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PTSD Symptomology and Relationship Dysfunction: Is Emotional Reactivity the Culprit?

Kristin Lytle
University of South Carolina - Aiken

PTSD Symptomology and Relationship Dysfunction: Is Emotional Reactivity the Culprit?

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Kristin Lytle

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Abstract

Emotional numbing, a symptom of PTSD, has been found to be strongly associated with relationship dysfunction (Erbes et al., 2011; Monson et al., 2012; Riggs et al., 1998; Solomon et al., 2008). It is thought that emotional numbing can negatively impact relationships, yet there is limited understanding of the mechanisms of emotional numbing. Information processing theory developed by Litz and Gray (2001) suggests that emotional numbing is not a generalized response to all emotions and is actually specific to positive emotions. They believe that people with PTSD actually experience heightened negative emotions which then lead to emotional numbing to positive emotions. The current study sought to examine the links between PTSD symptoms, emotional numbing, and relationship dysfunction by presenting participants who have experienced a trauma with a priming video clip of a couple arguing as a cue. They were then shown IAPS images and asked to rate their emotional response to each image. It was hypothesized that heightened arousal to unpleasant images and decreased arousal to pleasant images would mediate the relationship between PTSD symptoms and relationship dysfunction. Results showed that PTSD symptoms were related to heightened arousal to unpleasant images and decreased arousal to pleasant images, and that relationship satisfaction was also related to heightened arousal to unpleasant images and decreased arousal to pleasant images. Yet, no mediational relationships were found. The results support Litz and Gray's (2001) emotional numbing model and suggest that this type of emotional numbing is related to PTSD symptoms and relationship satisfaction but that future research needs to examine this relationship further to understand the mechanisms of action.

PTSD Symptomology and Relationship Dysfunction: Is Emotional Reactivity the Culprit?

The impact of post-traumatic stress disorder (PTSD) on interpersonal relationships is complex and appears to include severe relationship dysfunction such as those in which domestic violence occurs (Mills & Turnbull, 2004). Because PTSD has a prevalence rate of 3.5% and a risk of experiencing it in one's lifetime of 8.7% (APA, 2013), the toll that PTSD likely has on interpersonal relationships is substantial. PTSD has been linked to decreased intimacy, communication problems, and increased physical aggression, which could be possible explanations, among many, as to why those with PTSD are three to six times more likely to divorce then those without PTSD (Mills & Turnbull, 2004; Monson, Fredman, & Dekel, 2010). Further, the National Vietnam Veterans Readjustment Study found that one third of veterans with PTSD were abusive towards a romantic partner over the course of a year (Jordan et al., 1992; Kulka et al., 1990). This is 2 to 3 times greater than the level of abuse among veterans without PTSD. Although physical aggression is not a symptom of PTSD, symptoms associated with alterations in arousal and reactivity are thought to contribute to an increase in such behaviors. For example, Taft and colleagues (2007) found a positive correlation between PTSD symptoms and trait anger, which is a consistent presentation of anger over time. Trait anger was also linked to physical abuse of a partner. The author's findings suggest that trait anger mediates the relationship between PTSD and violence towards a partner.

PTSD can affect many aspects of a person's life thus not only can relationships with romantic partners suffer, so can those with families and friends (APA, 2013). Mills and Turnbull (2004) suggest that PTSD may alter someone's ability to interact and communicate with other people. This can become difficult for loved ones because of substantial changes in the interpersonal interactions. For example, significant others, who are used to a loving and

affectionate partner, may find a cold and distant partner. Children, who are accustomed to expressions of warmth and acceptance, may instead have an irritable and angry parent (Jordan et al., 1992; Mills & Turnbull, 2004). Important aspects of close relationships, such as building or sustaining emotional connections, understanding one another, and even coexisting together, may become challenging (Mills & Turnbull, 2004; Riggs et al., 1998). Often times people with PTSD may be dealing with other psychiatric disorders as well, making it even more difficult for those in relationships to function successfully (Mills & Turnbull, 2004). Given that PTSD has been consistently associated with relationship dysfunction and that social support is a key factor in the recovery from PTSD (Koenen et al., 2003), it is important to identify the causal mechanisms between PTSD and relationship dysfunction so that effective interventions to target these problems specifically can be developed.

Given the impact that PTSD can have on relationships, the changes in emotions and emotional regulation that occur in people with PTSD have been the focus of much research. Recent findings have shown that increased negative mood states and reduced positive mood states plays a role in PTSD, which has been reflected in the DSM-5 changes. The Diagnostic and Statistical Manual of Mental Disorders (DSM) diagnostic criteria for PTSD changed significantly from the DSM-IV-TR (APA, 2000) to the DSM-5 (APA, 2013). One major change is that PTSD no longer is classified as an anxiety disorder but now falls under the classification of Trauma-and Stressor-Related Disorders. Another change is that the individual must then experience symptoms from each of the four different symptom categories for a minimum of a month, while there were three symptom categories in the DSM-IV-TR. The first symptom category is intrusive symptoms which include persistent distressing memories of the event, having repeated upsetting dreams about the event, and flashbacks. The second symptom cluster

is avoidance which includes avoidance of anything that may remind the individual of the traumatic experience such as activities, people, places, thoughts, and feelings. Diagnosis requires existence of one or more symptoms from the first and second symptom categories. These first two categories are consistent with the DSM-IV-TR and did not undergo much change. The third symptom cluster is negative changes in thoughts or mood. This could involve amnesia about certain details of the traumatic event, persistent negative feelings like anger or guilt, or the inability to feel positive emotions like love or happiness. This category is new and in the DSM-IV-TR, these symptoms were included in the avoidance cluster. Lastly, the fourth symptom category is changes that are noticeable in arousal and reactivity such as hyper-vigilance, sleeping problems, irritability, and increased startle responses. Diagnosis requires the existence of two or more symptoms from the third and fourth categories.

While the majority of the research examining PTSD and its effect on relationships has focused on married couples, PTSD has also been found to be associated with problems with friendships and with non-romantic family relationships (Mills & Turnbull, 2004). For example, Beckham et al. discovered, in 1997, that 75% of veterans admitted to multiple acts of violence and aggression towards others in that year. Furthermore, Alderfer, Navsaria, and Kazak (2009) found high rates of poor communication, problem solving, and family involvement (30-45%) among families with a cancer survivor who has PTSD, which is 20-35% higher than families without these characteristics (Akister & Stevenson-Hinde, 1991). It has become clear that relationship dysfunction is associated with PTSD and, in turn, the need to understand the nature and the cause of this link has become increasingly more urgent.

Relational Problems and PTSD

It is evident that PTSD is linked to negative relational outcomes. However, the majority of research on PTSD and relationship dysfunction is cross-sectional, thus the causal direction of the association remains largely unknown. Because of this, researchers cannot make causal inferences about the association because relationship problems may actually be a contributing factor to the development of PTSD given that social support has been found to reduce the risk of developing PTSD (Charuvastra, & Cloitre, 2008). Additionally, an important point to note is that PTSD cannot be diagnosed with self-report questionnaires which are frequently used in this literature. When self-report questionnaires are utilized, researchers use cut-off scores that are consistent with a diagnosis. Researchers are not indicating that participants do or do not have PTSD, but that they have the number of symptoms required for a diagnosis or that a specific cut-off score has the best specificity and/or sensitivity. While self-report measures are a reasonable measure for severity of PTSD symptoms and can be used as aid for diagnosis, a diagnostic interview is still considered the gold standard (Arbisi et al., 2012).

In recent years, researchers have endeavored to identify and understand the basis of the association between PTSD and relationship dysfunction (Mills & Turnbull, 2004). Each symptom of PTSD appears to have the potential to have a negative effect on relationships. Recent research in this area has sought to discover which symptoms have significant and the strongest associations with negative relational outcomes. Erbes et al. (2011) propose that irritability, which is a part of the arousal criteria in the DSM-V (APA, 2013), could negatively impact communication between partners. They also suggest that an inability to experience positive emotions, a symptom in the *changes in thoughts and moods* symptom cluster, could

cause both people in a relationship to feel disconnected from their partner and the person with PTSD to feel detached in all of their relationships.

Avoidance of feelings may cause distance between partners as well as an inability to be affectionate or loving towards a partner (Mills & Turnbull, 2004). If an individual with PTSD is consistently avoiding discussing certain subjects with their partner or has difficulty or an inability to experience certain kinds of emotions, it could become extremely difficult to foster good communication or an emotional connection. Problems connecting emotionally can lead to decreased feelings of love and intimacy. Changes in mood may cause someone with the disorder to avoid participating in activities significant to the relationship. Those with PTSD may avoid certain situations because they are afraid of encountering reminders of the traumatic event. This could prevent couples from interacting in ways that nurture or sustain their relationship. Going on dates to crowded places, enjoying a movie at the theatre with loud noises, or even having a get together with family could all be difficult for and avoided by someone with PTSD.

Goff, Crow, Reisbig, and Hamilton (2007) found three specific symptoms to be associated with relationship problems in individuals with PTSD. They assessed 45 couples regarding their relationship satisfaction, history of trauma, and PTSD symptoms. Results from their study showed that individual symptoms of trauma correlated negatively with relationship satisfaction. The specific symptoms that had the strongest correlations were sleep difficulties, dissociation, and sexual dysfunction. Other symptoms that they examined, such as depression and anxiety, were not significant and did not have strong correlations with relationship dissatisfaction. While sexual dysfunction is not a symptom of PTSD in the DSM-V, dissociation and sleep difficulties are, and sexual dysfunction is commonly experienced by individuals with PTSD (Goff et al., 2007).

To further our understanding of relationship dysfunction and PTSD, it is important to understand why symptoms like these would interfere with the stability of a relationship. Sleep problems would likely interfere with how the other partner sleeps and possibly prevent the couple from sleeping together. Sleep problems could also affect how the person with PTSD functions throughout the day. When sleep disturbance occurs consistently over a long period of time, the person may become more irritable, may not have the physical energy to perform certain roles in the relationship, and may not have the mental energy to fully participate in the relationship (Karlson, Gallagher, Olson, & Hamilton, 2013). Sexual dysfunction could limit relational intimacy, and might kindle resentment or embarrassment, which could in turn interfere with an emotional connection (Goff et al, 2007).

Dissociation itself could also cause many problems in a relationship. Dissociation has been described as when the individual no longer has command over their mental processes or they can no longer access certain information that was once available (Carlson, Dalenberg, & McDade-Montez, 2012). This can include forgetting specific information about or having a flashback of the trauma, or feeling detached from the outside world because of changed thought processes (Carlson et al., 2012). If a partner with PTSD is experiencing frequent and/or severe episodes of dissociation it could create emotional distance in a relationship and prevent the partners from creating or sustaining an emotional bond (Goff et al., 2007). Also, dissociation can be a frightening experience for a partner if, for example, the person is having a flashback and is acting as if there are experiencing the trauma again.

Having multiple PTSD symptoms could also impact relationship satisfaction. Allen and colleagues (2010) examined the impact of recent deployment and PTSD symptoms on married couples within the Army. All husbands were Active duty army soldiers and wives were all

civilians. Results demonstrated that multiple PTSD symptoms experienced by the husbands correlated negatively with marital satisfaction. Specifically, PTSD symptoms were associated with decreased communication skills and dedication to the relationship, decreased ability to connect emotionally, and less belief that the relationship will last. Yet, a spouse's willingness to take care of their partner was not negatively associated with PTSD.

Similar associations between relationship dysfunction and PTSD have been found in many other studies. Research on Vietnam veterans has found that veterans with PTSD exhibited more difficulties with intimacy, had progressed more towards the process of separation (Riggs, Byrne, Weathers, & Litz, 1998), were more likely to report distress within the marriage, exhibited more aggression towards their partner, and had more difficulties with parenting (Jordan et al., 1992) than veterans without PTSD. Furthermore, Jordan et al. (1992) found more behavioral problems among children of veterans with PTSD than among children of non-PTSD veterans.

Although PTSD has been associated with relationship difficulties there is a possibility that this association is not specific to PTSD but is instead the result of mental illness in general. Among individuals with all the major DSM-IV Axis I disorders, those with PTSD have been found to be second among those most likely to have relational difficulties with dysthymia ranked first (Monson et al., 2010). Except for people with dysthymia, people with PTSD are 3.5 times more likely to have relationship difficulties than people with other disorders (Monson et al., 2010). Many other disorders, such as generalized anxiety disorder, major depressive disorder, and panic disorder, also have a similarly strong negative association with relationship dysfunction, however the associations are significantly less.

Beck (2010) suggests that each disorder would have a different impact on relationships due to the nature of the disorder and the symptoms. For PTSD, emotional numbing could cause a partner to feel cut-off or distant from their partner (Mills & Turnbull, 2004). Re-experiencing may lead to flashbacks that could threaten a partner's safety (Beck, 2010). Avoidance could lead to a decrease in communication or intimacy (Mills & Turnbull, 2004). Yet, other disorders' symptoms may affect relationships differently. For example, the frequent worry and fear of negative outcomes associated with generalized anxiety disorder could significantly affect a relationship (Newman & Erickson, 2010). People with this disorder may be irritable, pessimistic, and may seek reassurance. A partner may find it challenging to be constantly comforting someone and to deal with these difficult characteristics. Obsessive compulsive disorder may change the dynamic of the relationship in a way that irritates the individual's partner due to requests to accommodate the person's obsessions and compulsions (Renshaw, Stekette, Rodriques, & Caska, 2010). People with panic disorder may become agoraphobic and become reliant on others to provide for them (Chambless, 2010) putting significant strain on their relationship. Given that by definition a psychiatric disorder must result in impaired functioning, one could argue that they would all negatively impact relationships and that each disorder's symptomology will affect relationships differently. PTSD has many symptoms that are specific to the disorder that could be associated with greater relationship difficulties than other disorders. The various symptoms of PTSD, such as re-experiencing and avoidance, may impact relationships in unique ways that contribute to relationship dissatisfaction and/or dysfunction.

Emotional Numbing and Relationships

Several studies have illustrated that PTSD is associated with major problems in relationships (Allen et al., 2010; Carlson et al., 2012; Dekel & Solomon, 2006; Goff et al., 2007;

Jordan et al., 1992; Monson et al., 2010; Riggs et al., 1998) but the major question is what links PTSD to relational problems. While the relationship between PTSD and relationship dysfunction is likely bidirectional, some researchers has presumed that PTSD has a negative effect on relationships and have searched for a cause. The multiple studies that have researched this question have found emotional numbing to be the main factor linked to relational problems. Emotional numbing is a PTSD symptom that is a dramatic change in emotionality due to reminders of a traumatic event (Litz & Gray, 2001). There are many definitions of emotional numbing, but most definitions involve limited capacity to feel certain emotions, difficulty expressing certain emotions, feeling disconnected from others, and lost interest in participating in once enjoyable activities (Kashdan, Elhai, & Frueh, 2006; Litz & Gray; Litz, 1992; Mills & Turnbull, 2004). Emotional numbing may impact relationships by making it difficult to communicate or reciprocate emotions, understand or respond to other's emotions, and even experience emotions (Kashdan, Elhai, & Frueh, 2006).

Someone with PTSD who is in a romantic relationship may be less expressive in general, and don't express their feelings to their significant other (Erbes et al., 2011; Mills & Turnbull, 2004; Riggs et al., 1998; Solomon et al., 2008). Erbes et al. (2011) and Solomon et al. (2008) suggest that emotional numbing in those with PTSD is related to a decrease in self-disclosure to a partner which could cause a significant other to feel distant from the individual with PTSD. Without healthy communication, emotional bonding becomes difficult and as a result the relationship can falter. Riggs et al. (1998) discovered that emotional numbing associated with PTSD had a strong association to the amount of distress the couples were experiencing. They suggest that emotional numbing may lead to a decrease in the amount of positive emotions felt

and expressed by the PTSD partner, and thus it may be difficult for them to express any positive emotions to a partner as well.

The finding that emotional numbing has a negative association with relationship attenuated satisfaction has been supported in many studies including research by Carroll, Rueger, Foy, and Donahoe (1985) who examined relationship problems among help-seeking combat veterans with PTSD, help-seeking combat veterans without PTSD, and help-seeking veterans without PTSD who have experienced little combat. Carroll et al. (1985) found that the PTSD group were more physically aggressive towards their partner, had difficulties adjusting to relationship problems, and showed decreased social functioning compared to the other two groups. In addition, those with PTSD were less expressive and engaged in less self-disclosure in their relationships, both common features of emotional numbing, compared to the other two groups. It is proposed by a number of researchers that a PTSD partner will often times not disclose or share information, such as their personal thoughts and feelings, with a partner or spouse in an attempt to protect themselves from any emotional encounter (Erbes et al., 2011; Mills & Turnbull, 2004; Riggs et al., 1998; Solomon et al., 2008).

