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The Impact of PTSD on Veterans' Family Relationships: Mechanisms of Distress and Available Treatments

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**The Impact of PTSD on Veterans' Family Relationships:
Mechanisms of Distress and Available Treatments**

**Senior Project submitted to
The Division of Social Studies
of Bard College
by
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Annandale-on-Hudson, NY

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Abstract

When veterans return home from war with PTSD, the disorder can have detrimental effects on their close family relationships. Researchers have proposed different mechanisms underlying the distress experienced by partners and children of veterans with PTSD in the hopes that these mechanisms can be targeted in treatment. The purpose of this project is to review and synthesize the current literature on these mechanisms of distress, as well as the treatments that have been designed to address them. This review examines several key factors that account for veterans' relationship distress, including the important factors of intimacy and aggression. Due to the emotional numbing symptoms of PTSD, veterans have a difficult time experiencing emotions and communicating them to their partners, which can hinder the development of intimacy in the relationship. Through an increased propensity to perceive threat and a loss of self-monitoring, the hyperarousal symptoms of PTSD can lead to intimate partner aggression. A number of couple-based treatments have been developed for veterans with PTSD and their partners, referred to as Behavioral Conjoint Therapies. These interventions are currently only in their pilot stages, but address some of the key mechanisms of distress for veterans and their partners, including intimacy and communication.

Chapter One: Introduction

Combat-related Posttraumatic Stress Disorder (PTSD) has been of interest to psychologists since long before a consistent conceptualization of the disorder had been established. During the American Civil War, it was labeled as “irritable heart,” and in the post-war period as “soldier’s heart.” Around the time of World War I, the condition had received several names, including “war neurosis,” “combat fatigue,” and “shell shock.” While some scientific studies of psychological disturbances in combatants, prisoners of war, and survivors of concentration camps were done around the World War II era, researchers had not yet made a connection between combat and other types of trauma. It was only after the Vietnam War that advocates of Vietnam veterans and rape survivors joined with scholars to create the budding scientific literature that led to the conceptualization of PTSD (Keane & Barlow, 2002, p. 419-420). Since then, the first Gulf War and particularly the wars in Iraq and Afghanistan have brought record numbers of veterans reporting PTSD. Between 1999 and 2004 alone, the number of veterans reporting PTSD rose from 120,265 to 215,871, which is a 79.5% increase (Rosenheck & Fontana, 2007). Some of the rise in rates of PTSD during Operation Iraqi Freedom and Operation Enduring Freedom (OIF/OEF) is thought to result from the fact that there are no sanctuaries in these wars, and death could come at any moment (Paulson & Krippner, 2007, p. 19). Along with this dramatic rise in rates of PTSD among combat veterans comes a new wealth of scientific literature studying the disorder within the military population.

While there is a vast literature covering diverse aspects of combat-related PTSD, an issue of particular importance is the disorder’s manifold effects on the returning veteran’s family life. Within previous generations of war veterans, PTSD has been linked to relationship distress, poor communication, sexual dysfunction, lower levels of intimacy, and intimate partner violence

(Galovski & Lyons, 2004; Monson, Taft, & Fredman, 2009). Recent studies with veterans returning from Iraq and Afghanistan have found similar relationship impairment (Goff, Crow, Reisbig, & Hamilton, 2007; Erbes, Meis, Polusny, & Compton, 2011). In a large-scale, longitudinal study of over 88,000 soldiers returning from Iraq, veterans' concerns about interpersonal conflict increased fourfold within 6 months (Milliken, Auchterlonie, & Hoge, 2007). From these studies showing a connection between combat-related PTSD and relationship impairment, it is clear that the disorder can have interpersonal as well as intrapersonal consequences.

PTSD Symptoms

In order to gain a better understanding of the influence of PTSD on veterans' interpersonal relationships, it is beneficial to review the symptoms of the disorder itself. In the current edition of the DSM (DSM IV-TR; American Psychiatric Association, 2000), a diagnosis of PTSD consists of three distinct symptom clusters, which reflect (a) reexperiencing of the traumatic event (e.g. flashbacks, nightmares), (b) avoidance of reminders of the event and emotional numbing (e.g. feelings of detachment from others), and (c) hyperarousal (e.g. hypervigilance; for a more detailed description of the PTSD symptoms, please refer to the Appendix). It is important to note that the proposed revision to the PTSD criteria in the DSM-V involves separating the active avoidance and emotional numbing symptoms into two distinct clusters, which may help reduce spurious diagnoses of PTSD due to comorbidity with depression (Forbes et al., 2011). These distinct symptom clusters have been shown to differentially affect the trajectory of the disorder as a whole (Schell, Marshall, & Jaycox, 2004), as well as the

relationship adjustment of the person with the disorder (Taft, Schumm, Panuzio, & Proctor, 2008).

Purpose and Scope of Project

Addressing the issue of how PTSD affects veterans' family relationships is of critical importance. Not only will it provide a better understanding of the extensive negative effects of facing combat trauma, but it also holds practical implications for veterans' care upon returning home. The quality of veterans' family functioning has been shown to predict their response to PTSD treatment (Evans, Cowlshaw, Forbes, Parslow, & Lewis, 2010), and so addressing the veteran's family environment as a part of treatment is beneficial. Currently, treatments are being developed that target the PTSD symptoms and relationship distress in tandem (e.g. cognitive-behavioral conjoint therapy; Monson & Fredman, 2012). Treatments aimed at alleviating the relationship distress of veterans with PTSD will be maximally effective when they target the specific mechanisms underlying that distress. Because of this, the current project endeavors to identify the mechanisms of distress in relationships of veterans with PTSD, and to explicate the current research on these mechanisms.

The scope and structure of the project are dictated by three research questions: (1) Through what specific mechanisms do veterans' PTSD symptoms affect their relationships with their partners? (2) How do veterans' PTSD symptoms impact their children? (3) What are the current treatments for PTSD that involve veterans' family members, and what is the efficacy of these treatments? Each of these questions is addressed through a review and synthesis of the relevant literature. The first research question is addressed in Chapters 2 and 3. Chapter 2 focuses on the key relationship factors that can be affected by PTSD symptoms, and Chapter 3

examines additional factors associated with the PTSD that may cause distress in veterans' partners. The second research question is addressed in Chapter 4, which elucidates the adverse effects of PTSD on veterans' children, as well as the mechanisms underlying those effects. Finally, the third research question is addressed in Chapter 5, which provides an overview of the current PTSD treatments involving veterans' family members and an assessment of their efficacy.

Chapter Two: Key Relationship Factors Affected by Veterans' PTSD Symptoms

Because PTSD is a complex disorder consisting of different types of symptoms, it can affect veterans' intimate relationships through a number of distinct mechanisms. One effective way to categorize these mechanisms is by first identifying key factors that influence the health of relationships, and then reviewing the research on veterans with PTSD that relate to these factors. The current chapter is divided into sections, with each focusing on a key relationship factor that can be affected by veterans' PTSD symptoms: Attachment, Intimacy, Communication, Shared Activities, Sexual Relations, and Aggression. As intimacy is a particularly important relationship factor, it should be noted that many of the other factors influence veterans' partner relationships through their effects on intimacy.

