gets nervous easily

State-Trait Anxiety Inventory (STAI; Spielberger, Gorsuch, Lushene, Vagg, & Jacobs, 1983)

Directions and questions omitted due to copyright.

Perceived Stress Scale (PSS; Cohen, 1994)

The questions in this scale ask you about your feelings and thoughts *during the last month.* In each case, you will be asked to indicate by circling *how often* you felt or thought a certain way.

0 (*never*)
1 (*almost never*)
2 (*sometimes*)
3 (*fairly often*)
4 (*very often*)

1. In the last month, how often have you been upset because of something that happened unexpectedly?
2. In the last month, how often have you felt that you were unable to control the important things in your life?
3. In the last month, how often have you felt nervous and "stressed?"
4. In the last month, how often have you felt confident about your ability to handle your personal problems?
5. In the last month, how often have you felt that things were going your way?
6. In the last month, how often have you found that you could not cope with all the things you had to do?
7. In the last month, how often have you been able to control irritations in your life?
8. In the last month, how often have you felt that you were on top of things?
9. In the last month, how often have you been angered because of things that were outside of your control?
10. In the last month, how often have you felt difficulties were piling up so high that you could not overcome them?

Center for Epidemiologic Studies Depression Scale (CES-D; Radloff, 1977)

Below is a list of ways you might have felt or behaved. Please tell me how often you have felt this way during the past week.

0 (*rarely or none of the time; less than 1 day*)
1 (*some or a little or the tie; 1-2 days*)
2 (*occasionally or a moderate amount of time; 3-4 days*)
3 (*most or all of the time; 5-7 days*)

1. I was bothered by things that usually don't bother me.
2. I did not feel like eating; my appetite was poor.
3. I felt that I could not shake off the blues even with help from my family or friends.
4. I felt I was just as good as other people.
5. I had trouble keeping my mind on what I was doing.
6. I felt depressed.
7. I felt that everything I did was n effort.
8. I felt hopeful about the future.
9. I thought my life had been a failure.
10. I felt fearful.
11. My sleep was restless.
12. I was happy.
13. I talked less than usual.
14. I felt lonely.
15. People were unfriendly.
16. I enjoyed life.
17. I had crying spells.
18. I felt sad.
19. I felt that people dislike me.
20. I could not get "going."