Although the majority of studies looking at the connection between PTSD and relationship problems are cross-sectional, there are a few longitudinal studies that allow a better understanding of the nature of these relationships. One longitudinal study of National Guard soldiers supports the idea that emotional numbing interferes with relationships (Erbes, Meis, Plusny, & Compton, 2011). The first of two surveys assessed their current functioning in relationships and the second survey, which was taken one year later, assessed the amount of adjustment and change that occurred in the relationship. Only those that reported being in a committed relationship were included in the study. The researchers assessed participants'

relational satisfaction, quality of life in the Navy, and PTSD symptoms. Results demonstrated that participants who had more PTSD symptoms at Time 1 had more difficulties adjusting to a relationship and more relationship dysfunction at Time 2.

Their results found that the avoidance cluster and dysphoria symptoms, which both include emotional numbing symptoms, have the greatest impact on interpersonal relationships. Dysphoria is a symptom that involves feeling troubled by ones emotions and can cause a person to keep their emotions to themselves and distance themselves emotionally from others. Although dysphoria is not a symptom of PTSD, it includes many symptoms that are also present in PTSD. These symptoms include those that are also associated with emotional numbing such as emotional withdrawal, decrease in emotional involvement and communication, and an inability to express feelings. In the study by Erbes et al. (2011), soldiers with PTSD reported more problems in their relationship due to dysphoria and avoidance. Erbes and colleagues (2011) suggest that because dysphoria and avoidance encompass many symptoms of emotional numbing, their results support the theory that emotional numbing can significantly contribute to dysfunction in a relationship that involves a PTSD partner.

Similar findings from Cook and colleagues (2004) add further support for the association between emotional numbing and relational dysfunction with their study of former WWII POW's. The POW's with PTSD were significantly more likely to have problems in their marriage, have more problems with intimacy, and displayed less communication with their partners than those without PTSD. More importantly, only the POW's with PTSD showed emotional numbing towards their partners, which was also associated with overall marital dysfunction.

A study of former Israeli POWs discovered similar findings in that avoidance symptoms, like emotional numbing, were a significant factor in relational difficulties, especially those

related to intimacy (Solomon, Dekel, & Zerach, 2008). The researchers examined the relationships between intimacy and three symptoms clusters, avoidance, hyper arousal, and re-experiencing. The results showed that POW's PTSD avoidance and hyper arousal symptoms were correlated with intimacy problems, while re-experiencing was not. Furthermore, self-disclosure mediated the relationship between avoidance and intimacy, while verbal aggression mediated the relationship between hyper arousal and intimacy. Solomon and colleagues (2008) suggests that emotional numbing, a product of avoidance, contributes to less self-disclosure between partners which can negatively impact intimacy.

Although the majority of the research on the association of PTSD and relational problems focuses on romantic or marital relationships, as stated earlier, other relationships can also be impacted by PTSD and emotional numbing. Many of the different symptoms of PTSD could cause significant distress for a friend or family member. Monson et al. (2012) examined how improvement in PTSD due to treatment would affect social relationships. Each participant was assessed for PTSD and social adjustment before and after treatment. Monson et al. (2012) discovered that emotional numbing affected social, family, and housework adjustment the most. When treatment improved emotional numbing symptoms, social and family adjustment improved as well. While improvements in all avoidance symptoms also improved housework adjustment, it was also associated with a decrease in family adjustment. Improvements in hyper arousal and re-experiencing were not associated with improvements in areas of adjustment. The authors suggest that emotional numbing may be the leading cause to major problems in social functioning.

In another study, emotional numbing was found to be associated with how one viewed their support system (Beck, Grant, Clapp, & Palyo, 2009). Participants were assessed for PTSD,

depression, interpersonal functioning, and how they perceived their support system. Results showed that there was a positive correlation between participant's emotional numbing symptoms and negative perception of their support system. The authors suggest that these results showed that emotional numbing may not only affect how one acts but may also affect how one perceives others. Multiple studies have shown emotional numbing to be associated with relationship problems (Erbes et al., 2011; Monson et al., 2012; Riggs et al., 1998; Solomon et al., 2008). Yet, in order to truly understand this association, the process of emotional numbing also needs to be understood.

Theories of Emotional Numbing

There are two major theories, or information processing models, that have been developed to explain the process of emotional numbing. The first information processing model, developed by Horowitz (2011), theorizes that people with PTSD experience a generalized numbing response to all emotions. Yet, very little research has been done on this theory and the research that has been done has only been by clinical observation and not experimentation (Litz, 1992).

The second model, developed by Litz and Gray (2001), theorized that emotional numbing may actually be due to increased experiencing of negative emotions. Their theory postulates that people with PTSD will become more sensitive to negative emotions because they are associated with their traumatic memory. Because of this, someone with PTSD associates negative emotions with their trauma and thus they are more aware of the negative emotions because they function as a reminder of their experiences. This heightened attention decreases the amount of cognitive resources they have to devote to other types of emotions. This decrease in energy prevents them from attending to positive emotions hence, emotional numbing to positive emotions. This theory

proposes that those with PTSD are not really experiencing emotional numbing to all emotions but are actually experiencing sensitivity to negative emotions and thus have less attention to devote to processing positive emotions (Litz & Gray, 2001). Unlike Horowitz's (2011) theory, this modified information processing model has been supported through research.

Wolf and colleagues (2009) examined male Vietnam veterans to determine their capacity to experience positive and negative emotions. The participants were assessed for PTSD, and combat exposure. The veterans were then exposed to 150 pictures, pleasant and unpleasant, from the International Affective Pictures System (IAPS), some of which related to the Vietnam War. Participants were asked to rate each picture using the Self-Assessment Mannikin (SAM). The SAM is an affective rating scale where the participant rates the picture based on their emotional reaction. On the SAM, a figure is shown with ranges of emotional expressions such as happy to sad, or calm to excited. The participant is to pick the figure that best captures what they felt while viewing the picture. Their reactions to the pictures were measured to see if they would react with emotional numbing to those that related to pleasant and unpleasant memories.

The combat veterans with PTSD reported more negative reactions when they were exposed to unpleasant images than those without PTSD (Wolf et al., 2009). These negative reactions were heightened when the veterans were exposed to stimuli that related to their own trauma such as an image of a soldier in combat or an image of a wounded soldier. Reported reactions to pleasant images were not different between those with or without PTSD. These results did not show emotional numbing for either negative or positive emotions but it did show some support for Litz and Gray's (2001) information processing theory that those with PTSD experience heightened negative emotions.

Similarly, heightened negative reaction to images was also found by Litz and Miller (2004) when testing startle responses such as eye blinking, heart rate, skin conductance, and facial EMG. Litz and Miller (2004) examined emotional responses in male veterans with or without PTSD, through self-report and startle responses, to images of participants after they were exposed to a trauma related stressor such as military images and images of combat. Increased startle reflexes indicates that the person has begun to react defensively to what they are seeing. In the experiment, participants were asked to rate the emotional reaction using the SAM scale to the IAPS at three different times. Participants were not primed for the first viewing in order to measure their baseline reactions. Before the second viewing, participants were primed with a non-trauma related stressor by being told they would receive a maximum of three shocks while viewing the pictures even though they would never receive a shock. Before the third viewing, participants were primed with a trauma reminder by watching combat related images for 5 minutes. Startle responses were measured during each of three viewing times.

Litz and Miller (2004) found that those with PTSD had greater startle responses and increased heart rate when exposed to unpleasant images than those without PTSD. Yet again, there was no support for emotional numbing. Wolf et al. (2009), and Litz and Miller (2004) show support for the theory that people with PTSD may have increased arousal to unpleasant stimulus which allows them to avoid and protect themselves from any future threat. Yet, these two studies do not show support for the other half of the theory that includes emotional numbing to positive emotions.

Even though Litz and Miller (2004) and Wolf et al. (2009) did not find emotional numbing to pleasant emotions in their participants, a few other studies did. Litz, Orsillo, Kaloupek, and Weathers (2000) conducted a study to assess emotional problems in those with

PTSD. There were three different experimental sessions; the second session was performed three days later and the third session was performed a week after the second session. During the first session participants were presented with the IAPS without a prime and were instructed how to use the rating system called the Positive Affect Negative Affect Schedule (PANAS). The purpose of this session was to measure physiological baseline readings. The participants then completed the PANAS following exposure to the pictures to measure their affect. During the second and third sessions, participants were primed with a 10 minute combat related video, viewed the IAPS, and then rated the affect with the PANAS.

When Litz et al. (2000) presented trauma related prime and then pleasant stimuli, PTSD participants in this study showed less positive facial expressions than participants without PTSD. Although those with PTSD did not report more or less emotionality on the PANAS when viewing unpleasant stimuli than those without PTSD, the PTSD participants had increased heart rate when exposed to all images. Litz et al. (2000) suggest that this physiological finding represents the participant's bodies preparing for a future threat. They also suggest that this preparation takes away cognitive energy that allows the participants to process emotions, and this is why they showed suppressed facial expressions to pleasant images. This suppression of positive facial expression is a measure of emotional numbing according to Litz et al. (2000). This study showed support for Litz and Gray's (2001) theory by demonstrating that participants with PTSD showed emotional numbing to positive emotions. Although they did not show increased arousal to negative emotions they did show decreased arousal to positive emotions as the theory predicts.

Additional support was found by Amdur, Larsen, and Liberzon (2000) who studied combat veterans with PTSD, combat veterans without PTSD, and a control group without

combat experience and without PTSD. Participants were presented with images from the IAPS for six seconds each and were asked rate on the SAM how much they were feeling of eight emotions: anger, ashamed, afraid, calm, disgusted, surprised, sad, and pleased. A second viewing time allowed the participants to view each picture again without a time limit and they could change the picture at will. The amount of time they viewed each picture was measured to determine if they spent more time viewing certain types of pictures than others. The participants were also asked if they had seen each image during the previous viewing time and to rate the images again.

Amdur et al. (2000) found that the Vietnam veterans with PTSD reported experiencing a greater intensity of certain negative emotions and a lesser intensity of certain positive emotions compared to the non-PTSD groups. For the pleasant images, participants with PTSD had reduced emotionality to calm and pleased emotions compared to participants without PTSD. Additionally, the group with PTSD spent more time viewing images that were meant to illicit calm and happy emotions than other participants. The authors suggest that those with PTSD spent more time on pictures related to pleasant emotions because they had previously become numb to those feelings and therefore have a difficult time processing the images. For unpleasant images, participants with PTSD had greater emotionality related to anger, shame, disgust, and sadness compared to the non-PTSD groups. Amdur et al. (2000) suggest that this showed that PTSD was related to forms of numbing with positive emotions and heightened arousal with negative emotions when evoked with a stimulus.

Similarly, Mihajlovic, Crayton, and Neafsey (2005) found that pleasant pictures did not illicit positive feelings among their Bosnian refugee participants. Pleasant and unpleasant images from the IAPS were shown to Bosnian refugees with PTSD and Bosnian refugees without PTSD.

Pleasant pictures consisted of erotic images, happy images of babies or animals, and images of the opposite sex depending on the sex of the participant, while unpleasant pictures consisted of threatening images, harmed bodies, and unhappy faces. The participants were asked to look at each picture and rate their emotional response to each picture using the SAM.

The refugees with PTSD responded to pleasant pictures with decreased emotional intensity just like the Vietnam veterans in the study by Amdur et al. (2000). Yet, there was no difference in negative reactions to unpleasant image between participants with or without PTSD. These three studies show evidence against the idea of generalized numbing to all emotions. In the studies by Amdur et al. (2000) and Mihajlovic et al. (2005), participants reported experiencing less positive emotions, but did not show emotional numbing to negative emotions. In Litz et al.'s (2000) study, the participants did not report numbing to either emotions, but did show reduced facial expressions to pleasant images.

These studies on emotional numbing sought to discover if emotional numbing was a response to all emotions or if it was specific to certain emotions. All of these studies support Litz and Gray's (2001) information processing theory in some way that emotional numbing occurs because of an increase in arousal to negative emotions and a decrease in cognitive resources to process positive emotions. Litz and Miller (2004) and Wolf et al. (2004) found that their participants showed increased arousal to unpleasant images but did not show emotional numbing to any images. This supports the theory because participants showed increased arousal to unpleasant images. Yet, the the studies of Litz and colleagues (2000), Mihajlovic and colleagues (2005), and Amdur and colleagues (2000), participants did show emotional numbing to pleasant images and not to unpleasant images which suggests that emotional numbing is not a general response to all emotions but that it is selective towards certain emotions.

Because these studies examining emotional numbing had somewhat conflicting findings, it is important to hypothesize as to why these differences occurred. One important difference is that some of the studies used primes prior to the IAPS (Litz et al., 2000; Litz & Miller, 2004) while others only used the IAPS (Amdur et al., 2000; Mihajlovic et al., 2005; Wolf et al., 2009). Wolf et al. (2009) suggested that it may be difficult to receive accurate results without priming because emotional numbing is a reaction to a cue and not a constant occurrence. Some theorists believe that emotional numbing is a reaction to a threatening cue in the environment. In this case, the symptom would be a pattern of reaction rather than a consistent change in emotion. In other words, a cue is required to elicit emotional numbing. Wolf et al. (2009) propose that if there is no cue to tell the brain to begin using this defense mechanism, the individual's response of emotional numbing may not be as evident. Even if the picture is unpleasant and emotional numbing was present, it would not be as pronounced as when the individual was primed or cued (Litz & Gray, 2001; Litz & Miller, 2004; Litz et al., 2000; Wolf et al. 2009).

Wolf and colleagues (2009) point out that another limitation in this line of research is the difficulty in processing feelings that is associated with emotional numbing. This may make it difficult for those with PTSD to have good insight into how they are feeling. Someone with PTSD who experiences emotional numbing may not have the ability to properly report their own feelings because they are unsure or unaware of their own feelings. Because of this, having to self-report an emotional experience may be very difficult for people with PTSD which can affect the results in a study.

The Diagnostic and Statistical Manual of Mental Disorders-5 (DSM-5)

All of the research reviewed was based on the DSM-IV (APA, 1994) criteria for PTSD, however, there were some changes made to the criteria in the DSM-5 (APA, 2013) that impact

the current study. In the DSM-IV, criteria for PTSD consisted of 3 symptom clusters: re-experiencing, avoidance, and increased arousal (APA, 1994), while the DSM-5 criteria now has 4 symptom clusters (APA, 2013). An important change is that the avoidance symptom cluster has been split into two clusters: avoidance and negative changes in mood and thought. The new cluster, negative changes in mood and thought, is comprised of increased negative emotional states, inability to feel positive emotional states, decreased interest in once enjoyable activities, and disengagement from others (APA, 2013). This important change states that emotional numbing is no longer a generalized numbing of all emotions but a decrease in positive emotions and an increase in negative emotional states. This change has given emotional numbing its own symptom cluster and is also consistent with the information processing theory developed by Litz and Gray (2001) presented earlier.

Because this change to the avoidance cluster no longer includes emotional numbing, avoidance now only includes avoidance of thoughts and feelings related to the event, and evasion of environmental reminders of the event. Previous research using the DSM-IV criteria has studied emotional numbing under the assumption that it is an avoidance symptom. Emotional numbing was thought to be a way for someone to avoid emotions related to a traumatic event, and that it was generalized across all emotional states (APA, 1994). Yet, according to the DSM-5, emotional numbing is an independent symptom cluster that only includes changes in mood and thought (APA, 2013). Additionally, the emotional numbing category includes feeling increased negative emotions and an inability to experience positive emotions, and does not generalize the numbing to all emotions. The research that was discussed previously by Litz et al. (2000), Litz and Miller (2004), Wolf et al. (2009), Mihajlovic et al. (2005), Amdur et al.(2000) supports these changes made to the DSM-5 (Friedman et al., 2011). Because of these changes, it

is important to examine emotional numbing as sensitivity to negative emotions and a blunting of positive emotions.

The Current Study

Monson and colleagues (2010) suggest that with a greater understanding of the role PTSD plays in relationship dysfunction, individuals with PTSD and their partners could receive more effective treatment. Without a better understanding of the interaction between PTSD symptoms and relationship functioning, couples who are affected by this disorder may not receive the appropriate help and their relationships will continue to suffer. Given that emotional numbing seems to play an important role this association, it will be a central focus of the present study.

If researchers can identify the causal mechanisms of the changes in mood found with PTSD, then treatment can be specialized to target those experiences and associated behaviors (e.g., domestic violence). Given that individuals with PTSD appear to be sensitive to negative emotions and have blunted positive emotions, treatment for couples can be developed to address these phenomena to assist in creating more positive relationships which in-turn has the potential to help with further recovery from PTSD.