Attachment

Attachment seems to be a useful concept in examining the intersection between combat veterans' PTSD symptoms and their relationship functioning. Indeed, several researchers have focused on attachment when studying the interpersonal effects of the disorder (e.g. Dekel, 2007). In order to gain a better understanding of the role that attachment plays in veterans' relationships upon returning home, it is first important to review the principles of attachment theory as they relate to adult relationships. Although attachment theory was originally established as a framework for understanding the development of early relationships, Bowlby (1988) has suggested that the basic functions of the attachment system remain operating throughout adulthood. Akin to how children develop a sense of security from their primary caregivers, "adults will derive a sense of security from becoming emotionally and behaviorally interdependent with a romantic partner who is uniquely committed to them and deeply invested

in their welfare” (Collins & Feeney, 2004, p. 167). Researchers of adult attachment typically categorize attachment styles based on the underlying dimensions of anxiety and avoidance. The anxiety dimension involves a person’s sense of self-worth and feelings of acceptance by others, with high anxious attachment associated with low self-worth and an intense fear of being rejected. The avoidance dimension reflects the degree to which a person approaches intimacy and interdependence with others, with high avoidance associated with low willingness to seek intimacy. A person with a secure attachment style will be low on both attachment anxiety and avoidance, and this will manifest as an appropriate level of self-confidence and a comfort with both interdependence and autonomy (Collins & Feeney, 2004, p. 167).

Several studies have demonstrated a clear link between attachment style and key relationship variables. For instance, Pielage, Luteijn and Arrindell (2005) found in a Dutch study that among both clinical and community samples, attachment security was positively associated with self-reported intimacy, and attachment insecurity was negatively associated with self-reported intimacy. Further, Grabill and Kerns (2000) found using self-report measures that the securely attached group scored higher than the insecurely attached groups on levels of self-disclosure, responsiveness to others’ disclosure, and feeling understood and validated by others. One main limitation of these studies is their cross-sectional nature, which limits an understanding of the variables’ development through time. Additionally, they rely on self-report data, which can be subject to a desirability bias. However, other studies have validated the association between attachment and intimacy using longitudinal design (Collins, Cooper, Albino, & Allard, 2002), and have validated the association between attachment and self-disclosure using observational measures (Keelan, Dion, & Dion, 1998). These links between secure attachment and relationship variables make sense, given that secure individuals tend to have positive beliefs

about their partner's supportiveness and trustworthiness. However, just as secure attachment fosters intimacy and communication, insecure attachment characterized by high anxiety and avoidance can impair these interpersonal processes (Mikulincer & Shaver, 2007, p. 287-299).

Keeping in mind how attachment relates to intimate relationships, it is then important to consider the typical attachment styles in combat veterans with PTSD. Renaud (2008) examined this in a study with Vietnam veterans, in which he assessed PTSD symptoms, cognitive distortions, and attachment using two different measures. The study found that combat veterans with PTSD were significantly elevated in levels of avoidant attachment, with nearly 90% of veterans endorsing high avoidance. While the general population falls evenly across the four attachment styles, 96% of veterans endorsed an insecure attachment characterized by high levels of avoidance or anxiety. Further, 67% of all veterans identified as having the fearful attachment style using the scale developed by Hazan and Shaver (1987). Fearful attachment involves high levels of both attachment anxiety and attachment avoidance, and individuals with this style tend to have a low sense of self-worth, view attachment figures as unreliable, and desire intimacy but avoid putting themselves in a situation where they are vulnerable to rejection (Collins & Feeney, 2004, p. 167). This suggests that a large number of veterans with PTSD actually desire intimacy in their relationships but at the same time avoid it, perhaps because they fear their partner's unavailability or rejection.

In addition to observing higher levels of attachment insecurities among veterans with PTSD, researchers have noted similar insecurities in their wives. Dekel (2010) investigated levels of self-differentiation in wives of Israeli ex-prisoners of war (POWs) with PTSD. The term "self-differentiation" refers to one's propensity to favor intimacy, autonomy, or maintain a balance of the two in a relationship. High levels of fusion, or over-involvement with the partner,

conceptually lines up with a high degree of anxious attachment, while high levels of detachment, or self-focus and withdrawal, conceptually lines up with a high degree of avoidant attachment. Along with the conceptual similarities, self-differentiation has been shown to correlate highly with attachment style (Thorberg & Lyvers, 2010). Dekel's (2010) study found that the wives of the ex-POWs with PTSD showed both more fusion and detachment than the wives of the ex-POWs without PTSD, and that these greater extremes of differentiation were associated with higher mental and marital distress. Further, a study by Ein-Dor, Doron, Solomon, Mikulincer, and Shaver (2010) found that greater attachment anxiety and avoidance in wives of Israeli ex-POWs were significantly associated with greater PTSD symptom severity in their husbands. These studies show a clear association between veterans' PTSD symptoms and higher levels of attachment insecurities in their wives. This is an important issue because wives' attachment insecurities may negatively affect relationship variables in much the same way that veterans' attachment insecurities do. Further, Riggs and Riggs (2011) have suggested that there may be an interaction between one partner's avoidant attachment and the other's anxious attachment, which could lead to a demand-withdrawal communication pattern. The potential negative effects of this pattern on the relationship will be explored in the section on communication.

It is important to note that a key limitation of these studies concerning PTSD and attachment characteristics is that they are cross-sectional, which precludes any judgments about the directionality of their relationship. While it seems possible that PTSD symptoms can cause the veterans to excessively rely on or withdraw from the partner, it is equally possible that lower relationship support stemming from preexisting attachment insecurities can lead to more severe PTSD symptoms in the veteran. For instance, Brewin, Andrews, and Valentine (2000) found in a meta-analysis on the risk factors for PTSD that a lack of social support directly after the trauma

was one of the strongest predictors of developing PTSD. Since those high in anxious and avoidant attachment perceive less social support (Mikulincer & Shaver, 2007, p. 178), this suggests that attachment insecurity is a risk factor for the development of PTSD. However, in order to examine this relationship more closely, it is crucial to use research that implements a longitudinal design. A recent study by Solomon, Dekel, & Mikulincer (2008) assessed Israeli ex-POWs' PTSD symptoms and attachment characteristics on two occasions that were twelve years apart. They found that PTSD symptoms from the initial measurement predicted attachment avoidance twelve years later significantly better than attachment avoidance had predicted PTSD symptoms. While this does not exactly show that these attachment insecurities are caused by PTSD, it offers evidence that they can be affected by it. This is an intriguing finding because it suggests a degree of instability of attachment style through time, which opposes much attachment theory.

Given that PTSD seems to have effects on the attachment characteristics of veterans, it is then essential to investigate the nature of these effects by looking at some of the symptoms associated with the disorder. In a Canadian study of trauma victims recruited from emergency rooms, Beniot, Bouthillier, Moss, Rousseau, and Brunet (2010) found that emotion regulation strategies mediated the association between attachment security and PTSD symptoms. The researchers suggest that the anxious side of attachment insecurity is associated with an over-attention to one's emotional experience, while the avoidant side is associated with emotionally distant ways of coping. Wei, Vogel, Ku, and Zakalik (2005) have empirically supported these ideas. Using undergraduate participants, they found that the association between attachment anxiety and interpersonal problems is mediated by emotion reactivity, which "reflects the degree to which a person responds to environmental stimuli with emotion flooding, emotion lability, or

hypersensitivity” (p. 16). Conceptually, this emotion reactivity overlaps a great deal with the PTSD symptom clusters of reexperiencing and hyperarousal, which involve a flooding of intrusive distressing thoughts and an exaggerated startle response to the perception of threat. This study suggests that emotion reactivity explains part of the relationship between attachment anxiety and interpersonal problems. Although the study is of undergraduates that do not have PTSD, it suggests that the severe emotion reactivity difficulties of veterans with PTSD are likely implicated in their interpersonal problems. The mechanism through which this may be occurring will be more thoroughly examined in the section on aggression.