Support has been found for Litz and Gray's (2001) information processing theory (Litz & Miller, 2004; Litz et al., 2000). Litz and Miller (2004) found that their participants had increased heart rates when viewing unpleasant images. Litz et al. (2000) also found their participants to have elevated heart rates throughout the entire study after viewing a trauma related stimuli suggesting that the participants were prepared for a future threat because of the cue. Yet, Amdur et al. (2000) did not find physiological changes among participants. Due to the fact that only these three studies have measured physiological changes and that the results have been

inconsistent, the current study will not measure physiological changes but will instead focus on self-reports of emotional responses following a couple related priming video clip.

Given that priming was also used in many studies that found supporting results and that involved emotional numbing, it is also an important factor to consider in the current study. Several researchers suggest that PTSD-related cues are necessary to illicit emotional numbing (Litz et al., 2000; Litz & Miller, 2004; Wolf et al., 2009). Once a cue, like a negative emotion, is presented/experienced it is thought that an individual with PTSD would be more likely to respond with emotional numbing. In order to illicit emotional numbing, priming may be important to do during the experiment. When Litz et al. (2000) used a trauma prime before presenting pleasant stimuli, they reported that the participants responded with less positive facial expressions and had increased heart rate. These authors propose that priming may have caused participants to have increased heart rate throughout the study. They suggest that emotional numbing has to be triggered by some sort of cue in order for it to occur (Litz et al., 2000). Litz and Miller (2004) also found that priming the participants with a trauma cue caused a heightened startle reaction to pictures.

Some research that has examined emotional numbing has used a prime that directly relates to a traumatic event. Yet, the current study sought to discover how emotional numbing relates to relationships. Because emotional numbing has been associated with relationship dysfunction, it is important to understand its link to relationships. None of the studies on emotional numbing have incorporated an interpersonal relationship cue as a prime. In the current study, the prime used was directly related to a relationship instead of the traumatic event. By priming the participants with a cue related to a relationship, the emotional response is based on their reaction to the relationship instead of a traumatic event. Previous research has shown that

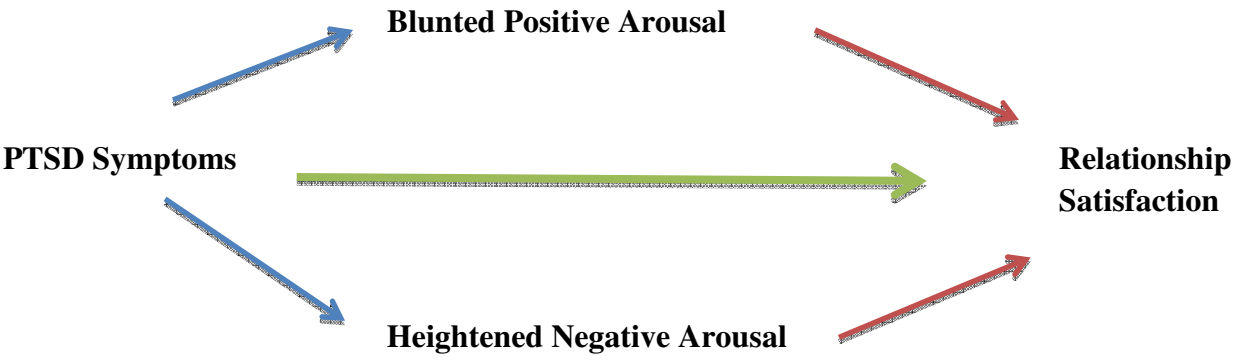
emotional numbing does not occur only when reminded of the traumatic event, but also occurs when exposed to emotions. Adding an emotional cue that is related to relationships helped to show how emotional numbing manifests when related to a strained relationship and not a traumatic event alone.

Several studies have found that emotional numbing is not a generalized response to all emotions (Amdur et al., 2000; Litz et al., 2000, Mihajlovic et al., 2005) Additionally, several studies have found strong associations between emotional numbing among those with PTSD symptoms and relationship dysfunction problems (Erbes et al., 2011; Monson et al., 2012; Riggs et al., 1998; Solomon et al., 2008). Given these two findings, the current study endeavors to further explore the connection between emotional numbing and relationship dysfunction among those with PTSD symptoms.

There was a single over-arching hypothesis proposed for the current study:

1) Heightened emotional reactivity to unpleasant images and blunted emotional reactivity to pleasant images, measured by the SAM and the PANAS, would mediate the relationship between PTSD symptoms, measured by the PCL, and relationship satisfaction. This main hypothesis was examined in three separate analyses: one that examined relationship satisfaction in romantic relationships utilizing the Comprehensive Marital Satisfaction Scale, and the other two utilizing the Inventory of Peer and Parent Attachment, one analysis examined peer relationship functioning and the other examined parent relationship functioning.

There are three sub-hypotheses associated with this meditational analysis depicted in the figure below:



The green arrow represents the sub-hypothesis A: the director relationship between PTSD symptoms and relationship dysfunction. The blue arrows represent sub-hypotheses B: the direct relationship between PTSD symptoms and arousal when viewing pictures. It is predicted that a negative correlational relationship will exist between PTSD symptoms and positive arousal when viewing positive pictures and a positive correlational relationship between PTSD symptoms and negative arousal when viewing negative pictures. The red arrows represent sub-hypotheses C: the direct relationship between arousal and relationship dysfunction. A negative correlational relationship is predicted between positive arousal and relationship dysfunction and a positive correlational relationship is predicted between negative arousal and relationship dysfunction.

The meditational relationship among these constructs will be analyzed with a statistical macro developed by Preacher and Hayes (2008) designed to examine mediation when there are multiple mediators proposed. This procedure can identify both direct and indirect effects, and also uses bootstrapping. This bootstrapping method is a benefit because the data can be resampled without requiring the sample to be normal. For the analysis, SAM scores were

collected for each pleasant and unpleasant image. The scores for the second SAM administration following the video clip were then totaled separately for pleasant images and unpleasant images. The PANAS scores were collected after each time the complete set of IAPS images were viewed and the scores for the 4th PANAS were used in the mediational analysis. The negative and positive affect from the PANAS were separated and then each word category was totaled. The totals for positive image and negative images were used in the mediational analysis for all the SAM scores and negative affect total and the positive affect total were used in the mediational analysis for all the PANAS scores.

Method

Participants

Participants consisted of 70 volunteers from psychology 101 students at the University of South Carolina Aiken. This sample size was based on previous studies (e.g., Litz et al., 2000; Litz & Miller, 2004) that used similar procedures testing similar hypotheses, however, the analyses utilized were different. The analyses utilizes bootstrapping thus it is believed that this sample size was sufficient. Additionally, Preacher and Hayes (2008) suggest that when using their mediational analysis, it is best to use a sample size similar to previous studies that had similar hypotheses. Volunteers received class credit for their participation which ranged from and hour to an hour and a half depending on how long they participated in the study.

Stimuli: Images

The International Affective Picture System (IAPS) was used as stimuli to elicit emotional responses. The IAPS is a standardized set of images that is used to prompt emotional responses (Colden, Bruder, & Manstead, 2008; Lang et al., 2008). The entire set contains 942 images that consist of pleasant, unpleasant, and neutral pictures. The IAPS have been widely used throughout

research for studying emotions and attention (Wolf et al., 2009). For the current study, 40 images were used with 20 being pleasant images and 20 being unpleasant images. The pleasant pictures included images of animals, smiling babies and people, and happy interactions between people. The unpleasant pictures included images of mutilated bodies or body parts, guns, natural disasters, chaotic or dangerous environments, and military conflict. Each image has a valence and an arousal rating with 9 being the highest rating and 1 the lowest rating. A high rating means the image induces a high amount of pleasure or arousal while a low rating means the image induces a low amount of pleasure or arousal. For the current study, images with higher ratings were used for the pleasant stimuli and images with lower ratings were used for the unpleasant stimuli. The pleasant pictures selected range from 6.25 to 8.35 for valence and 3.32 to 6.07 for arousal. The unpleasant images range from 1.76 to 3.73 for valence and 3.97 to 6.83 for arousal (See Appendix A).

Measures

A *Demographic Questionnaire* was developed by the experimenter to assess for age, race, gender, education level, current relationship status, and current medication use. Current medication use was asked because of the possibility of certain medications (e.g., valium) causing emotional changes such as reduced anxiety. This information was not used for exclusion criteria for participants but was intended to assist in data analysis. Two participants reported being on anti-depressants, of which were Citalopram and Zoloft, and four participants reported being on ADHD medication, of which were Adderall and Vyvanse (See Appendix B).

The *PTSD Checklist for DSM-V (PCL-5)* is a 20 item checklist that measures PTSD symptoms and severity (Weathers, Litz, Keane, Palmieri, Marx, & Schnurr, 2013). Each item represents a symptom or problem those with PTSD may be experiencing. The participant rated

each symptom or problem based on how much it has affected them in the past month. The rating scale is from 0 to 4 with 0 being "not at all" to 4 being "extremely". The researchers suggest that a cut-off score of 44 is usually indicative of a diagnosis of PTSD, yet for populations that are expected to have low rates of PTSD, a cut-off score of 30-35 can be used. However, cut-off scores were not used to test any of the hypotheses in the current study. The civilian version (PCL-C) was used in the current study. The PCL that was used for the DSM-IV has a test-retest reliability among Vietnam veterans of .96 and internal consistency of .97 (Weathers et al., 1993). The PCL has also shown to be correlated with multiple other scales of PTSD like the Mississippi Scale (.93) and the IES (.90) (Weathers et al., 1993). Psychometric information for the current version has not yet been updated. This was used in the current study to assess whether participants present with DSM-V symptoms of PTSD and, if so, the severity of the symptoms (See Appendix C).

The *Stressful Life Events Screening Questionnaire Revised (SLESQ-R)* assesses for 13 different traumatic events (Goodman et al., 1998). Each item on the scale has questions concerning each event and the participant is to report if they have experienced any of the 13 events. If the participant indicated "yes" to any event, they were asked at what age the event occurred and to describe the event. Each event asks further details about the incident depending on the specific event. For example, if the participant indicated "yes" to being forced to have intercourse, they were also asked how many times it occurred, and how long it occurred for. The SLESQ has a reliability of .89 (Goodman et al., 1998). Some personal questions that were used in the SLESQ were deleted because some of the questions asked for personal information that could potentially identify the participant or another person involved, or could cause unnecessary emotional distress to the participant. In addition, this information was not needed for the data

analysis. The questions that were eliminated include: “Who was the perpetrator?”, “Describe the force used against you”, and “Describe what happened.” The SLESQ was used to assess whether participants have experienced any traumatic events that could cause symptoms of PTSD (See Appendix E).

The Comprehensive Marital Satisfaction Scale Revised (CMSS-R) is a self-report scale that is comprised of 35 items (Blum & Mehrabian, 1999) and was designed to measure relational satisfaction among individuals in romantic relationships. Although this scale was developed to assess married couples, it was modified for the present study to cover a wider range of romantic relationships. The words “marriage” and “spouse” were changed to “relationship” and “partner” in order to cover various relationships. Participant were asked how much they agree or disagree with each statement. The rating scale ranges from +4 (agree strongly) to 0 (neither agree nor disagree) and then to -4 (strongly disagree). Blum and Mehrabian (1999) reported test-retest reliability of .83 and an internal consistency coefficient of .94. Although this scale only measured satisfaction, the researchers suggest that the level of satisfaction is a proxy to relationship functioning (See Appendix D).

The Inventory of Peer and Parent Attachment (IPPA) is a 60-item self-report questionnaire that assesses parent and peer relational satisfaction (Armsden & Greenberg, 1987). The questionnaire is rated on a 5-point Likert scale that rangers from +2 (always to almost always true) to 0 (sometimes true) and to -2 (never or almost never true). There are two sections to the scale with two separate scores: one for parents and one for peers. Pace, Martini, and Zavattini (2011) found the IPPA to have reliability ranging from .70 to .93, while Armsden and Greenberg (1987) found reliability ranging from.72 to .91. Again this scale measured

satisfaction, but the researchers suggest the level of satisfaction equates to level of functioning in the relationship (See Appendix F).

The Positive and Negative Affect Schedule (PANAS) is an affective rating scale that allows participants to rate their current emotional state (Watson et al., 1988). In the present study, participants were asked to rate each item based on their emotionality after each viewing session. The rating scale ranges from 1 (very slightly or not at all) to 3 (moderately) and then to 5 (extremely). The PANAS has shown an alpha coefficient of .88 for the Positive Affect scale and .87 for the Negative Affect scale (Watson et al., 1998). The test-retest value was .68 for the Positive Affect Scale and .71 for the Negative Affect scale over a period of two months. For scoring the PANAS, the positive words and negative words are calculated separately in order to obtain positive affect scores and negative affect scores (See Appendix G).

Self-Assessment Mannikin (SAM) is an affective rating scale that allows participants to rate their emotional reactions to images. The SAM shows three different figures that depict different emotional ranges. The first figure assesses happiness and shows facial expressions that range from “very unpleasant” to “neutral” and then to “very pleasant”. The second assesses for level of excitement with facial expressions that range from “very excited” to “neutral” and then to “very calm”. The last figure assesses for level of control with facial and body expressions that range from “controlled” to “neutral” and then to “dominant”. The first two SAM scales were used by the participants to rate their emotional reactions to each IAPS image. The third scale, level of control, was not used because it was not relevant to the current study’s hypotheses (See Appendix H).

Although the PANAS and the SAM are similar in that they both rate affective states, they offer different information. The PANAS rates negative and positive affect, after a viewing

session in the present study, while the SAM rates pleasure and arousal following every image. While the SAM rates a specific type of emotion, the PANAS rates multiple types of emotions. Both of these measures are used in the current study in order to obtain a more complete measure of the participant's affective states during the experiment.

Procedure

The present experiment consisted of two parts. In the first part, potential participants were given the opportunity to review the Informed Consent form and ask questions prior to signing the form if they agreed to participate. The participants were then given the SLESQ and the Demographics Questionnaire to complete. The experimenter then reviewed the SLESQ and participants who had experienced at least one traumatic event were eligible to continue on to the part two of the study. Participants who continued were given the PCL-5 CMSS-R, and IPPA to complete in an order that was counter-balanced. Thirteen participants indicated that they had not experienced a traumatic event and thus did not complete the study.

Participants were then told that they would be viewing various images and were given instructions on how to complete the SAM and PANAS rating scale. Next, participants were first given the PANAS to measure their emotional state at the beginning of the experiment. Participants were then shown the 40 pictures from the IAPS in random order and were asked to rate their emotional reaction to each picture, with the SAM, based on how it made them feel. They were given 6 seconds to view each picture. Following each picture, there was a blank screen for 6 more seconds and then the SAM was presented to rate their feelings engendered by the picture. Once the participants had viewed the 40 images, they were given the PANAS for the second time. This was done to measure the participant's initial overall emotional states after viewing the IAPS images.

Next, the participants were shown a short video clip without auditory content of a couple having an emotional interaction to cue emotional numbing. The video clip was from the movie *Mystic River* and is of a couple arguing. The content of the argument did contain interpersonal issues. Because this study used the video to illicit emotional reactions related to relationships, the video was more related to interpersonal issues when it is used without sound. This video clip without sound has been found to be reliable in producing negative emotional reactions towards relationships (Carvalho, Leite, Galdo-Alvarez, & Gancalves, 2012). Following the video clip, participants were given the PANAS for the third time and then shown the 40 IAPS images for the second time and were asked again to rate their emotional reactions using the SAM. After they viewed the 40 images, they were given the PANAS for the fourth time.

Participants viewed the video clip and IAPS in an individual room on a desktop computer to reduce distraction and allow private viewing of the pictures and completion of measures. Following completion of the experiment, the experimenter talked with each of the participants about how they were feeling and if they were distressed, and all reported feeling well. They were also asked if they wanted referral information for counseling serviced through the university or for other counseling services, but all declined.

Results

Eighty three participants completed the demographic questionnaire and SLESQ, but only 70 participants reported experiencing a trauma and were thus eligible to complete the entire experiment. The 70 participants consisted of 60 females and 10 males, with an average age of 18.79 (SD = 1.30). The majority of the participants indicated that they identified as Caucasian (58.6%), while the rest of the participants were 28.6% African American, 7.1% Hispanic American, 2.9% Multi-Racial, and 2.9% International. Only 24 participants reported being in a

committed relationship with 22 in a dating relationship, 1 living with their partner, and 1 married. The rest (46 participants) reported being single (See Table 1).