In addition, Wei, Vogel, Ku, and Zakalik (2005) found that the association between attachment avoidance and interpersonal problems is mediated by emotional cutoff, which reflects a choice to isolate oneself from others or one's own emotions when interpersonal interactions or internal emotional experiences are too intense. The concept of emotional cutoff lines up considerably with the avoidance and emotional-numbing cluster of PTSD, which involve efforts to avoid thoughts, feelings, and conversations associated with the trauma as well as feelings of detachment from others. This study suggests that the emotional cutoff difficulties associated with attachment avoidance may explain some of the interpersonal problems of veterans with PTSD. It is interesting to note that in a study by Ghafoori, Hierholzer, Howsepian, and Boardman (2008), PTSD symptoms were significantly associated with attachment avoidance but not attachment anxiety, which suggests that PTSD, through emotional cutoff, may play a larger role in leading to attachment avoidance than anxiety. The way in which emotional cutoff difficulties likely affect one's relationship will be explored in the sections on Intimacy and Communication.

Along with these emotional regulation strategies, there are certain cognitive distortions associated with PTSD that relate to attachment. For example, in Renaud's (2008) study of

attachment characteristics of veterans with PTSD, the cognitive distortion of the world being completely dangerous significantly contributed to attachment avoidance. Given that a component of PTSD involves an increased propensity to perceive threat, this finding may suggest that the trauma affects attachment in part by undermining one's basic trust in others. The veteran may then be avoiding interpersonal contact with his or her significant other because he or she has low confidence that the partner will be able provide help or caring. Renaud notes that attachment anxiety and avoidance are conceptualized as operating on a more subconscious level than the cognitive distortions associated with PTSD (p. 3). Further, Solomon and colleagues (2008) mention that in order to better match the effects of the PTSD symptoms, attachment orientations would have to be seen more as cognitive schema, which are more malleable than attachment theory suggests (p. 1432).

Given these considerations, it is crucial to point out that attachment theory falls short of fully explaining the relationship between PTSD and interpersonal distress. For instance, Mikulincer and Shaver (2007) state that along with detachment and reduced self-expression, avoidant tendencies are likely to manifest themselves in egotism and overemphasis on sexuality (p. 286). As it is clear that veterans with PTSD tend to have a reduced desire for sex (e.g. Hirsch, 2009) and their avoidant attachment behaviors are due more to affected cognitive and emotional regulation strategies than to an inflated self-importance, not all of the attributions made by attachment theory fit the context of interpersonal problems in PTSD. Thus, attachment theory is useful in its description of a pattern of problematic interpersonal behaviors seen in veterans dealing with PTSD, but undoubtedly does not explain the full connection between the PTSD symptoms and relationship distress. In order to gain a fuller understanding of how PTSD may be

influencing veterans' relationships, it is important to examine the direct impact of the PTSD symptoms on the important relationship factor of intimacy.

Intimacy

In order to best interpret how PTSD symptoms may be impeding veterans' relationship intimacy, it is key to first develop a better understanding of intimacy, which has been conceptualized in a number of ways. Mills and Turnbull (2001) define intimacy as "the ability to be sensitive and aware of each others' psychological, emotional, physical, operational, social, and spiritual needs" (p. 301). In their literature review of 61 unique definitions of intimacy, Moss and Schwebel (1993) proposed that "intimacy in enduring romantic relationships is determined by the level of commitment and positive affective, cognitive, and physical closeness one experiences with a partner in a reciprocal [...] relationship" (p. 33). Many of these definitions indicate that trusting one another, having feelings of closeness, sharing activities, and cultivating positive verbal and non-verbal communication are all important aspects of intimacy in relationships. Given these definitions, conceptualizations of intimacy and attachment clearly overlap a great deal. While attachment refers more to one's interpersonal relating style and intimacy reflects more of the shared environment of the couple, the concepts likely have a bidirectional relationship. For instance, if one partner has an insecure attachment style in which he or she does not expect the other partner to be nurturing in a time of need, he or she will be less likely to communicate emotions and thoughts to that partner. In turn, a low level of intimacy between the couple can perhaps strengthen these underlying beliefs that fuel the attachment insecurity.

Because these definitions of intimacy share so much in common with similar relationship processes such as attachment, support, love, and caregiving, Prager and Roberts (2004) have attempted to refine the concept further. They propose that intimacy is a process made up largely of intimate interactions, and that intimate interactions involve three necessary conditions: self-revealing behavior that invites the partner into one's zone of privacy, positive involvement with the partner that demonstrates attentional focus on the interaction, and shared understanding, which involves gaining better knowledge of each others' thoughts and feelings through the interaction. When the relationship is comprised of extensive intimate relating, and the shared understanding derived from that relating is accurate, it is characterized by a high degree of intimacy. This conceptualization is useful in its identification of the core features of intimacy. However, it should be noted that these features are also clearly influenced by variables included in the broader definitions of intimacy. For example, feeling love for and trusting in a partner can lead a person to reveal him or herself more to that partner during intimate interactions.

Based on these conceptualizations, it is explicit that intimacy serves a monumental role within a relationship. It comes as no surprise that intimacy is highly correlated with marital satisfaction (Tolstedt & Stokes, 1983; Greeff & Malherbe, 2001), and that a perceived lack of intimacy in a relationship predicts divorce (Vannoy, 2000). Given the significance of intimacy in relationships, it seems to be a substantial mechanism through which PTSD can impact veterans' relationships with their partners. Mills and Turnbull (2004) have noted that people who have been traumatized often have difficulty trusting, sharing with, and feeling close to their partners. In addition, empirical studies have supported the link between PTSD symptoms and lower levels of intimacy within the couple. For instance, Zerach, Anat, Solomon, and Heruti (2010) examined the relationship between intimacy, marital satisfaction and PTSD symptoms in Israeli ex-POWs

of the 1973 Yom Kippur War. Using questionnaire measures, the researchers found that self-reported marital intimacy partially mediated the relationship between the PTSD symptoms and dyadic adjustment of the ex-POWs. Although the relationship between veterans' PTSD symptoms and marital satisfaction remained significant above and beyond intimacy, this study shows that intimacy plays a distinct role in this relationship. As the primary trauma had taken place many years before the data were collected, this study reflects the enduring impact of PTSD on intimacy in the relationship.

The avoidance cluster of PTSD, and particularly its emotional numbing symptoms, seems to have the most crucial impact on general relationship functioning. For instance, Fredrickson, Chamberlain, and Long (1996) found that emotional withdrawal, more than any other symptom, led wives to seek divorce or separation. In addition, Lunney and Schnurr (2007) found that in Vietnam veterans with PTSD, a change in emotional numbing symptoms was uniquely associated with a change in relationship quality. There is some evidence that avoidance and emotional numbing have these effects on the relationship through their association with lower levels of intimacy. For example, in a study by Riggs, Byrne, Weathers, & Litz (1998), Vietnam veterans' avoidance and emotional numbing symptoms were significantly associated with the partners' dyadic adjustment, relationship problems, and veterans' fear of intimacy. Between the emotional numbing and avoidance symptoms, emotional numbing had the stronger association with measures of relationship quality, and in regression analyses, it was the only symptom type to significantly contribute to these relationship factors. Because this study mainly featured treatment-seeking veterans with PTSD, it may only be particularly pertinent to PTSD symptoms that are more severe. However, it strongly suggests that avoidance and emotional numbing are the PTSD symptom clusters with the most considerable connection to intimacy in veterans'

relationships. The question then arises of how these symptom clusters may be influencing the level of intimacy between the veteran and his or her partner. One important mechanism to examine is the nature of communication between the couple.

Communication

Among the different models of intimacy, there is a heavy emphasis placed on the role of communication between the partners. Recall that in Prager and Roberts' (2004) conceptualization of intimate interactions, self-revealing behavior was the first criterion. Other researchers have long proposed the crucial role of self-disclosure in intimacy. The Interpersonal Process Model of Intimacy, created by Reis and Shaver (1988), holds that intimacy involves one partner's self-disclosure of information about facts, thoughts, or feelings, and then the other partner's response with similar self-disclosure. The first partner must then interpret the other's communication as responsive, which involves conveying that he or she understands and validates the first partner's disclosure. Similar to Prager and Roberts' idea of the couple reaching a shared understanding from the interaction, this model emphasizes the importance of feeling validated by one's partner. Cordova and Scott (2001) have put forth an interpretation that works in tandem with the others. From a behavioral perspective, it suggests that the intimacy of a relationship is established through intimate events when one partner exhibits behavior that is vulnerable to being punished by the partner, but is instead reinforced. Through time, as more vulnerable behaviors are reinforced than they are punished, a sense of intimate safety develops, where each partner feels more comfortable being vulnerable with the other partner. The aspect of vulnerability in this model relates to Prager and Roberts' notion of self-revealing behavior that invites the partner into one's zone of privacy, and the aspect of reinforcement lines up with Reis

and Shaver's ideas of responsive communication and feeling validated. Cordova and Scott's model is useful in its explanation of how feelings of intimate safety develop in a relationship over time, as well as how they can be impeded.

These conceptualizations of intimacy have been well substantiated by empirical research. In a study by Laurenceau, Barrett, & Pietromonaco (1998), over the course of a week, participants were asked to fill out an interaction record after every interaction they had with their partners lasting longer than 10 minutes. The interaction record included ratings of self-disclosure, partner disclosure, perceived partner responsiveness, and felt intimacy during the interaction. The researchers found that on an interaction-by-interaction basis, self-disclosure and partner-disclosure significantly predicted feelings of intimacy, and perceived partner responsiveness partially mediated these relationships. This highlights the crucial role of both initial self-disclosure and feelings of validation through the partner's responsiveness in establishing feelings of intimacy. Interestingly, this study also found that the self-disclosure of emotions was a more prominent predictor of intimacy than was the self-disclosure of facts. Based on the notion that disclosing one's emotions will be more self-revealing and involve more vulnerability than disclosing facts, this finding supports the idea that this vulnerable self-revealing behavior is key to intimate relating. The important role of emotional self-disclosure will be essential to keep in mind within the context of veterans with PTSD, since the disorder is associated with a number of emotional difficulties (Frewen, Dozois, Neufeld, & Lanius, 2008). The results of this study have been replicated by other studies, which have extended the findings to both members of the relationship (Lippert & Prager, 2001), and have shown daily reports of intimacy to be strong indicators of overall relationship functioning (Laurenceau, Feldman, Barrett, & Rovine, 2005).

Because the conceptualizations of intimacy highlight the important role of self-disclosure and the partner's validating response, these are key mechanisms to examine when considering the relationship between veterans' avoidance and emotional numbing symptoms and the lower levels of intimacy in their relationships. In a study of Israel ex-POWs, Solomon, Dekel, and Zerach (2008) found that reduced self-disclosure from the veteran mediated the relationship between intimacy and the avoidance cluster of PTSD, which included emotional numbing. This indicates that perhaps avoidance and emotional numbing are influencing intimacy through reduced self-disclosure. Since self-disclosure is the first criterion of an intimate interaction and is necessary in order for the partner to be responsive and develop better insight into the discloser's thoughts and emotions, reduced self-disclosure in veterans with PTSD may be undermining the intimacy process by precluding the initiation of these interactions.

In order to look more closely at why the PTSD symptoms may be adversely affecting self-disclosure, it is important to first consider the different types of self-disclosure that are at issue in the context of these veterans. One type of self-disclosure that may be particularly meaningful to the partner is the disclosure of details about the traumatic combat or the war in general. If there was a high degree of intimate safety in the relationship before the trauma, the partner may be very open to hearing about the veteran's trauma in order to better understand his or her current thoughts and feelings. In the same vein, the partner may want to hear about the war upon the veteran's return home simply because it has been the veteran's entire experience for the previous weeks, months, or even years. There are a number of reasons why a veteran's PTSD may restrict him or her from disclosing such information to the partner. One likely reason is that talking or even thinking about the trauma can trigger painful reexperiencing symptoms for the veteran. In fact, a cardinal feature of the avoidance cluster in the current DSM (DSM IV-TR,

2000) is that the traumatized person may show “efforts to avoid thoughts, feelings, or conversations associated with the trauma,” which may be a strategic psychological process aimed at reducing the distress caused by the reexperiencing symptoms (Foa, Zinbarg, & Rothbaum, 1992). From this, it seems that part of the reason why the traumatized veteran may not wish to disclose about the combat or war is that he or she wants to avoid triggering these painful symptoms.

In addition to this reason, the veteran may not want to disclose information about the combat because he or she feels guilty about the trauma and his or her role in it. Henning and Frueh (1997) found that trauma-related guilt was widespread in a sample of American war veterans. The most prevalent type of guilt was related to acts of omission and commission (e.g. leaving a fellow soldier to die), although veterans also reported survivor guilt, shame-guilt, and guilt about one's own thoughts and feelings. Further, a recent study by Held, Owens, Schumm, Chard, and Hansel (2011) found that among veterans, disengagement coping, characterized by withdrawal from others and efforts to avoid thoughts and feelings, explained the relationship between trauma-related guilt and PTSD symptom severity. Taken together, these studies suggest that guilt may play a role in veterans' reduced self-disclosure to their partners, particularly with disclosure about the combat. In terms of Cordova and Scott's (2001) model of intimate safety, the veteran may feel that revealing his part in the combat or traumatizing event makes him too vulnerable, and perhaps fears that such disclosure will be punished rather than reinforced by the partner.

A third reason the veteran may be averse to disclosing about the traumatic event is that he or she may want to shield his or her partner from the trauma. Ray and Vanstone (2009) have noted that “by not discussing their feelings or experiences, [veterans with PTSD] see themselves

protecting their children, spouse, and loved ones” (p. 845). To some degree, there is a distinct possibility of disclosure about the trauma leading to psychological distress in the partner (Campbell & Renshaw, 2012), which will be discussed in more detail in the section on secondary traumatic stress in Chapter 3. Nevertheless, some disclosure about the traumatic event and the veteran’s thoughts and feelings surrounding it can be very healing if the partner validates the veteran’s feelings in his or her response. For instance, in their study of veterans from a Somalian peacekeeping mission, Bolton, Glenn, Orsillo, Roemer, and Litz (2003) found that self-disclosure about distressing peacekeeping experiences to partners was negatively associated with PTSD symptoms, especially when the veterans perceived a positive and validating response. The correlational design of the study limits causal inferences, and it is very possible that veterans with a lower severity of PTSD instigated more positive reactions from their partners because their experiences were not as distressing. However, it also seems likely that feeling validated by one’s partner after divulging such exposing thoughts and feelings can help lessen one’s guilty cognitions surrounding the trauma and can strengthen the sense of intimate safety in the relationship, making it more likely for the veteran to self-disclose in the future. This type of self-disclosure can be beneficial by helping the partner understand the reason why the veteran is experiencing these symptoms that are extremely distressing and trying for the couple.