For all 70 participants, the majority of the traumas reported were emotional abuse (36), family deaths (34), and life threatening accidents (17; See Table 2). For the participants who reported being in a romantic relationship, the majority of the traumas reported were emotional abuse (13), family deaths (11), and sexual assault (6). As for PCL scores, 8 of the participants scores met or exceeded the cut-off score of 44 and thus had scores that were indicative of a diagnosis. None of the participants had scores that were considered severe. The majority of trauma's reported by the 8 participants with PCL scores indicative of PTSD were emotional abuse (7), witnessing a trauma (5), and physical abuse as a child (4). Of the 8 participants who had scores that were indicative of a PTSD diagnosis, one reported being in an intimate relationship, while the other 7 reported being single. Participants who reported being in a romantic relationship had an average PCL scores of 19.54 (*SD* = 12.95), while those who reported they were single had an average PCL score of 22.15 (*SD* = 17.09). A chi-test was conducted to compare participants who were single and in a relationship to participants who reported score that were and were not indicative of a PTSD diagnosis. The results indicated that the distribution is not different from the expected value not an equal, $X^2(3, n = 70) = 1.94$, $p = .497$. A t-test was conducted to understand the differences between high PCL scores for the participants in a romantic relationship and the participants who were single. The results indicate that there was not a significant difference between these groups, $t(68) = .948$, $p = .347$.

For the IAPS images, the standardized SAM score averages for each image provided by Lang et al. (2008) was compared to the SAM score averages for each image obtained by the current study. For the pleasant images, the standardized samples SAM arousal scores ranged

from 6.25 to 8.34 and the SAM valence scores ranged from 3.32 to 6.07, while the current participants SAM arousal scores were lower with a range of 4.78 to 6.29, and the SAM valence score were lower with a range of 3.52 to 4.52. For the unpleasant images, the standardized samples SAM arousal scores ranged from 1.76 to 3.36 and the SAM valence scores ranged from 3.97 to 6.64, while the current participants SAM arousal scores were higher with a range of 2.8 to 4.27, and the SAM valence scores were lower with a range of 3.58 to 4.46 (Lang et al., 2008).

Mediation of PTSD Symptoms and Relationship Satisfaction/Functioning by Emotional Reactivity

The main hypothesis predicted that heightened negative emotional reactivity (M1; SAM excited unpleasant pictures scores, SAM happy unpleasant pictures scores, and PANAS negative affect scores) and blunted positive emotional reactivity (M2; SAM excited pleasant pictures scores, SAM happy pleasant pictures scores, and PANAS positive affect scores) would mediate the relationship between PTSD symptoms (X; PCL scores) and relationship satisfaction/functioning (Y; CMSS scores, IPPA parent scores, and IPPA peer scores). The SPSS macro that was created by Preacher and Hayes (2008) was used to analyze these three meditational models.

There were three mediational analyses performed. Six proposed mediators (SAM excited unpleasant pictures scores, SAM happy unpleasant pictures scores, PANAS negative affect scores, SAM excited pleasant pictures scores, SAM happy pleasant pictures scores, and PANAS positive affect scores) were analyzed three separate times in order to test the three different relationship satisfaction outcome variables (CMSS scores, IPPA parents scores, and IPPA peer scores). The PTSD symptoms (PCL scores) were used as the predictor variable for each analysis (See Table 3 for means and standard deviations).

Heightened Negative Affect as a Mediator

The current study predicted that heightened negative affect would mediate the relationship between PTSD symptoms and relationship satisfaction. For direct relationships, it was predicted that there would be a positive relationship between PTSD symptoms and negative affect, and a negative relationship between negative affect and relationship satisfaction. None of the three proposed mediation models, SAM excited unpleasant pictures scores (a_1b_1 = -.03, 95% CI [-1.145, .496]), SAM happy unpleasant pictures scores (a_1b_1 = .02, 95% CI [-0.200, .610]), and PANAS negative affect scores (a_1b_1 = .01, 95% CI [-.146, .434]) mediated the relationship between PTSD symptoms and intimate relationship satisfaction since the confidence intervals for these three mediation models included zeros. None of the three proposed mediation models, SAM excited unpleasant pictures scores (a_1b_1 = .02, 95% CI [-.042, .164]), SAM happy unpleasant pictures scores (a_1b_1 = .00, 95% CI [-0.024, .103]), and PANAS negative affect scores (a_1b_1 = -.02, 95% CI [-.169, .056]) mediated the relationship between PTSD symptoms and parent relationship satisfaction since the confidence intervals for these three mediation models included zeros. None of the three proposed mediation models, SAM excited unpleasant pictures scores (a_1b_1 = .00, 95% CI [-.019, .045]) SAM happy unpleasant pictures scores (a_1b_1 = .00, 95% CI [-.044, .016]), and PANAS negative affect scores (a_1b_1 = -.01, 95% CI [-.072, .056]) mediated the relationship between PTSD symptoms and peer relationship satisfaction since the confidence intervals for these three mediation models included zeros.

Although there was no mediational relationship, some significant path coefficients were found. With these path coefficients, a causal relationship cannot be inferred, but it does indicate a significant relationship between variables. A significant direct effect was found between PCL scores and PANAS negative affect following all of the IAP images (a = .14, 95% CI [.033, .254];

See Figure 2). This indicates that participants' PCL scores were positively associated with overall negative affect following presentation of the IAPS pictures as predicted. Another significant direct effect was found between SAM excited unpleasant pictures scores and CMSS scores (b = -.39, 95% CI [-.782, -.008]; See Figure 4). In other words, participants' reports of activation/excitement following presentation of the unpleasant pictures were negatively correlated with intimate relationship satisfaction, as expected.

Blunted Positive Affect as a Mediator

The current study predicted that blunted positive affect would mediate the relationship between PTSD symptoms and relationship satisfaction. For the direct effects, it was predicted that there would be a negative relationship between PTSD symptoms and positive affect, and a positive relationship between positive affect and relationship satisfaction/functioning. None of the three proposed mediation models, SAM excited pleasant pictures scores (a_2b_2 = .07, 95% CI [-.177, .906]), SAM happy pleasant pictures scores (a_2b_2 = .10, 95% CI [-.353, .854]), and PANAS positive affect scores (a_2b_2 = .22, 95% CI [-.237, .965]) mediated the relationship between PTSD symptoms and intimate relationship satisfaction since the confidence intervals for these three mediation models included zeros. None of the three proposed mediation models, SAM excited pleasant pictures scores (a_2b_2 = .02, 95% CI [-.044, .173]), SAM happy pleasant pictures scores (a_2b_2 = -.10, 95% CI [-.334, .006]), and PANAS positive affect scores (a_2b_2 = -.07, 95% CI [-.210, .021]) mediated the relationship between PTSD symptoms and parent relationship satisfaction since the confidence intervals for these three mediation models included zeros. None of the three proposed mediation models, SAM excited pleasant pictures scores (a_2b_2 = .00, 95% CI [-.018, .039]) SAM happy pleasant pictures scores (a_2b_2 = .00, 95% CI [-.074, .070]), and PANAS positive affect scores (a_2b_2 = -.02, 95% CI [-.097, .011]) mediated the

relationship between PTSD symptoms and peer relationship satisfaction since the confidence intervals for these three mediation models included zeros.

Although there were no mediational relationships, several significant path coefficients were discovered. The relationship between PCL scores and SAM happy pleasant pictures scores was found to have a significant direct effect (a = -.45, 95% CI [-.853, -.056]; See Figure 9). This indicates participants' PTSD symptoms were negatively correlated with their reports of valence/happiness after viewing positive pictures, as predicted. A significant direct effect was also found between SAM happy pleasant pictures scores and the CMSS scores (b = -.79, 95% CI [-1.374, -.215]; See Figure 7). This shows participants' valence/happiness scores after viewing pleasant images was negatively correlated with intimate relationship satisfaction, contrary to prediction.

Another significant direct effect was found between PANAS positive affect scores following all of the IAP images and CMSS scores (b = -1.62, 95% CI [-3.052, -.181]; See Figure 1). Preacher and Hayes (2008) suggest that significance is based on the confidence intervals, and if the confidence interval does not contain zero, then it is significant and thus the p value is not used as a significance indicator. This demonstrates participants' overall positive affect following the presentation of the IAPS images was negatively correlated with intimate relationship satisfaction, which was not expected. Two significant direct effects were also found between PANAS positive affect scores and IPPA parent scores (b = .79, 95% CI [.128, 1.460]), and between PANAS positive affect scores and IPPA peer scores (b = .34, 95% CI [.041, .654]; See Figures 2 and 3). This indicates participants' reports of overall positive affect after viewing the IAPS images was positively associated with their parent relationship satisfaction as well as their peer relationship satisfaction, as predicted.

Direct Relationship Between PTSD Symptoms and Relationship Satisfaction

For three mediational analyses, SAM excited pictures scores (*c'* = -.55, 95% CI [-.886, -.212]), SAM happy pictures scores (*c'* = -.42, 95% CI [-.776, -.056]), and PANAS pictures scores (*c'* = -.43, 95% CI [-.787, -.067]), a significant direct effect was found between PCL scores and IPPA parent scores during each analysis (See Figures 2, 5 and 8). In other words, there was a negative association between participants' PTSD symptoms and their parent relationship satisfaction, as predicted, but not for peer relationship satisfaction. Also, a positive correlation was found between PCL scores and CMSS scores (*c'* = .54, 95% CI [.440, 1.530]), contrary to prediction (See Figure 4).

Discussion

Several studies have discovered that emotional numbing has been linked to PTSD and relational dysfunction (e.g., Erbes et al., 2011; Monson et al., 2012; Riggs et al., 1998; Solomon et al., 2008; &). Emotional numbing was originally defined as a generalized response to all emotions (Horowitz, 2011), yet, a few studies have found that emotional numbing may actually be a sensitivity to negative emotions and a reduction in positive emotions (Amdur et al., 2000; Litz et al., 2000, Mihajlovic et al., 2005). The present study attempted to test negative and positive emotions separately in order to understand which, if not both, emotional responses may be linked to relationship dysfunction.

The current study sought to examine if sensitivity to negative emotions and blunted positive emotions would mediate the relationship between PTSD symptoms and relationship satisfaction. Furthermore, the current study attempted to examine whether participants with increased PTSD symptoms would also show dissatisfaction with intimate, parent, and/or peer relationships. Also, the current study tested if participants who exhibited higher PTSD symptoms also experienced sensitivity to negative emotions and an inability to feel positive emotions.

Lastly, the current study examined if participants who showed sensitivity to negative emotions and blunted positive emotions also had less relationship satisfaction with intimate, parent, and/or peer relationships.

Arousal as a Mediator

The main hypothesis proposed that sensitivity to negative emotions and blunted positive emotions would mediate the relationship between PTSD symptoms and relationship dysfunction. Three meditational models (one for each of the types of relationships) were tested and none of them were supported; there are several factors explored below that could have affected the mediation results.

One significant difference between the current study and previous studies that could have impacted the results was the type of traumas experienced by participants. Several previous studies used military or veteran participants who already had been diagnosed with PTSD (Allen et al., 2010; Carlson et al., 2012; Dekel & Solomon, 2006; Goff et al., 2007; Jordan et al., 1992; Monson et al., 2010; Riggs et al., 1998), while none of the participants in the current study reported combat trauma. Also, previous studies used participants that were older and in relationships for a much longer period of time (e.g. Allen et al, 2010; Goff et al., 2007; Erbes et al. 2011; Dekel & Solomon, 2006; Monson et al., 2010). For example, Erbes et al. (2011) used participants with an average age of 31 and 68% of their participants were in their relationship for 3 years or more. However, in the present study, the majority of the participants were 18 years old and those who indicated they were in a romantic relationship had been in these relationships for a year or less. Additionally, it is likely that their traumatic event occurred before their intimate relationship began because of the length of time in the romantic relationship and the types of traumas they reported (e.g., emotional abuse). PTSD symptoms may affect relationships

differently depending on the age of the person, the length of the relationship, and the timing of the intimate relationship and the traumatic event (e.g., prior to the start of the relationship).

Additionally, the types of trauma's experienced by the participants did not include all types of trauma's like combat trauma and were skewed towards a couple such as emotional abuse and family deaths. Also, the PTSD symptoms that were reported were not as severe as previous studies. Eight of the participants in the current study reported PCL score that were indicative of a PTSD diagnosis and none reported PCL scores that are considered severe while previous studies examining the relationship between PTSD and relationship satisfaction used participants with more severe PTSD symptoms (e.g., Allen et al., 2010; Carlson et al., 2012; Dekel & Solomon, 2006; Goff et al., 2007; Jordan et al., 1992; Monson et al., 2010; Riggs et al., 1998). Although the current study required participants with a range of PTSD symptoms, having no participants with severe PTSD symptoms may have significantly impacted the results. Future studies should use a sample that has a wider range of types of trauma that includes combat trauma, and a wider range of PTSD symptoms, in order to get more generalizable results.

In order to truly understand emotional numbing and relationship satisfaction, it may be important to examine how emotional numbing might impact a relationship comparing people with different types of traumas. The relationship may be the same across all types of traumas or emotional numbing may affect relationships more when a partner has PTSD symptoms from a specific type of trauma, such as combat trauma. To this point research has not examined this specifically and it is unclear whether the effect of emotional numbing on relationships is generalizable to people with all types of traumas.

PTSD and Relationship Satisfaction

Sub-hypothesis A, which was supported by several previous studies (Allen et al., 2010; Carlson et al., 2012; Dekel & Solomon, 2006; Goff et al., 2007; Jordan et al., 1992; Monson et al., 2010; Riggs et al., 1998), predicted a significant negative relationship between PTSD symptoms and relationship satisfaction. This hypothesis was supported by the current study for parent relationships but not for intimate or peer relationships. In fact, for intimate relationships, a significant positive relationship was found between PTSD symptoms and intimate relationship satisfaction, which has not been found in previous studies.

There was no significant relationship, positive or negative, between PTSD symptoms and peer relationship satisfaction. Some researchers have suggested that peer relationships will not be as affected as much as other types of relationships. One study on post-deployment soldiers found that PTSD severity was related to support from family and intimate relationships but not related to relationships with friends (Wilcox, 2010). Wilcox (2010) speculated that soldiers who have returned from a war zone were more likely to spend most of their time with family, significant others, and other military members. He also suggests that because they are less likely to spend time with or rely on civilian friends, their friendships are less likely to be affected by their PTSD symptoms.

The most surprising finding was the significant positive relationship between PTSD symptoms and intimate relationships. Throughout multiple studies, higher PTSD symptoms correlated with less relationships satisfaction (Allen et al., 2010; Carlson et al., 2012; Dekel & Solomon, 2006; Goff et al., 2007; Jordan et al., 1992; Monson et al., 2010; Riggs et al., 1998) yet the current study's findings suggest the opposite. One factor that could have impacted the results was that the majority of participants in committed relationships in the current study had only

been with their partner for a few years or less, while the majority of the participants in past studies had been married or cohabitating and with their partner for a longer period of time (Allen et al., 2010; Carroll et al., 1985; Cook et al., 2004; Erbes et al., 2011; Riggs et al., 1998). It could be possible that PTSD symptoms may not affect people in newer relationships as much because they may still be in a "honeymoon" phase and negative events may be more easily overlooked by a partner.

Another explanation for this result is provided by Barr and Simons (2014), who examined how mental and physical health impacted relationships in different levels of commitment. They found that health problems and relationship dysfunction were negatively correlated with couples who were married or cohabitating, but not for couples who were dating. Barr and Simons (2014) suggest that being married or living together increases a couple's interdependence. This increased dependence on each other may lead to mental or physical health problems, such as PTSD, to become more apparent and affect the relationship more. In the current study, only one participant reported that she was married and one participant that she was cohabitating. According to the findings by Barr and Simons (2014), the results from the current study would be due to the fact that the majority of the participants were in dating relationships. Although this may be related to why the current study did not find a negative relationship between PTSD symptoms and relationship satisfaction, it does not explain the positive relationship found.

However, Rhatigan, Shorey, and Nathanson (2011) offer a possible explanation for this positive correlation between PTSD symptoms and relationship satisfaction. They examined how women with PTSD perceive themselves and their relationship with a dating partner. They discovered that women with severe PTSD were more likely to experience feelings of shame and decreased self-efficacy. The severity of the PTSD also predicted the of commitment to their

partner, with those with more severe PTSD reporting higher levels of satisfaction. The researchers propose that the feelings of shame and lowered self-efficacy may have led to their increased neediness and increased attachment to their partner and thus causes them to feel increased commitment and satisfaction. This finding could help to explain the positive correlation found in the current study between PTSD symptoms and relationship satisfaction. In the current study, majority of the participants were women and reported being in dating relationships. According to the findings by Rhatigan et al. (2011), the current study's participants with PTSD symptoms may have reported higher levels of satisfaction because they feel more needy and attached to their partner.