Along with the veteran’s disclosure about the trauma, another important type of disclosure for the development of intimacy is that of his or her everyday emotions. Recall that Laurenceau and colleagues (1998) found that the disclosure of emotions was more important to the intimacy process than the disclosure of facts. However, thus far, very few studies of veterans with PTSD have addressed the effects of emotional sharing on intimacy. In their recent study of Israeli war veterans, Solomon, Debby-Aharon, Zerach, & Horesh (2011) did not find emotional

sharing to moderate the effects of PTSD symptom scores on marital adjustment, though it did for parental functioning. The first major limitation of this study is that although the researchers measured PTSD symptoms, the veterans in the distressed group had only been diagnosed with Combat Stress Reaction (CSR) by a psychiatrist on the battlefield, and didn't necessarily meet criteria for PTSD. While CSR veterans have been shown to be more susceptible to developing PTSD (Solomon, Weisenberg, Schwarzwald, & Mikulincer, 1987), CSR is typically thought to be a more short-term reaction to combat stress, and given that the data were collected 20 years after the war, the severity of this sample's PTSD symptoms is sure to be lower than that of combat veterans meeting the full PTSD criteria. It is also important to note that the researchers themselves created the measure of emotional sharing, and so it had not been empirically validated. In addition, they did not collect marital adjustment scores from the spouse of the veteran, when doing so might have revealed an important effect of emotional sharing on their marital adjustment. Further, a number of other factors affecting marital adjustment may have produced extra noise in the data, and measuring intimacy rather than general marital adjustment may have found a more precise relationship with emotional sharing. Because of these limitations, it would be premature to conclude that emotional sharing does not have an effect on the veteran's relationship with his or her spouse. It would be important to replicate these results with other studies that attempt to ameliorate these methodological limitations.

While the literature on veterans with PTSD hasn't yet shown an effect of emotional sharing on dyadic adjustment, research with normal couples suggests that deficits in emotional sharing would negatively impact the intimacy of the couple. In support of their interpretation of intimacy, Cordova, Gee, and Warren (2005) showed that based on self-report measures, feelings of intimate safety mediated the relationship between the ability to identify and communicate

emotions and dyadic adjustment for both partners. In addition, Mirgain & Cordova (2007) replicated these results with observational measures. The studies suggest that the ability to identify and communicate one's emotions to one's partner is related to higher feelings of intimate safety in the relationship, which then significantly accounts for dyadic adjustment. With the important role of emotional sharing in mind, it is crucial to explicate the problem of alexithymia that is commonly seen in those with PTSD. Alexithymia involves difficulties with identifying one's own emotions and communicating them to others. Badura (2003) found that 77% of combat veterans with PTSD scored in the alexithymic range, compared with an estimated 8% of men in the general population. Similarly, in a meta-analysis looking at rates of alexithymia in PTSD, Frewen Dozois, Neufeld, & Lanius (2008) found a significant association between PTSD and alexithymia with a large effect size ($d = .80$). Interestingly, alexithymia was a particular problem in male veterans with combat-related PTSD compared to other traumatized groups, though it is unknown whether this difference is attributable to trauma type or gender. Even without that information, the study suggests that male veterans with PTSD are especially prone to experience these difficulties.

With this clear connection between alexithymia and PTSD symptoms, it is important to examine this relationship more closely. Conceptually, there is considerable overlap between alexithymia and the avoidance and emotional numbing symptoms of PTSD, which involve attempts to dissociate from certain internal experiences and an inability to feel certain emotions. As one veteran has described it, "PTSD erodes all of your normal emotions... a whole range of emotions were eradicated through this illness. I think this is the biggest change. I'm left with three emotions: mad, sad, and glad [...] I don't know what happy is any more" (Ray & Vanstone, 2009). The eradicated emotions that this veteran describes match the "restricted range

of affect” criterion of the emotional numbing cluster of PTSD. An inability to feel emotions would seem to correspond with a subsequent inability to identify or describe them, suggesting that this symptom cluster may be particularly implicated in alexithymia.

However, quantitative research tying alexithymia to any particular symptom cluster is mixed. For instance, Monson, Price, Rodriguez, Ripley, and Warner (2004) found that alexithymic difficulty describing feelings was only significantly related to reexperiencing symptoms, and did not find difficulty identifying feelings to be related to any of the symptom clusters. However, in a recent study of nurses and ambulance personnel in the Belgian Army, alexithymia, and difficulty identifying feelings in particular, significantly predicted hyperarousal and emotional numbing symptoms (Declercq, Vanheule, & Deheegher, 2010). Further, in Badura's (2003) study of alexithymia in different generations of combat veterans, the emotional withdrawal and numbing subscale of the PTSD measure had the highest correlation with self-reported alexithymia, although the other symptom clusters were significantly correlated with it as well. While there is slight evidence for a specific connection between emotional numbing in alexithymia, findings thus far have been equivocal. There are two major challenges in researching this question that are likely causing these incongruous results. The first is that all of the PTSD symptom clusters tend to have high significant correlations with one another, making it difficult to parse out the potential different effects of each. The second is that there is an inherent difficulty in using self-reports of one's alexithymic difficulty identifying and describing emotions, since the validity of the measure depends on the accuracy of such identification and description.

Even with these challenges, research on alexithymia in combat veterans with PTSD is critical because it is evident that the emotional difficulties involved have implications for their

personal relationships. Just as Cordova, Gee, and Warren (2005) showed the importance of being able to identify and communicate one's emotions to one's partner, studies have found alexithymia to be related to a number of relationship difficulties. Humphreys, Wood, and Parker (2009) have found a significant negative correlation between alexithymia scores and self-reported relationship satisfaction. Additionally, Vanheule, Desmet, Meganck, & Bogaerts (2007) found that among a clinical outpatient sample, alexithymia was linked with a cold and distant interpersonal style, characterized by low amounts of affection for others. Similarly, Hesse and Floyd (2011) found that the level of affection that one gives and receives mediated the relationship between alexithymia and the number of close relationships that one has. With the knowledge that sharing one's thoughts and emotions with one's partner is a key component of intimate interactions, it is clear that alexithymia poses a serious impediment to such interactions. If one cannot effectively identify and describe one's emotions, then this precludes him or her from disclosing them to the partner as part of the intimacy process.

Because these studies employ a correlational design, little can be inferred about the directionality of the relationship between alexithymia and relationship difficulties. In fact, there is limited evidence that alexithymia in PTSD may be affected by interpersonal variables. For instance, in a study of women with PTSD, anxieties and beliefs about the consequences of emotional expression mediated the relationship between difficulty describing feelings and PTSD diagnostic status (Frewen, Dozois, Neufeld, & Lanius, 2011). In line with Cordova and Scott's (2001) interpretation of intimacy, those with PTSD may be refraining from disclosing because they are worried that the partner will punish instead of reward their vulnerability. While difficulty identifying feelings may arise more from the PTSD symptoms themselves, this study suggests that difficulty describing them to one's partner is in part related to the level of intimate

safety that already exists within the couple. However, the sample in this study was comprised of women whose PTSD was related to interpersonal maltreatment, and so they may have an especially low sense of intimate safety compared to combat veterans with PTSD. In order to be able to generalize these findings to combat veterans, further research would be needed.