For future studies, it is suggested that researchers use participants who are in an intimate relationship and who were married or cohabitating for a significant period of time. It may also be helpful to obtain data from both partners in the relationship instead of just one. In the current study, data was only obtained from the partner with a trauma history, while some previous studies used both partners (Allen et al., 2010 & Riggs et al., 1998). This could help us better understand the impact of the emotional changes associated with PTSD as relationship satisfaction could be better or worse depending on which partner was assessed.

Another unanswered question is the causal direction of the relationship between PTSD symptoms and relationship satisfaction. As previously stated, it is likely that there is a bidirectional relationship between PTSD symptoms and relationship dysfunction. The current study's results support the negative relationship between PTSD symptoms and relationship dysfunction for parent relationships but again, did not support a negative relationship between PTSD symptoms and intimate relationship dysfunction or peer dysfunction. Balderrama-Durbin and colleagues (2013) found that PTSD severity was related to the amount of support provided

by a partner. Specifically, a partner with PTSD was more likely to self-disclose if the other partner was supportive. The researchers speculated that partners who were happy in their relationships were more likely to be supportive and the support from a partner then promoted a safe environment for the PTSD partner to self-disclose. This self-disclosure then leads to lower PTSD severity. In this study, it is hypothesized that PTSD severity was impacted by the relationship, instead of the relationship being impacted by PTSD severity as predicted by the current study.

Polusny and colleagues (2014) also found similar results. They found that soldiers who were married before being deployed reported more severe PTSD symptoms upon their return than soldiers who were single. The researchers suggested that married soldiers, in happy and unhappy relationships, have more than themselves to worry about before and during deployment, and are more worried about what is going on at home than someone who is single. This caused increased stress before and during deployments which then may lead to increased PTSD symptoms later on. Polusny and colleagues (2014) indicated that being single served as a protective factor because single people tend to have less interpersonal stressors. Again, in this study, it hypothesized that the relationship was the contributing factor to PTSD severity.

The direction of this causal relationship needs further study. One possibility is that PTSD symptoms and relationship satisfaction could have a bidirectional relationship. Satisfaction in a relationship before a trauma could act as a protective factor from developing PTSD. On the other if someone does develop PTSD, relationship satisfaction may decrease because of the nature of the disorder (Riggs et al, 1998). Presently research on this association has found support for both directions of the relationship, supporting the theory that the relationship is possibly bidirectional.

PTSD and Arousal

Sub-hypothesis B, which was supported by several previous studies (Amdur et al., 2000; Litz et al., 2000; Litz and Miller, 2004; Wolf et al., 2009), predicted a significant positive relationship between PTSD symptoms and negative arousal, and a negative relationship between PTSD symptoms and positive arousal. Participants who reported having higher PTSD symptoms also reported feeling overall higher negative affect after viewing all of the images, and lower ratings of happiness when viewing pleasant pictures.

The first finding was similar to previous findings by Wolf et al. (2009) and Litz and Miller (2004) who found that their participants with PTSD presented with increased arousal to unpleasant stimuli. Participants in the current study who had higher PTSD symptoms reported feeling higher negative affect after viewing all of the images. Additionally, the second finding was similar to previous findings by Litz et al. (2000) and Amdur et al. (2000) who found that their participants with PTSD reported feeling less positive emotions when exposed to pleasant stimuli. Participants in the current study with higher PTSD symptoms also reported lower positive arousal when viewing pleasant images. These findings support Litz and Gray's (2001) modified information processing model - that people with PTSD may experience more intense negative emotions and attenuated positive emotions.

Arousal and Relationship Satisfaction

Sub-hypothesis c, which has not yet been supported by previous studies, predicted that there would be a negative relationship between negative arousal and relationship satisfaction, and a positive relationship between positive arousal and relationship satisfaction. This hypothesis was supported by heightened SAM excited scores to unpleasant images and decreased positive PANAS scores. In fact, participants who reported higher excitement/agitation when viewing

unpleasant pictures also reported lower satisfaction in intimate relationships. Also, participants who reported lower overall positive arousal after viewing all of the images also reported lower satisfaction in parent and peer relationships. These findings suggest that Litz and Gray's emotional numbing is related to relationship dysfunction. Yet, because no mediational relationships were found, it does not suggest that this type of emotional numbing is the cause of relationship dysfunction associated with PTSD symptoms. In fact, as the results suggest, emotional numbing may not be a mediational factor, and some other factor could be the cause. Because there is little research on the direct relationship between emotional numbing and relationship dysfunction, future research should examine this further and include other PTSD symptoms to examine if another factor may be linked to relationship dysfunction.

Yet, another surprising finding was that participants who reported lower happiness after viewing positive pictures also reported higher satisfaction in intimate relationships. This relationship was also the same for overall positive arousal after viewing all of the images. This finding was the opposite from what was expected and has not been reported in other similar published studies. As discussed previously, this result could be linked to the findings by Rhatigan et al. (2011), who found that women with PTSD were more committed and satisfied with their partner because they felt shame and decreased self-efficacy. Because emotional numbing is a symptom of PTSD, and because the majority of the participants in the current study were women with PTSD symptoms, it could be that the participants felt more needy in their relationship and thus were more committed and satisfied with their relationships as Rhatigan et al. (2011) suggest.

Limitations

There were several limitations in the current study. First, the sample in the current study was rather homogenous. The majority of participants were between the ages of 18 and 19, were female, and were Caucasian. Further studies on this topic should use participants that are diverse in age, gender, and race. Second, a large majority of the participants reported being single or dating, not married or cohabitating. As previously stated, this could lead to insignificant results because dating relationships are less likely to be as affected by mental illness as married or cohabitating relationships. Third, the three most common types of trauma reported by participants were emotional abuse (36), family deaths (34), and accidents (17). As discussed previously, it is important that future studies examine the impact of changes in emotions following PTSD in samples that include combat veterans as there may be characteristics of these individuals that make them particularly vulnerable to relationship dysfunction following trauma exposure. Fourth, although parent relationship satisfaction was negatively associated with PTSD symptoms as predicted, there may have been a confounding factor that could have linked these variables. Because majority of the participants were 18 years of age, their experiences with traumatic events most likely occurred during childhood and may have been due to a parents actions. If this were the case, then strain between a parent-child relationship may not be because of PTSD symptoms but because the parent was the perpetrator. This factor should be considered in future studies, and further analysis about the trauma's reported may be needed to avoid these type of confounds. Lastly, although some of the participants reported clinical levels of PTSD symptoms, it may be important to get a more in depth analysis of the participants PTSD levels. For example, the current study did not evaluate the length of time that participants had been dealing with their traumas or if the participants had received therapy for their traumas. A few

previous studies used participants who had been seeking help for PTSD or who had been diagnosed with PTSD (Carroll et al., 1985; Kashdan et al., 2006; Mihajlovic et al., 2005). This may be an important consideration for future studies.

Conclusions

The current study examined negative and positive affect in participants who reported a history of trauma by exposing them to pleasant and unpleasant images and measuring their emotional responses to the images. Results showed that sensitivity to negative affect and blunted positive affect did not mediate the relationship between PTSD symptoms and relationship dysfunction. Additionally, an unexpected finding was that PTSD symptoms and intimate relationship satisfaction was positively associated. It was hypothesized that the dating relationship status and the type of traumas reported may have affected the results of the current study.

Yet, support for Litz and Gray's (2001) information processing model was found by significant indirect relationships. Specifically, the current results showed that participants with higher PTSD symptoms also reported higher agitation when viewing unpleasant images and lower overall positive arousal after viewing all of the images. These participants also reported lower satisfaction in intimate relationships. These results suggest that people with higher PTSD symptoms may experience Litz and Gray's (2001) type of emotional numbing. Yet, the current study's findings suggest that Litz and Gray's emotional numbing may not mediate the relationship between PTSD symptoms and relationship dysfunction. There were several limitations to the study, so future research should use participants that have a wider range of trauma types that include combat trauma and should use participants who are in married or are cohabitating for significant period of time.

References

Akister, J., & Stevenson-Hinde, J. (1991). Identifying families at risk: Exploring the potential of the McMaster Family Assessment Device. *Journal of Family Therapy, 13*, 411–421. doi:10.1046/j..1991.00437

American Psychiatric Association (2013). *Diagnostic and Statistical Manual of Mental Disorders (5th ed.).* Washington, DC: Author.

American Psychiatric Association. (1994). *Diagnostic and Statistical Manual of Mental Disorders (4th ed.)*. Washington, DC: Author.

Alderfer, M. A., Navsaria, N., & Kazak, A. E. (2009). Family functioning and posttraumatic stress disorder in adolescent survivors of childhood cancer. *Journal of Family Psychology, 23(5)*, 717-725. doi:10.1037/a0015996

Allen, E. S., Rhoades, G. K., Stanley, S. M., & Markman, H. J. (2010). Hitting home: Relationships between recent deployment, posttraumatic stress symptoms, and marital functioning for army couples. *Journal of Family Psychology, 24*, 280-288. doi: 10.1037/a0019405

Amir, M., Kaplan, Z., & Kotler, M. (1996). Type of trauma, severity of posttraumatic stress disorder core symptoms, and associated features. *Journal of General Psychology, 123(4),* 341-351. doi:10.1080/00221309.1996.9921286

Amdur, R. L., Larsen, R., & Liverzon, I. (2000). Emotional processing in combat-related posttraumatic stress disorder: A comparison with traumatized and normal controls. *Journal of Anxiety of Disorders, 14*, 219-238. doi:10.1016/S0887-6185(99)00035-3

Arbisi, P. A., Kaler, M. E., Kehle-Forbes, S. M., Erbes, C. R., Polusny, M. A., & Thuras, P. (2012). The predictive validity of the PTSD Checklist in a nonclinical sample of combat-exposed National Guard troops. *Psychological Assessment, 24(4)*, 1034-1040. doi:10.1037/a0028014

Armsden, G. C., & Greenberg, M. T. (1987). The inventory of parent and peer attachment: Individual differences and their relationship to psychological well-being in adolescence. *Journal of Youth and Adolescence*, *16*, 427-455. doi:10.1007/BF02202939

Barr, A. B., & Simons, R. L. (2014). A dyadic analysis of relationships and health: Does couple-level context condition partner effects?. *Journal of Family Psychology, 28(4*), 448-459. doi:10.1037/a0037310

Balderrama-Durbin, C., Snyder, D. K., Cigrang, J., Talcott, G. W., Tatum, J., Baker, M., & ... Slep, A. M. S. (2013). Combat disclosure in intimate relationships: Mediating the impact of partner support on posttraumatic stress. *Journal of Family Psychology, 27(4),* 560-568. doi:10.1037/a0033412

Beck, J. (2010). *Interpersonal Processes in the Anxiety Disorders: Implications for Understanding Psychopathology and Treatment.* Washington, DC US: American Psychological Association. doi:10.1037/12084-000

Beck, J. G., Grant, D. M., Clapp, J. D., & Palyo, S. A. (2009). Understanding the interpersonal impact of trauma: Contributions of PTSD and depression. *Journal of Anxiety Disorders, 23*, 443-450. doi:10.1016/j.janxdis.2008.09.001

Beckham, J. C., Feldman, M. E., Kirby, A. C., Hertzberg, M. A., & Moore, S. D. (1997). Interpersonal violence and its correlates in Vietnam veterans with chronic posttraumatic stress disorder. *Journal of Clinical Psychology, 53*, 859–869. doi:10.1002/(SICI)1097-4679(199712)53:8<859::AID-JCLP11>3.0.CO;2-J

Blum, J.S., & Mehrabian, A. (1999). Personality and temperament correlates of marital satisfaction. *Journal of Personality, 67*, 93-125. doi:10.1111/1467-6494.00049

Carlson, E. B., Dalenberg, C., & McDade-Montez, E. (2012). Dissociation in posttraumatic stress disorder part I: Definitions and review of research. *Psychological Trauma: Theory, Research, Practice, And Policy*, *4(5),* 479-489. doi:10.1037/a0027748

Carroll, E. M., Rueger, D. B., Foy, D. W., & Donahoe, C. P. (1985). Vietnam combat veterans with posttraumatic stress disorder: Analysis of marital and cohabitating adjustment. *Journal of Abnormal Psychology, 94*, 329-337. doi:10.1037/0021-843X.94.3.329

Carvalho, S., Leite, J., Galdo-Álvarez, S., & Gonçalves, Ó. F. (2012). The emotional movie database (EMDB): A self-report and psychophysiological study. *Applied Psychophysiology and Biofeedback*, 37(4), 279-294. doi:10.1007/s10484-012-9201-6

Chambless, D. L. (2010). Posttraumatic stress disorder in an interpersonal context. In J. Beck (Ed.), *Interpersonal Processes in the Anxiety Disorders: Implications for Understanding Psychopathology and Treatment* (pp. 179-208). Washington, DC US: American Psychological Association. doi:10.1037/12084-007

Charuvastra, A., & Cloitre, M. (2008). Social bonds and posttraumatic stress disorder. *Annual Review of Psychology, 59*, 301-328. doi:10.1146/annurev.psych.58.110405.085650

Colden, A., Bruder, M., & Manstead, A. R. (2008). Human content in affect-inducing stimuli: A secondary analysis of the international affective picture system. *Motivation and Emotion*, *32(4)*, 260-269. doi:10.1007/s11031-008-9107-z

Cook, J. M., Riggs, D. S., Thompson, R., Coyne, J. C., & Sheikh, J. I. (2004). Posttraumatic stress disorder and current relationship functioning among World War II ex-prisoners of war. *Journal of Family Psychology, 18*, 36-45. doi: 10.1037/0893-3200.18.1.36

Dekel, R., & Solomon, Z. (2006). Marital relations among former prisoners of war: Contribution of posttraumatic stress disorder, aggression, and sexual satisfaction. *Journal of Family Psychology, 20*, 706-712. doi: 10.1037/0893-3200.20.4.709

Egendorf, A., Kadusehin, C., Laufer, R., Rothbart, G., & Sloan, L. (1981). *Legacies of Vietnam: Comparative adjustment of veterans and their peers* (5 vols.). New York: Center for Policy Research.

Erbes, C. R., Meis, L. A., Polusny, M. A., & Compton, J. S. (2011). Couple adjustment and posttraumatic stress disorder symptoms in National Guard veterans of the Iraq War. *Journal of Family Psychology, 25*, 479-487. doi: 10.1037/a0024007

Friedman, M. J., Resick, P. A., Bryant, R. A., & Brewin, C. R. (2011). Considering PTSD for DSM-5. *Depression and Anxiety, 28*(9), 750–769. doi: 10.1002/da.20767

Goff, B. S. N., Crow, J. R., Reisbig, A. M. J., & Hamilton, S. (2007). The impact of individual trauma symptoms of deployed soldiers on relationship satisfaction. *Journal of Family Psychology, 21*, 344-353. doi: 10.1037/0893-3200.21.3.344

Goodman, L. S., Corcoran, C., Turner, K., Yuan, N., & Green, B. L. (1998). Assessing traumatic event exposure: General issues and preliminary findings for the Stressful Life Events Questionnaire. *Journal of Traumatic Stress, 11*, 521-542. doi:10.1023/A:1024456713321

Horowitz, M. J. (2011). *Stress Response Syndromes: PTSD, Grief, Adjustment, and Dissociative Disorders (5th ed.)*. Lanham, MD US: Jason Aronson.

Jordan, B. K., Marmar, C. R., Faribank, J. A., Schlenger, W. E., Kulka, R., Hough, R. L., & Weiss, D. S. (1992). Problems in families of male Vietnam veterans with posttraumatic stress disorder. *Journal of Consulting and Clinical Psychology, 60*, 916-926. doi:10.1037/0022-006X.60.6.916

Karlson, C. W., Gallagher, M. W., Olson, C. A., & Hamilton, N. A. (2013). Insomnia symptoms and well-being: Longitudinal follow-up. *Health Psychology, 32(3),* 311-319. doi:10.1037/a0028186

Kashdan, T. B., Elhai, J. D., & Frueh, B. C. (2006). Anhedonia and emotional numbing in combat veterans with PTSD. *Behaviour Research and Therapy, 44*, 457-467. doi: 10.1016/j.brat.2005.03.001

Koenen, K. C., Stellman, J., Stellman, S. D., & Sommer, J. r. (2003). Risk Factors for Course of Posttraumatic Stress Disorder Among Vietnam Veterans: A 14-Year Follow-Up of American Legionnaires. *Journal of Consulting and Clinical Psychology, 71(6),* 980-986. doi:10.1037/0022-006X.71.6.980

Kulka, R. A., Schlenger, W. E., Fairbank, J. A., Hough, R. L., Jordan, K. B., Marmar, C. R., & Weiss, D. S. (1990). *The National Vietnam Veterans Readjustment Study: Tables of findings and technical appendices.* New York: Brunner/Mazel. doi: 6/j.brat.2005.03.001

Lang, P.J., Bradley, M.M., & Cuthbert, B.N. (2008). *International affective picture system (IAPS): Affective ratings of pictures and instruction manual.* Technical Report A-8. University of Florida, Gainesville, FL.

Litz, B. T. (1992). Emotional numbing in combat-related post-traumatic stress disorder: A critical review and reformulation. *Clinical Psychology Review*, *12(4)*, 417-432. doi:10.1016/0272-7358(92)90125-R

Litz, B. T., & Gray, M. J. (2001). Emotional numbing in posttraumatic stress disorder: Current and future research directions. *Australian and New Zealand Journal of Psychiatry, 36,* 198-204. doi:10.1046/j.1440-1614.2002.01002.x

Litz, B. T., Orsillo, S. M., Kaloupek, D., & Weathers, F. (2000). Emotional processing in posttraumatic stress disorder. *Journal of Abnormal Psychology, 109*, 26-39. doi: 10.1037//0021-843X.109.1.26

Mihajlovic, A. S., Crayton, J. W., & Neafsey, E. J. (2005). Selective numbing and hyperarousal of male and female Bosnian refugees with PTSD. *Anxiety Disorders, 19*, 383-402. doi:10.1016/j.janxdis.2004.03.004

Miller, M. W. & Litz, B. T. (2004). Emotional-processing in posttraumatic stress disorder II: Startle reflex modulation during picture processing. *Journal of Abnormal Psychology, 113*, 451-463. doi: 10.1037/0021-843X.113.3.451

Mills, B. & Turnbull, G. (2004). Broken hearts and mending bodies: The impact of trauma on intimacy. *Sexual and Relationship Therapy, 19*, 265-289. doi: 10.1080/146819901200645313

Monson, C. M., Fredman, S. J., & Dekel, R. (2010). Posttraumatic stress disorder in an interpersonal context. In J. Beck (Ed.), *Interpersonal Processes in the Anxiety Disorders: Implications for Understanding Psychopathology and Treatment* (pp. 179-208). Washington, DC US: American Psychological Association. doi:10.1037/12084-007

Monson, C. M., Macdonald, A., Vorstenbosch, V., Shnaider, P., Goldstein, E. S. R., Ferrier-Auerbach, A. G., & Mocciola, K. E. (2012). Changes in social adjustment with cognitive processing therapy: Effects of treatment and association with PTSD symptom change. *Journal of Traumatic Stress, 25*, 519-526. doi: 10.1002/jts.21735

Newman, M. G., & Erickson, T. M. (2010). Posttraumatic stress disorder in an interpersonal context. In J. Beck (Ed.), *Interpersonal Processes in the Anxiety Disorders: Implications for Understanding Psychopathology and Treatment* (pp. 179-208). Washington, DC US: American Psychological Association. doi:10.1037/12084-007

Pace, C., San Martini, P., & Zavattini, G. (2011). The factor structure of the Inventory of Parent and Peer Attachment (IPPA): A survey of Italian adolescents. *Personality and Individual Differences, 51(2),* 83-88. doi:10.1016/j.paid.2011.03.006

Penk, W. E., Robinowitz, R., Roberts, W. R., Patterson, E. T., Dolan, M. P., & Atldns, H. G. (1981). Adjustment differences among male substance abusers varying in degree of combat experience in Vietnam. *Journal of Consulting and Clinical Psychology, 49*, 426-437. doi:10.1037/0022-006X.49.3.426

Polusny, M. A., Erbes, C. R., Campbell, E. H., Fairman, H., Kramer, M., & Johnson, A. K. (2014). Pre-deployment well-being among single and partnered National Guard soldiers: The role of their parents, social support, and stressors. In S. M. Wadsworth, & D. S. Riggs (Eds.), *Military deployment and its consequences for families* (pp. 151-172). New York, NY, US: Springer New York. doi:10.1007/978-1-4614-8712-8_9

Preacher, K. J., & Hayes, A. F. (2008). Asymptotic and resampling strategies for assessing and comparing indirect effects in multiple mediator models. *Behavior Research Methods, 40(3)*, 879-891. doi:10.3758/BRM.40.3.879

Rhatigan, D. L., Shorey, R. C., & Nathanson, A. M. (2011). The impact of posttraumatic symptoms on women's commitment to a hypothetical violent relationship: A path analytic test of posttraumatic stress, depression, shame, and self-efficacy on investment model factors. *Psychological Trauma: Theory, Research, Practice, and Policy, 3(2),* 181-191. doi:10.1037/a0020646

Renshaw, D. R., Steketee, G., Rodrigues, C. S., & Caska, C. M. (2010). Posttraumatic stress disorder in an interpersonal context. In J. Beck (Ed.), *Interpersonal Processes in the Anxiety Disorders: Implications for Understanding Psychopathology and Treatment* (pp. 179-208). Washington, DC US: American Psychological Association. doi:10.1037/12084-007

Riggs, D. S., Bryne, C. A., Weathers, F. W., & Litz, B. T. (1998). The quality of the intimate relationships of male Vietnam veterans: Problems associated with posttraumatic stress disorder. *Journal of Traumatic Stress, 11*, 87-101. doi:10.1023/A:1024409200155

Rosenheck, R., & Fontana, A. (1994). Long-term sequelae of combat in World War II, Korea and Vietnam: A comparative study. In R. J. Ursano, B. G. McCaughey, & C. S. Fullerton (Eds.), *Individual and community responses to trauma and disaster: The structure of human chaos* (pp. 330-359). New York, NY, US: Cambridge University Press. doi:10.1017/CBO9780511570162.017

Solomon, Z., Dekel, R., & Zerach, G. (2008). The relationship between posttraumatic stress symptom clusters and marital intimacy among war veterans. *Journal of Family Psychology, 22*, 659-666. doi: 10.1037/a0013596

Sullivan, C. P., & Elbogen, E. B. (2013). PTSD Symptoms and Family Versus Stranger Violence in Iraq and Afghanistan Veterans. *Law And Human Behavior*, doi:10.1037/lhb0000035

Taft, C. T., Street, A. E., Marshall, A. D., Dowdall, D. J., & Riggs, D. S. (2007). Posttraumatic stress disorder, anger, and partner abuse among Vietnam combat veterans. *Journal of Family Psychology*, *21(2),* 270-277. doi:10.1037/0893-3200.21.2.270

Watson, D., Clark, L. A., & Tellegen, A. (1988). Development and validation of brief measures of positive and negative affect: The PANAS scales. *Journal of Personality and Social Psychology, 54(6),* 1063-1070. doi:10.1037/0022-3514.54.6.1063

Weathers, F. W., Litz, B. T., Herman, D. S., Huska, J. A., & Keane, T. M. (1993) *The PTSD checklist: Reliabliity, validity and diagnostic utility.* Paper presented at the Annual Convention of the International Society for Traumatic Stress Studies, San Antonio, TX.

Weathers, F.W., Litz, B.T., Keane, T.M., Palmieri, P.A., Marx, B.P., & Schnurr, P.P. (2013). *The PTSD Checklist for DSM-5 (PCL-5).* Scale available from the National Center for PTSD at www.ptsd.va.gov.

Wilcox, S. (2010). Social relationships and PTSD symptomatology in combat veterans. *Psychological Trauma: Theory, Research, Practice, And Policy, 2(3)*, 175-182. doi:10.1037/a0019062

Wilson, J.P. (1978). *Identity, ideology, and crises: The Vietnam veteran in transition* (Pt. 2). Cincinnati, OH: Disabled American Veterans.

Wolf, E. J., Miller, M. W., & McKinney, A. E. (2009). Emotional processing in PTSD: Heightened negative emotionality to unpleasant photographic stimuli. *The Journal of Nervous and Mental Disease, 197,* 419-426. doi:10.1097/NMD.0b013e3181a61c68

Table 1
Demographic Information

	Number	Percent
Gender		
Female	60	85.7
Male	10	14.3
Race		
Caucasian	41	58.6
African American	20	28.6
Hispanic American	5	7.1
Multi-Racial	2	2.9
International	2	2.9
Age (M = 18.79, SD = 1.30)		
18	41	58.6
19	19	27.1
20	2	2.9
21	2	2.9
22	4	5.7
23	2	2.9
Education		
Freshman	52	74.3
Sophomore	11	15.7
Junior	5	7.1
Senior	1	1.4
Other	1	1.4
Relationship Status		
Single	46	65.7
Committed	22	31.4
Living together	1	1.4
Married	1	1.4

Table 2
Trauma's Reported

Trauma Type	Number	Percent*
Illness	7	4.32
Life-Threatening Accident	17	10.49
Robbery	1	0.62
Family Death	34	21
Rape	5	3.09
Sexual Assault	12	7.41
Physical Abuse as a Child	9	5.56
Physical Abuse as an Adult	2	1.23
Emotional Abuse	36	22.22
Threatened with a Weapon	2	1.23
Witnessed a Trauma	13	8.02
Other Dangerous Situation	8	4.94
Other Frightening Situation	16	9.9

* Some participants indicated experiencing more than one type of trauma. These percentages are based on the entire number of traumas reported by all 70 participants.

Table 3

Means and standard deviation for data collected for each measure.

Measures	Means	SD
PCL Scores	16.40	14.50
IPPA Parent	18.9	23.77
IPPA Peer	12.23	10.35
CMSS Scores	83.26	33.57
PANAS Positive Affect 1	28.21	8.08
PANAS Negative Affect 1	22.06	6.64
PANAS Positive Affect 2	25.49	8.69
PANAS Negative Affect 2	22.34	7.79
PANAS Positive Affect 3	18.4	6.97
PANAS Negative Affect 3	22.53	8.15
PANAS Positive Affect 4	19.66	8.21
PANAS Negative Affect 4	19.9	7.54
SAM Excited Positive Pictures 1	82.46	31.18
SAM Excited Negative Pictures 1	80.8	32
SAM Excited Positive Pictures 2	79.67	36.19
SAM Excited Negative Pictures 2	83.1	36.63
SAM Happy Positive Pictures 1	118.41	25.39
SAM Happy Negative Pictures 1	71.7	28.19
SAM Happy Positive Pictures 2	116.64	26.89
SAM Happy Negative Pictures 2	69.09	28.46

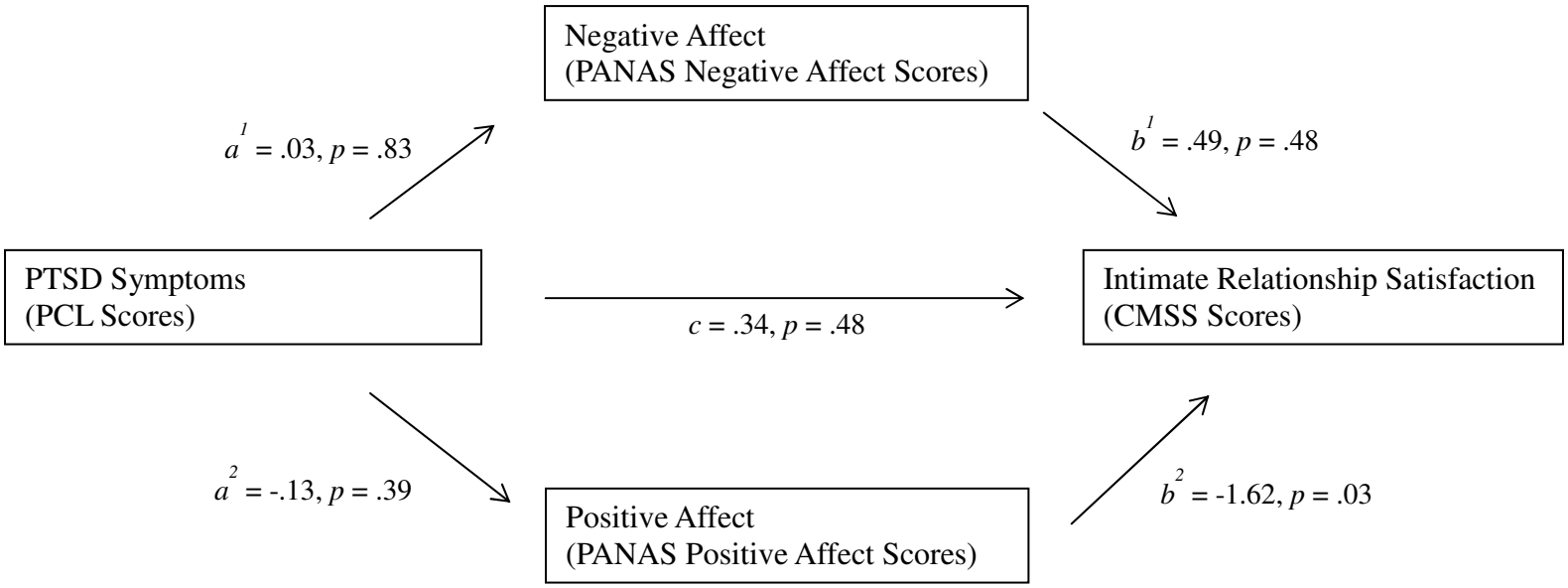


Figure 1: Statistical diagram illustrating the direct effects with the unstandardized coefficients and probabilities for these effects for PTSD symptoms, PANAS negative/positive affect scores, and intimate relationship satisfaction.

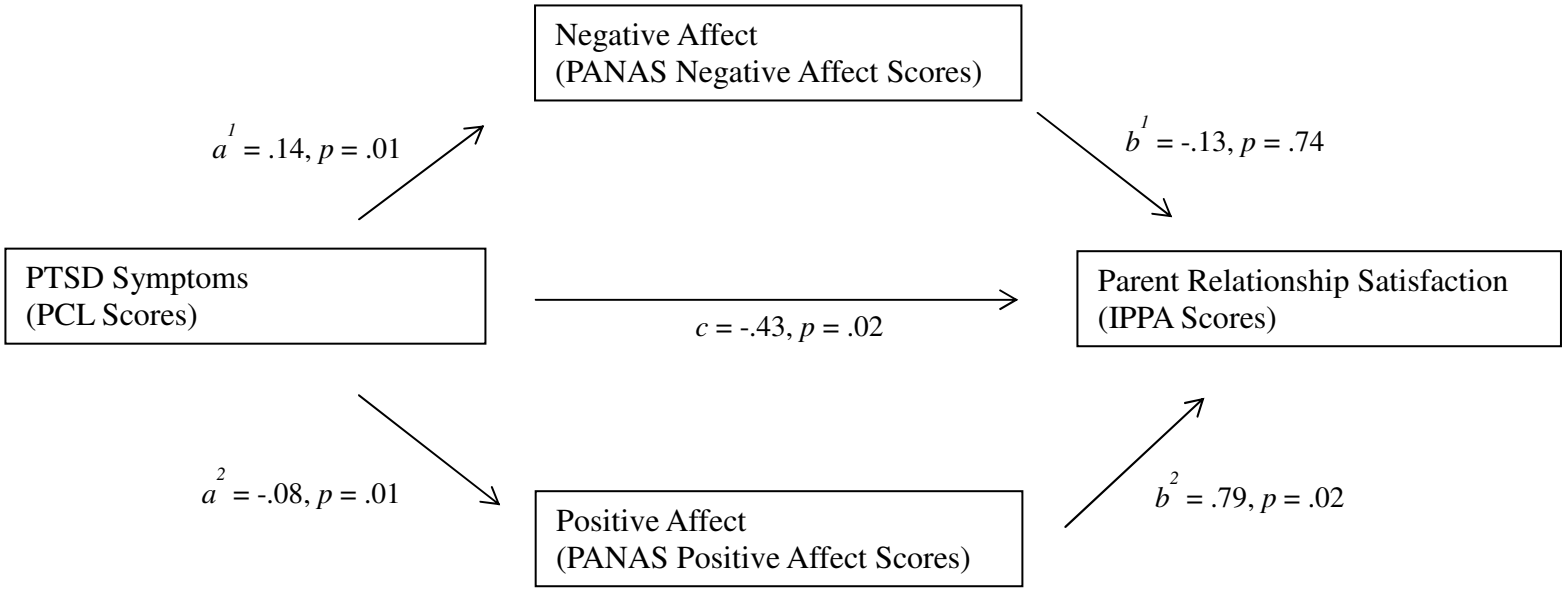


Figure 2: Statistical diagram illustrating the direct effects with the unstandardized coefficients and probabilities for these effects for PTSD symptoms, PANAS negative/positive affect scores, and parent relationship satisfaction.