Thus far, it has been shown that PTSD may be hindering veterans' level of intimacy with their partners through the relationship between the avoidance and emotional numbing symptoms and reduced self-disclosure. Along with self-disclosure, the models of intimacy emphasize the importance of the partner's response to that disclosure, and then the disclosing partner's interpretation of that response. Just as they have been shown to do with self-disclosure, the PTSD symptoms may be similarly impeding these other important stages of intimate interactions between the couple. However, as with emotional sharing, the effects of PTSD on the veteran's responsiveness to his or her partner's self-disclosure have thus far been understudied.

Conceptually, it would seem that the inability to experience positive emotions in veterans with PTSD would also interfere with having positive responses to their partners' disclosure, including non-verbal responses. Highlighting the extent of numbing symptoms in veterans, Litz, Orsillo, Kaloupek, and Weathers (2000) conducted a study of veterans with and without PTSD and looked at their reactions to emotionally valenced images using both self-report and EMG measurements of their facial activity. They found that after being exposed to a combat-prime, veterans with PTSD rated positive and neutral images as less pleasant, and showed less expressive motor activity in zygomatic muscles, which are used to smile. While this is primarily shown when the veteran is recovering from a combat reminder, this study stresses that veterans with PTSD have a less positive reaction to stimuli designed to elicit positive reactions, and this is apparent on their faces.

This reduced capacity to display positive emotion relates to the intimacy withdrawal sequence detailed by Prager and Roberts (2004). In it, one partner attempts to engage the other in an intimate interaction, either through verbal or non-verbal cues. The other partner withdraws by failing to respond to or actively avoiding the first partner's intimacy initiation. At this point, the first partner may either be understanding and acquiesce in the shift away from intimacy, or may feel hurt, angry, and may continue pursuing the interaction with the second partner. In veterans with PTSD, difficulty responding with positive emotion may hinder a positive reaction to their partner's intimacy initiation. While it has not yet been studied in veterans with PTSD, the intimacy withdrawal sequence has been validated with empirical research. With a sample of couples in their first years of marriage, Roberts (2000) found that reports of partner withdrawal in response to confiding behavior contributed to marital dissatisfaction beyond the couple's level of conflict. It seems likely that one partner's withdrawal from the intimate interaction causes the other to feel hurt or take the withdrawal as a personal rejection of him or her.

This idea actually has some support from research with veterans that have PTSD. For instance, in a study by Renshaw and Campbell (2011) of OIF/OEF veterans with PTSD and their partners, the partners' perceptions of the veterans' deployment experiences significantly moderated the association between the veterans' avoidance/emotional numbing symptoms and the partners' relationship distress. The more partners perceived the veterans' war experiences as traumatic, the less detrimental impact the symptoms had on their relationship. The attributional perspective proposed by Renshaw, Blais, and Caska (2011) suggests that if the partner is able to view the veteran's withdrawal and numbing symptoms as a component of a distressed reaction to the traumatic events instead of a change in the veteran's feelings specifically toward the partner, he or she may experience less distress and feel more connectedness with the veteran. Veterans'

withdrawal and emotional numbing symptoms may be especially prone to partners' misattribution, because compared with reexperiencing and hyperarousal symptoms, their connection to the trauma is less intuitive. Because in Renshaw and Campbell's (2011) study the partners' perceptions of veterans' traumatic experiences only served as a proxy for their attributions of the veterans' symptoms, it only lends partial support to the attributional model of partner distress. Further research elucidating the role of partners' attributions would be paramount because it would provide a specific intervention target in the aim to reduce relationship distress of veterans with PTSD and their partners. In therapy, the clinician would be able to help significantly reduce this source of relationship distress through psychoeducation with the partner about the full range of the veterans' symptoms.

However, in the case that the partner does not attribute the veteran's withdrawal to the combat trauma and feels hurt, he or she may continue to pursue a response from the withdrawing partner, creating a demand-withdrawal pattern between the couple. This demand-withdrawal pattern is significant because, outside of the realm of intimate interactions, it also relates to how the couple communicates in response to relationship problems and resolves conflict. Proper conflict resolution has been noted as a skill that can facilitate intimacy (Kouneski & Olson, 2004). However, the demand-withdrawal pattern, which involves one partner criticizing or making demands of the other followed by the other partner withdrawing from the discussion, has been shown to predict poor relationship satisfaction (Eldridge, Sevier, Jones, Atkins, & Christensen, 2007). The pattern has also been linked with both partners' subjective well-being through their own relationship satisfaction (Siffert & Schwartz, 2010). Further, a longitudinal study by Heavey, Christensen, and Malamuth (1995) found that the pattern of woman-demand/man-withdrawal during discussions of the women's issues predicted a decline in both

women's and men's relationship satisfaction two years later. While this is likely just one indicator of poor relationship satisfaction and not the sole cause, it suggests that the pattern is not a healthy conflict resolution behavior.

Limited research has suggested that PTSD may be implicated in this demand-withdrawal pattern of communication during relationship conflict. A study by Cook, Riggs, Thompson, Coyne, and Sheikh (2004) examined the relationship between PTSD symptoms, intimacy, and communication patterns in American World War II ex-POWs. The researchers found that PTSD exhibited negative relationships with self-reported intimacy and constructive communication, as well as a positive relationship with demand-withdrawal communication. At the cluster level, only emotional numbing uniquely predicted dyadic adjustment, but it alone did not account for any of the intimacy or communication problems. The researchers were unable to find a distinct effect of emotional numbing on any specific areas of relationship functioning, which they attribute to the "glop factor" in family research, where exclusive reliance on one partner's self-report tends to converge all measures of relationship functioning into a single positive-negative dimension (p. 43). Collecting data from veterans' partners would allow the researchers to pick up on the effects of PTSD on the partners' perceptions of the relationship functioning, as well as test the convergence between both partners' reports. In addition, the generalizability of the findings may be limited to older couples, since the mean age of the participants was 80 years old, and there are a number of factors that change as a marriage goes through time. Still, it is a sobering finding that even 50 years after the initial trauma, intimacy and communication remained negatively affected by the presence of PTSD.

Clearly, much more research is needed to examine the relationship between the demand-withdrawal style of conflict resolution and PTSD status. Because there are so few studies looking

at PTSD and conflict resolution, and given that veterans with PTSD endorse high levels of attachment insecurities, it may be fruitful to look at the relationship between attachment and conflict resolution style. Shi (2003) examined this relationship in a study of undergraduates in romantic relationships. Effective conflict resolution involves a number of steps, including each partner disclosing their feelings and positions, seeking areas of agreement through compromise and negotiation, integrating each other's opinions into their understanding of the issue, and finally expressing caring and empathy during conflict resolution. Shi found that attachment avoidance was significantly related to self-reported withdrawal from conflict resolution, as well as a decreased tendency to compromise with one's partner and integrate the partner's opinions into one's understanding of the issue. Recalling that in Renaud's (2008) study, 90% of veterans with PTSD endorsed high attachment avoidance, Shi's findings provide some more evidence that veterans with PTSD may have a tendency to withdraw from conflict discussions. As there are many stages of conflict resolution that might be impeded by PTSD symptoms (e.g. expressing caring), it would be important to conduct a study involving all of these aspects with veterans with PTSD.

While the effects of PTSD on these stages of conflict resolution are not yet known, the disorder does seem to be associated with more withdrawal during discussions of relationship problems. The demand-withdrawal pattern is an important issue for the couple because it can undermine feelings of being understood, especially for the demander. For instance, in a study by Weger (2005) of normal couples, the negative impact of the husband-demand/wife-withdrawal pattern on the husbands' marital satisfaction was fully mediated by the husbands' feeling misunderstood by their wives. In addition, the impact of wife-demand/husband-withdrawal pattern on the wives' marital satisfaction was partially mediated by the wives' feeling

misunderstood by their husbands. Further, husbands' withdrawal was associated with husbands' feeling misunderstood, and wives' withdrawal was negatively associated with wives' marital satisfaction. From this study, it seems that in the demand-withdrawal pattern, the demander feels misunderstood by the withdrawer, which accounts for the demander's lower relationship satisfaction. Alongside this, the withdrawer may feel misunderstood, and his or her withdrawal may be the cause or the result of this feeling. As this study was cross sectional, it is difficult to assign directionality to the relationships. However, it seems clear that feeling misunderstood by one's spouse would hinder the development of intimate safety in the relationship as Cordova and Scott (2001) have conceptualized.

While withdrawal from problem discussions seems to have some negative effects on both partners' relationship satisfaction, some researchers have highlighted the complexity of the communication pattern and have suggested that it may be adaptive for the couple in certain contexts. For instance, in a longitudinal study, Caughlin (2002) found that while demand-withdrawal communication was negatively associated with concurrent marital satisfaction, it actually significantly predicted increases in marital satisfaction a year later using some measures. It should be noted that this does not necessarily mean that demand-withdrawal was associated with high amounts of marital satisfaction, but simply a change from extremely low initial satisfaction to less low satisfaction. Caughlin suggests that this may reflect accommodation within the couple over time, in which each partner adjusts to the other and begins accepting their problem discussion style. This finding runs contrary to that of Heavey, Christensen, and Malamuth (1995), and at very least indicates that the relationship between demand-withdrawal and marital satisfaction is a multifaceted one.

Further, Roberts' (2000) communication study proposes that this relationship is influenced by at least one moderating variable. Specifically, when there were high ratings of hostility between the couple, husband conflict withdrawal was associated with higher wife relationship satisfaction than husband conflict engagement. When there were low ratings of hostility between the couple, husband conflict withdrawal was associated with lower wife relationship satisfaction. This suggests that when the alternative is the husband's hostility and aggression during conflict, his withdrawal from the discussion can serve an adaptive function for the relationship. There is a wide body of research showing that combat veterans with PTSD exhibit increased levels of interpersonal aggression (e.g. Taft, Kaloupek, et. al, 2007), and so it seems very possible that their elevated rates of demand-withdrawal during problem discussions are actually attempts at self-monitoring in an effort to avoid "blowing up." Clearly, more research is needed on this communication pattern and its potential moderators in combat veterans with PTSD, because it has huge implications for treatment involving the couple. Knowing whether the demand-withdrawal pattern is adaptive or maladaptive for the couple will determine the clinician's encouragement or discouragement of this behavior. The veteran's engagement in relationship problem discussions may then either result in greater aggression and discord in the relationship, or better understanding between partners.

Shared Activities

Outside of effective communication and conflict resolution, the amount of activities that couples share and the amount of time that they spend together can have a vital impact on their level of intimacy. Taking part in shared activities can foster closeness in a relationship by setting the stage for intimate interactions (Laurenceau, Rivera, Schaffer, & Pietromonaco, 2004). The

amount of time that a couple spends together has long been shown as a positive correlate of perceived relationship quality and intimacy, and this relationship is especially strong for recreational activities that are intensely interactive, as opposed to passive (Hill, 1988). In addition, Aron, Norman, and Aron (2001) have proposed that the couple's participation in novel and arousing activities have beneficial impacts on the relationship above and beyond the positivity of the activities. This idea has received empirical support. Using an experimental design, Reissman, Aron, and Bergen (1993) instructed some couples to participate in a certain amount of novel and arousing activities per week, while other couples were told to engage in activities that they considered pleasant but not exciting, and a control group of couples were not told to engage in either of these types of activities. The researchers found that the couples that engaged in novel and exciting activities showed significantly greater relationship satisfaction than those who engaged in merely pleasant activities.

A series of studies by Aron, Norman, Aron, McKenna, and Heyman (2000) replicated these results among different samples and using different measures, finding a causal relationship between participation in new and exciting activities and relationship satisfaction. Additionally, using a correlational design, they found that there was a strong association between self-reported exciting activity participation and relationship satisfaction, and that this association was mediated by feelings of excitement with the relationship. Taken together, these findings suggest that sharing novel and arousing activities leads to a higher amount of relationship satisfaction in part by enhancing feelings of excitement about the relationship. Other possible mechanisms through which these activities might increase relationship satisfaction are by generating positive feelings about the partner through their association with the enjoyable activities, and by

reinforcing a sense of interdependence through the potential cooperation involved in the activities (p. 274).

These studies highlight the important role that engaging in shared activities can play within a relationship, which suggests that it may be another key factor to examine when looking at the impact of PTSD on veterans and their partners. Along with most other areas of functioning, PTSD has been shown to have detrimental effects on recreational functioning. For instance, Kuhn, Blanchard, and Hickling (2003) found that motor vehicle accident survivors with PTSD reported less participation in recreational activities than accident survivors without PTSD. This is not surprising, given that the avoidance and emotional numbing symptoms of PTSD involve both “markedly diminished interest or participation in significant activities,” and “efforts to avoid activities, places, or people that arouse recollections of the trauma” (DSM IV-TR, 2000). From this, it seems that veterans’ participation in shared activities may be hampered either because they have an anhedonic lack of desire in the activity, or because they avoid the activity in order to reduce the possibility of triggering distressing reexperiencing symptoms. This second reason suggests that the veteran may be especially averse to participating in the more novel and arousing activities stressed by Aron and colleagues (2001). Novel situations involve more interpretation of ambiguous stimuli (Lazarus & Folkman, 1984, p. 84), and since people with PTSD are more likely to interpret ambiguous stimuli as threatening (Weber, 2008), new activities may be associated with more feelings of threat for veterans with PTSD. Because of this, they may be reluctant to participate in such activities with their partners, which in turn may have implications for their relationships.

In order to get a better picture of these implications, it can be helpful to look at descriptions from veterans themselves. In Ray and Vanstone’s (2009) study involving several

interviews with Canadian veterans with PTSD, one veteran said, "My wife mentioned that she misses the decisiveness and hopes I could be like I used to be. She liked me being in control, I'd say 'let's go out tonight.' Now I don't really like to go out. I couldn't make a decision on where the hell we're going if my life depended on it" (p. 843). This veteran identifies his indecisiveness and aversion to going out as important issues when considering the impact of PTSD on his spousal relationship. However, very little empirical research has been conducted thus far on the influence of PTSD symptoms on the amount and quality of shared activities between veterans and their partners. Recently, Allen, Rhoades, Stanley, and Markman (2010) looked at communication and positive bonding in married couples consisting of active duty Army husbands and civilian wives. The researchers found that the Positive Bonding Scale, which assessed levels of friendship, intimacy, fun, and felt-support between the couple, partially mediated the relationship between veterans' PTSD symptoms and their own and partners' marital satisfaction. While the couple's level of shared activities was assessed as a portion of the Positive Bonding Scale, its conflation with other important aspects of intimacy prohibits a better estimation of its unique contribution to marital satisfaction. However, the fact that it is a component of the variable that partially mediates the relationship between PTSD and marital satisfaction suggests that it does represent an important part of relationship functioning, and deserves further study among combat veterans with PTSD.