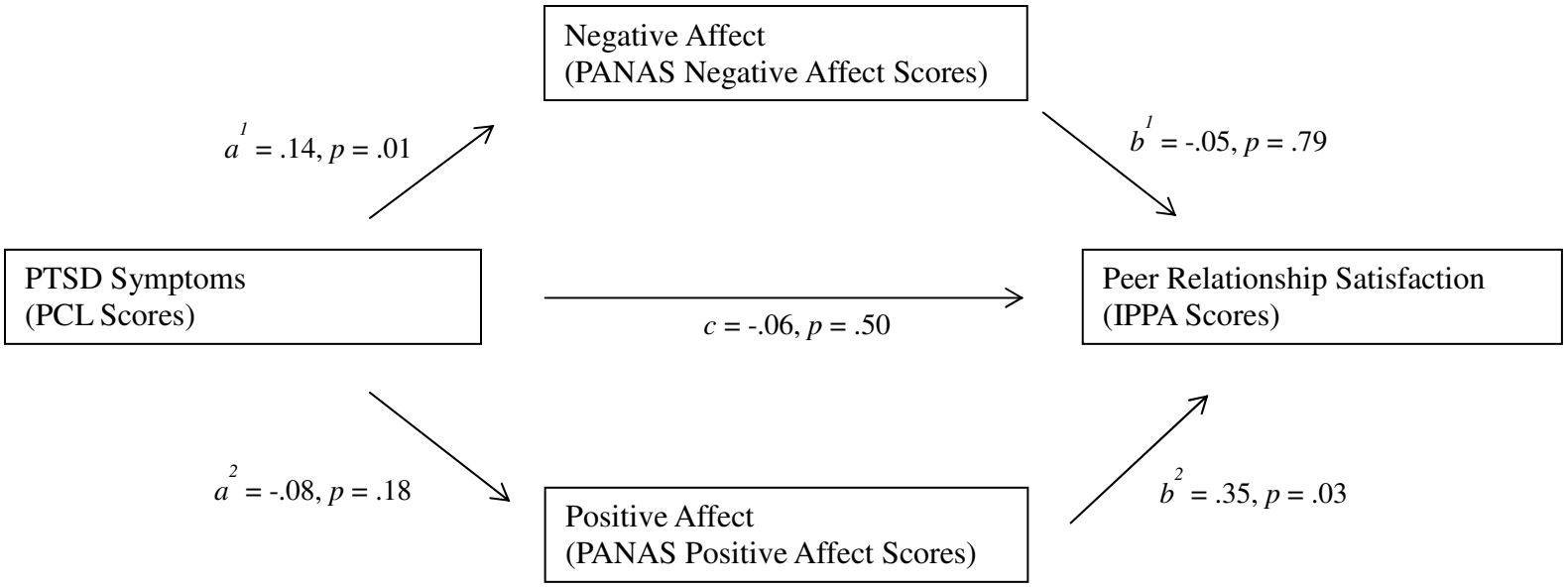


Figure 3: Statistical diagram illustrating the direct effects with the unstandardized coefficients and probabilities for these effects for PTSD symptoms, PANAS negative/positive affect scores, and peer relationship satisfaction.

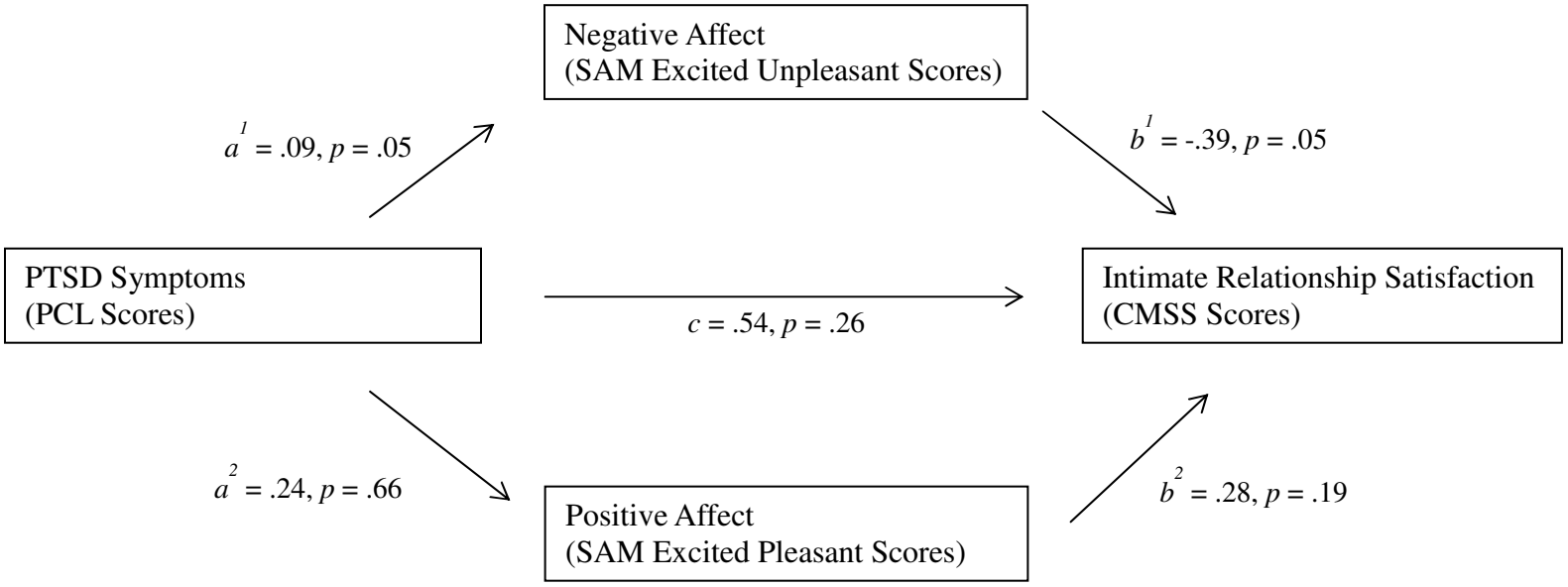


Figure 4: Statistical diagram illustrating the direct effects with the unstandardized coefficients and probabilities for these effects for PTSD symptoms, SAM excited scores for pleasant and unpleasant images, and intimate relationship satisfaction.

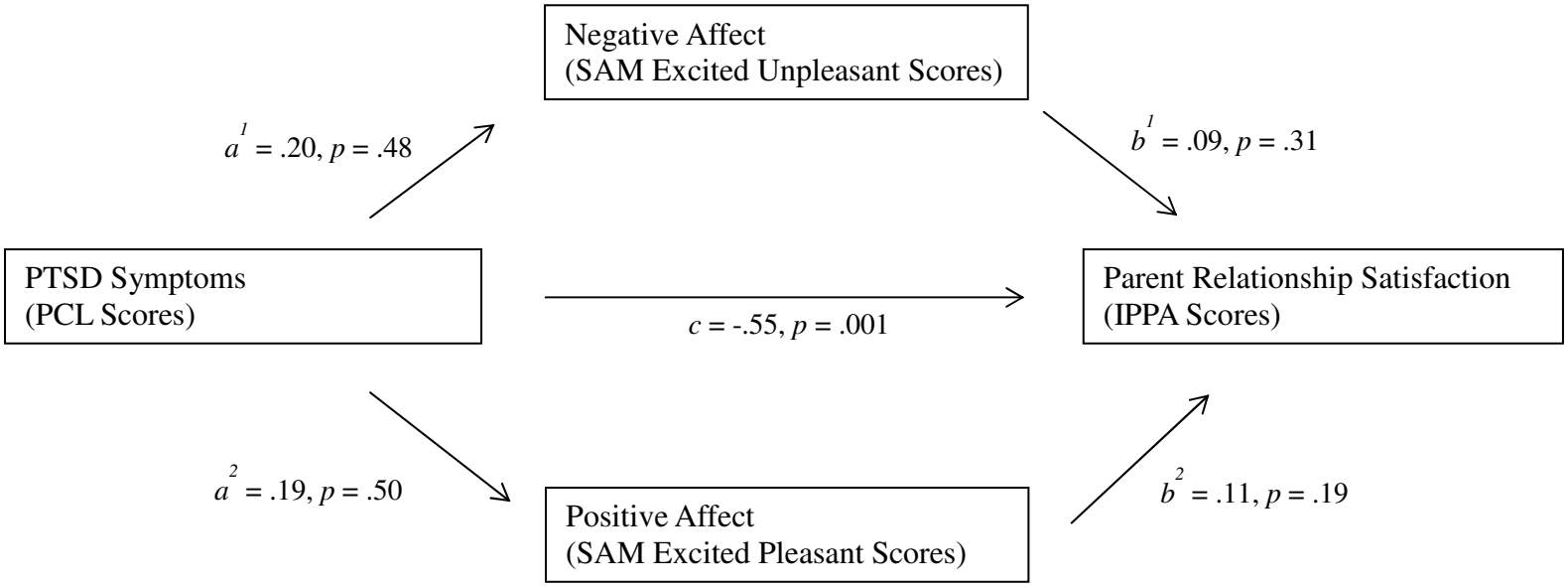


Figure 5: Statistical diagram illustrating the direct effects with the unstandardized coefficients and probabilities for these effects for PTSD symptoms, SAM excited scores for pleasant and unpleasant images, and parent relationship satisfaction.

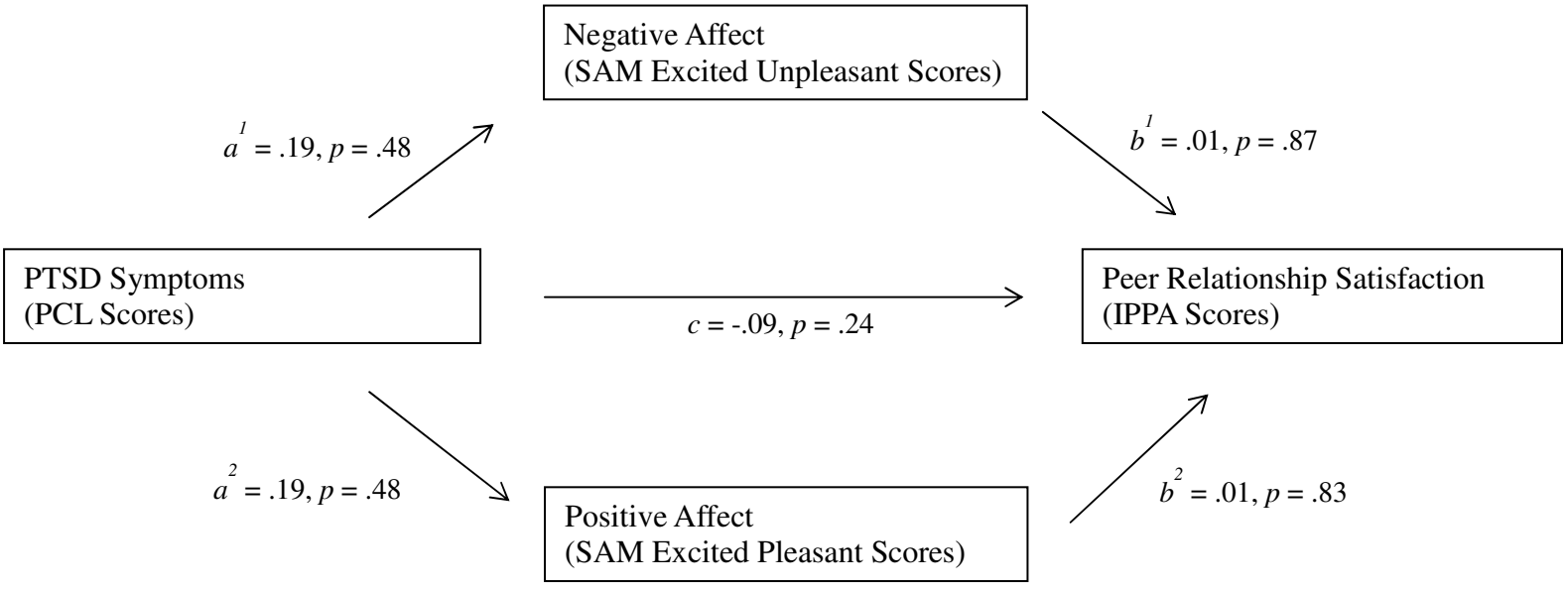


Figure 6: Statistical diagram illustrating the direct effects with the unstandardized coefficients and probabilities for these effects for PTSD symptoms, SAM excited scores for pleasant and unpleasant images, and peer relationship satisfaction.

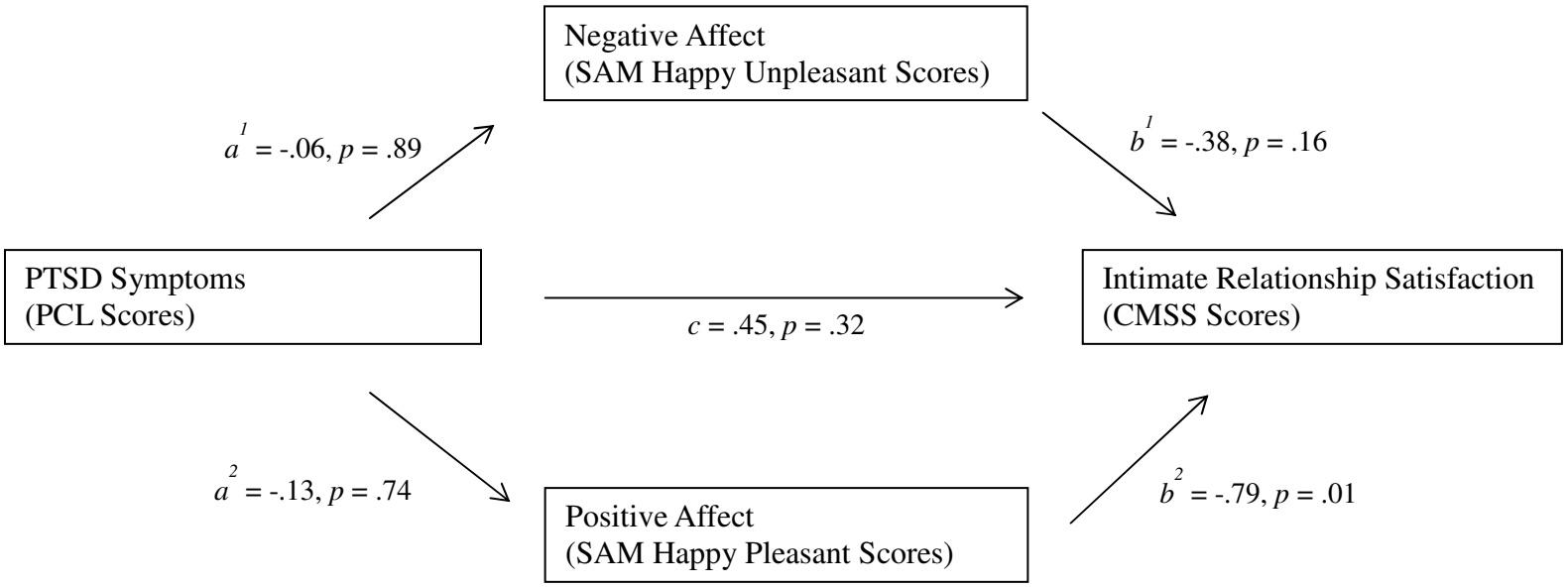


Figure 7: Statistical diagram illustrating the direct effects with the unstandardized coefficients and probabilities for these effects for PTSD symptoms, SAM happy scores for pleasant and unpleasant images, and intimate relationship satisfaction.

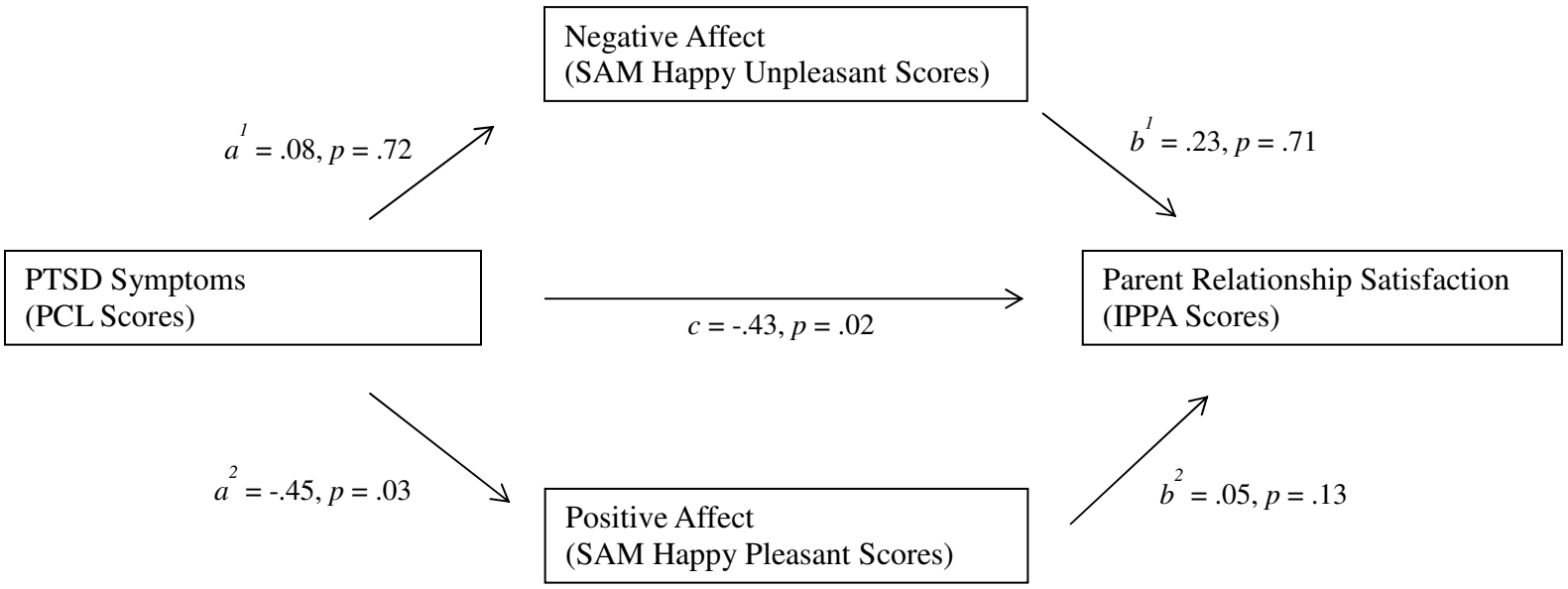


Figure 8: Statistical diagram illustrating the direct effects with the unstandardized coefficients and probabilities for these effects for PTSD symptoms, SAM happy scores for pleasant and unpleasant images, and parent relationship satisfaction.

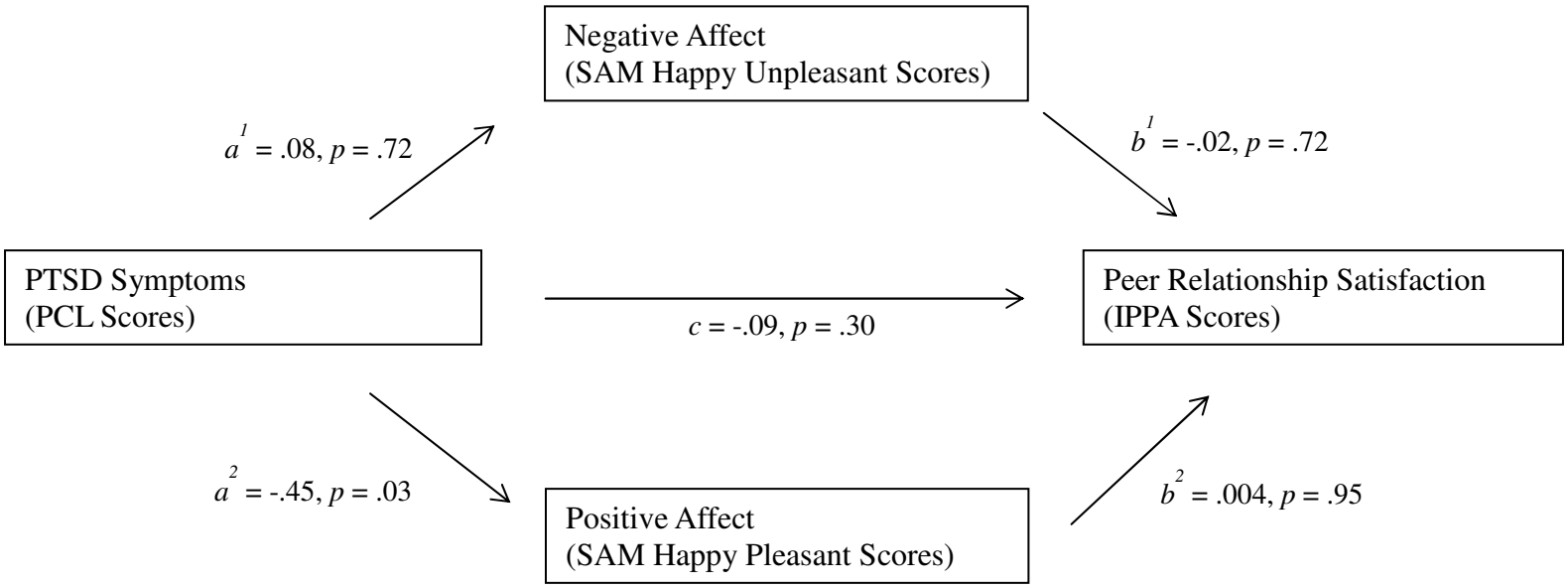


Figure 9: Statistical diagram illustrating the direct effects with the unstandardized coefficients and probabilities for these effects for PTSD symptoms, SAM happy for pleasant and unpleasant images, and peer relationship satisfaction.

Appendix A

IAPS Images

Positive: 1441, 1460, 1463, 1630, 1710, 1722, 1999, 2000, 2010, 2030, 2040, 2045, 2071, 2091, 2224, 2311, 2332, 2347, 2510, 8499

Negative: 2692, 2683, 2717, 3051, 3550.1, 6010, 6190, 6540, 6940, 9040, 9050, 9163, 9252, 9403, 9404, 9413, 9421, 9423, 9902, 9922

Appendix B

Demographic Questionnaire

Age:_____

Date of Birth:_____

Please circle your answers below.

Gender: Female Male

Ethnicity: European-American (Caucasian) African-American Hispanic-American

Native-American Asian-American Multi-Racial International _____

Current Level of Education: Freshman Sophomore Junior Senior Other _____

Are you in a committed relationship *(exclusively dating continuously for at least 3 months)*?

Yes No

If you circled yes, please check the box below that best describes your current status and indicate the length of the relationship below.

In a Committed Relationship but not living together	
Living with a partner but not married	
Married	

Length of Relationship: _____ Years _____Months

Are you currently taking any medication? Y N

If yes, what medication(s) are you taking? _____

_____

Appendix C

PTSD Check List for DSM-V – Civilian Version

Instructions: Below is a list of problems that people sometimes have in response to a very stressful experience. Please read each problem carefully and then circle one of the numbers to the right to indicate how much you have been bothered by that problem in the past month.

No.	Response	Not at all (0)	A little bit (1)	Moderately (2)	Quite a bit (3)	Extremely (4)
1.	Repeated, disturbing and unwanted memories of the stressful experience?					
2.	Repeated, disturbing dreams of a stressful experience?					
3.	Suddenly feeling or acting as if the stressful experience were actually happening again (as if you were actually back there reliving it)?					
4.	Feeling very upset when something reminded you of the stressful experience?					
5.	Having strong physical reactions (for example, heart pounding, trouble breathing, sweating)?					
6.	Avoid memories, thoughts, or feelings related to the stressful experience?					
7.	Avoiding external reminders of the stressful experience (for example, people, places, conversations, activities, objects, or situations)?					
8.	Trouble remembering important parts of the stressful experience?					
9.	Having strong negative beliefs about yourself, other people, or the world (for example, having thoughts such as: I am bad, there is something seriously wrong with me, no one can be trusted, the world is completely dangerous)?					

10.	Blaming yourself or someone else for the stressful experience or what happened after it?					
11.	Having strong negative feelings such as fear, horror, anger, guilt, or shame?					
12.	Loss of interest in activities that that you used to enjoy?					
13.	Feeling distant or cut off from other people?					
14.	Trouble experiencing positive feelings (for example, being unable to feel happiness, or having loving feelings for people close to you)?					
15.	Irritable behavior, angry outbursts, or acting aggressively?					
16.	Taking too many risks or doing things that could cause you harm?					
17.	Being “superalert” or watchful or on guard?					
18.	Feeling jumpy or easily startled?					
19.	Having difficulty concentrating?					
20.	Trouble falling or staying asleep?					

Appendix D

CMSS-R

Please use the following scale to indicate the degree of your agreement or disagreement with each of the statements below. Record your numerical answer to each statement in the space provided preceding the statement.

+4 = very strong agreement
+3 = strong agreement
+2 = moderate agreement
+1 = slight agreement
0 = neither agreement nor disagreement
-1 = slight disagreement
-2 = moderate disagreement
-3 = strong disagreement
-4 = very strong disagreement

____ 1. My partner and I agree on how we handle our finances.

_____ 2. I prefer doing things without my partner.

_____ 3. My partner is very loving and affectionate.

_____ 4. I regret being with my partner.

_____ 5. My partner satisfies me sexually.

_____ 6. I don't get the love and affection I want from my partner.

_____ 7. My partner and I agree on the friends with whom we associate.

_____ 8. My partner and I share the same basic philosophy of life.

_____ 9. I don't approve of the way my partner relates to my family.

_____ 10. My partner and I have similar ambitions and goals.

_____ 11. My partner and I have relationship difficulties.

_____ 12. I always confide in my partner.

_____ 13. If I were date again, I would pick my present partner.

_____ 14. My partner really gets on my nerves.

_____ 15. My partner and I kiss daily.

_____ 16. My partner and I do not communicate well with each other.

_____ 17. My relationship is not as good as most relationships.

_____ 18. My partner and I settle our disagreements with mutual give and take.

_____ 19. I am very happy with my relationship.

_____ 20. My partner and I seldom laugh together.

_____ 21. I am committed to my relationship.

_____ 22. My partner and I quarrel frequently.

_____ 23. My partner and I agree on how to spend our leisure time.

_____ 24. My partner and I often argue about finances.

_____ 25. My partner and I often disagree about major decisions.

_____ 26. I am pleased with my relationship with my partner.

_____ 27. My partner and I disagree on household chores.

_____ 28. My partner and I differ on our general values and beliefs.

_____ 29. My partner and I have a better relationship than most couples I know.

_____ 30. My partner's habits annoy me.

_____ 31. My partner and I disagree on sexual matters.

_____ 32. My partner and I agree on how we demonstrate affection towards each other.

_____ 33. I often contemplate ending my relationship.

_____ 34. My partner and I agree on our dealings with our parents.

_____ 35. My partner is generally understanding.

Appendix E

STRESSFUL LIFE EVENTS SCREENING QUESTIONNAIRE - REVISED

The items listed below refer to events that may have taken place at any point in your entire life, including early childhood. **If an event or ongoing situation occurred more than once, please record all pertinent information about additional events on the last page of this questionnaire.** (Please print or write neatly).

1. Have you ever had a life-threatening illness?

No _____ Yes _____

Duration of Illness _____

Describe specific illness _____

2. Were you ever in a life-threatening accident?

No _____ Yes _____

Describe accident_____

Did anyone die? ____

3. Was physical force or a weapon ever used against you in a robbery or mugging?

No _____ Yes _____

Describe physical force (e.g., restrained, shoved) or weapon used against you.

_____

Did anyone die? _____

4. Has an immediate family member, romantic partner, or very close friend died because of accident, homicide, or suicide?

No _____ Yes _____

How did this person die? _____

Have you had a miscarriage? No _____ Yes _____

5. At any time, has anyone (parent, other family member, romantic partner, stranger or someone else) ever <u>physically forced</u> you to have intercourse, or to have oral or anal sex against your wishes, or when you were helpless, such as being asleep or intoxicated?

No _____ Yes _____

If yes, how many times? 1 _____, 2-4 _____, 5-10 _____, more than 10_____

If repeated, over what period? 6 mo. or less _____, 7 mos.-2 yrs. _____, more

than 2 yrs. but less than 5 yrs. _____, 5 yrs. or more _____.

6. Other than experiences mentioned in earlier questions, has anyone ever touched private parts of your body, made you touch their body, or tried to make you to have sex against your wishes?

No _____ Yes _____

If yes, how many times? 1 _____, 2-4 _____, 5-10 _____, more than 10_____

If repeated, over what period? 6 mo. or less _____, 7 mos.-2 yrs. _____, more

than 2 yrs. but less than 5 yrs. _____, 5 yrs. or more _____.

7. When you were a child, did a parent, caregiver or other person ever slap you repeatedly, beat you, or otherwise attack or harm you?

No _____ Yes_____

If yes, how many times? 1 _____, 2-4 _____, 5-10 _____, more than 10 _____

If repeated, over what period? 6 mo. or less _____ , 7 mos.- 2 yrs. _____, more

than 2 yrs. but less than 5 yrs _____, 5 yrs. or more _____.

8. As an adult, have you ever been kicked, beaten, slapped around or otherwise physically harmed by a romantic partner, date, family member, stranger, or someone else?

No _____ Yes _____

If yes, how many times? 1 _____, 2-4 _____, 5-10 _____, more than 10_____

If repeated, over what period? 6 mo. or less _____, 7 mos.- 2 yrs. _____, more

than 2 yrs. but less than 5 yrs. _____ , 5 yrs. or more _____.

9. Has a parent, romantic partner, or family member repeatedly ridiculed you, put you down, ignored you, or told you were no good?

No _____ Yes _____

If yes, how many times? 1 _____, 2-4 _____, 5-10 _____, more than 10_____

If repeated, over what period? 6 mo. or less _____, 7 mos.- 2 yrs. _____, more

than 2 yrs. but less than 5 yrs. _____ , 5 yrs. or more _____.

10. Other than the experiences already covered, has anyone ever <u>threatened</u> you with a weapon like a knife or gun?

No _____ Yes _____

If yes, how many times? 1 _____ , 2-4 _____ , 5-10 _____, more than 10_____

If repeated, over what period? 6 mo. or less _____, 7 mos.- 2 yrs. _____, more

than 2 yrs. but less than 5 yrs. _____, 5 yrs. or more _____.

11. Have you ever been present when another person was killed? Seriously injured? Sexually or physically assaulted?

No _____ Yes _____

Please describe what you witnessed _____

Was your own life in danger? _____

12. Have you ever been in any other situation where you were seriously injured or your life was in danger (e.g., involved in military combat or living in a war zone)?

No_____ Yes_____

Please state what occured. _____

_____

13. Have you ever been in any other situation that was extremely frightening or horrifying, or one in which you felt extremely helpless, that you haven't reported?

No_____ Yes_____

Please describe. _____

_____

The interviewer should determine if the respondent is reporting the same incident in multiple questions, and should record it in the most appropriate category.

Appendix F

Inventory of Parent and Peer Attachment

Respondents indicate whether the following items are *almost always or always true, often true, sometimes true, seldom true,* or *almost never or never true.*

Section l

1. My parents respect my feelings.
2. I feel my parents are successful as parents.
3. I wish I had different parents.
4. My parents accept me as I am.
5. I have to rely on myself when I have a problem to solve.
6. I like to get my parents' point of view on things I'm concerned about.
7. I feel it's no use letting my feelings show.
8. My parents sense when I'm upset about something.
9. Talking over my problems with my parents makes me feel ashamed or foolish.
10. My parents expect too much from me.
11. I get upset easily at home.
12. I get upset a lot more than my parents know about
13. When we discuss things, my parents consider my point of view.
14. My parents trust my judgment.
15. My parents have their own problems, so I don't bother them with mine.
16. My parents help me to understand myself better.
17. I tell my parents about my problems and troubles.
18. I feel angry with my parents.
19. I don't get much attention at home.

20. My parents encourage me to talk about my difficulties.

21. My parents understand me.

22. I don't know whom I can depend on these days.

23. When I am angry about something, my parents try to be understanding.

24. I trust my parents.

25. My parents don't understand what I'm going through these days.

26. I can count on my parents when I need to get something off my chest.

27. I feel that no one understands me.

28. If my parents know something is bothering me, they ask me about it.

Section II

1. I like to get my friends' point of view on things I'm concerned about.

2. My friends sense when I'm upset about something.

3. When we discuss things, my friends consider my point of view

4. Talking over my problems with my friends makes me feel ashamed or foolish.

5. I wish I had different friends.

6. My friends understand me.

7. My friends encourage me to talk about my difficulties.

8. My friends accept me as I am.

9. I feel the need to be in touch with my friends more often.

10. My friends don't understand what I'm going through these days.

11. I feel alone or apart when I am with my friends.

12. My friends listen to what I have to say.

13. I feel my friends are good friends.

14. My friends are fairly easy to talk to.

15. When I am angry about something, my friends try to be understanding.

16. My friends help me to understand myself better.

17. My friends are concerned about my well-being.

18. I feel angry with my friends.

19. I can count on my friends when I need to get something off my chest.

20. I trust my friends.

Appendix G

The PANAS

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

1	2	3	4	5
very slightly or not at all	a little	moderately	quite a bit	extremely

_____interested	_____distressed
_____excited	_____upset
_____strong	_____guilty
_____scared	_____hostile
_____enthusiastic	_____proud
_____irritable	_____ alert
_____ashamed	_____ inspired
_____nervous	_____determined
_____attentive	_____jittery
_____active	_____ afraid

Appendix H

SAM