Sexual Relations

Sexual activity is perhaps the most prominent shared activity that can affect the relationship health of a couple. For instance, people in romantic relationships identify sexual intimacy as a crucial component of their overall relationship functioning (Prager, 1995, p. 232).

Further, there is a multitude of studies showing significant associations between couples' sexual satisfaction and their general relationship satisfaction (for a review, see Christopher & Sprecher, 2000). However, much of this research has been cross-sectional. Notably, Sprecher (2002) has looked at the relationship between sexual satisfaction and overall relationship satisfaction in premarital couples using a longitudinal design. She found that changes in sexual satisfaction 6 months after initial measurement were significantly associated with changes in relationship satisfaction, feelings of love, and commitment. While illustrating the association between these two variables over time, this study is only correlational, making it difficult to determine any potential causal relationships between the variables. Sprecher proposes the possibility that sexual satisfaction and relationship quality each influence one another, which would make the search for a single causal direction ineffective (p. 195). At the very least, this study suggests that sexual satisfaction and relationship satisfaction have a very close connection with one another, such that a change in one is met with a predictable change in the other.

Though causation has not been proven, sexual interactions between couples have been theorized to affect relationship satisfaction in part through intimacy. For instance, Prager (1995) states that sexual interactions are commonly seen as intimate interactions, because they involve the sharing of that which is private. As she articulates, "by participating in sexual activity with a particular partner, one is sharing personal, private aspects of the self that are not known to other kinds of intimate partners, such as family members or close friends" (p. 182). In terms of the intimacy model proposed by Cordova and Scott (2001), feelings of sexual intimacy are fostered when sexual self-revealing behavior is reciprocated and positively reinforced by the partner, creating positive associations with the interaction and making similar interactions in the future more likely. Sexual functioning clearly plays a significant role in overall relationship health, and

the mechanism that this idea puts forward seems very plausible. However, it has yet to be substantiated with data using an experimental design, and so it has not been truly validated.

Litzinger and Gordon (2005) have provided further insight into the complex role of sexual interactions within one's relationship. In their study of 387 married couples, they collected self-report data on the sexual satisfaction, communication, and dyadic adjustment of each partner. When examining relationship satisfaction, they found a significant interaction between the couples' communication and sexual satisfaction, such that in successfully communicating couples, sexual satisfaction did not significantly predict relationship satisfaction, but in couples that do not communicate constructively, high sexual satisfaction significantly predicted greater relationship satisfaction than low sexual satisfaction. These findings suggest that while communication may be a more critical predictor of relationship satisfaction, having high sexual satisfaction may be a protective factor against poorer relationship satisfaction in its absence. It is also important to note that this study's sample consisted of married couples that presumably did not have a high rate of sexual dysfunction, and therefore may not be the best indicator of how sexual dysfunction at clinical levels might predict poor relationship satisfaction.

Given the clear importance of sexual interactions within a marital or romantic relationship, it is crucial to further examine the factors that predict the quality of these interactions. In a study by Young, Denny, Luquis, and Young (1998) using multiple regression analyses, the researchers were able to predict 60% of the variance in sexual satisfaction. While the highest correlations with sexual satisfaction were overall marital satisfaction ($r = .62$) and satisfaction with non-sexual aspects of the relationship ($r = .61$), there were also significant correlations with measures of the sexual functioning itself, including frequency of spouse/partner orgasm during sexual encounters ($r = .53$), frequency of sexual activity ($r = .37$), and sexual

uninhibitedness ($r = .23$). As with all of these studies, its correlational nature does not allow for conclusions about the directionality of the associations. The large correlations with non-sexual relationship factors surely highlight the importance of these factors in couples' sexual relationships, which is likely one set of mechanisms through which PTSD may be influencing sexual satisfaction in veterans' relationships. However, the significant correlations with measures of sexual functioning support the idea that it also plays a large role in the sexual satisfaction of the couple.

The role of one's sexual functioning in determining the couple's sexual satisfaction is essential to keep in mind because a number of studies have demonstrated markedly high rates of sexual dysfunction in populations of combat veterans with PTSD. Letourneau, Schewe, and Frueh (1997) conducted one of the earliest studies that examined a wide range of sexual dysfunctions among veterans with PTSD. Among the 87 veterans that participated, 80% reported clinically significant sexual difficulties. Specifically, 69% reported difficulties with impotence, 50% reported difficulties with premature ejaculation, 44% reported low sexual desire, and 48% reported avoiding sexual interactions. One important limitation of this study was the low response rate of 36%. It may be that veterans who decided to complete and return the survey were the ones who had more sexual problems, and thus found it more relevant to them. Alternatively, the sensitive nature of the questions about sexual difficulties likely produces a strong social-desirability bias, which may lead to symptom underreporting. Cosgrove and colleagues (2002) have expanded on this study design by including a control group of veterans without PTSD. They found that PTSD status was significantly related to poorer sexual functioning across measures, with the exception of sexual desire. Comparing rates of sexual dysfunction between the two groups reveals vast differences. For instance, 85% of the PTSD

sample reported erectile dysfunction, compared with only 22% of the non-PTSD veteran sample. In addition, the severity of the PTSD significantly correlated with the level of overall sexual function, erectile function, orgasmic function, sexual desire, and intercourse satisfaction.

Other research looking at PTSD in veterans and sexual dysfunction has found less evidence of sexual impairment. For instance, Arbanas (2010) found a significant difference in sexual desire between veterans with PTSD and those with no mental disorder, but did not find a difference on any of the four other domains of sexual dysfunction. Additionally, he did not find the severity of the PTSD symptoms to be related to sexual functioning. While this study suggests lower rates of sexual dysfunction than the other studies of veterans with PTSD, it also has limitations that may account for this difference. For instance, veterans who had not been living with the same sexual partner for 6 months were excluded from the study, when such lack of a stable sexual partner may be due to the very sexual difficulties that they aimed to capture. Further, the study, by design, included both veterans who were treated with SSRIs and veterans who were not. The relationship between sexual functioning and SSRIs is somewhat complicated, and this addition could have added more noise to the data, making it more difficult to detect significant differences.

A recent study by Hirsch (2009) has again found high rates of sexual dysfunctions in veterans, this time extending the findings to the newest generation of war veterans deployed in OIF/OEF. Of the 53 participants in the study, 39 reported decreased libido (74%), 26 reported erectile dysfunction (49%), 8 reported a problem with ejaculation (15%), and only 6 reported no sexual dysfunction at all (11%). It is key to note that this study used a sample of veterans from a residential PTSD treatment center, which means that their symptoms were likely much more severe than those of veterans whose PTSD did not require such involved treatment. In fact, one

potential problem of the other studies reporting high rates of sexual dysfunction is that they use treatment-seeking samples, which implies a population with more severe symptoms. Because of this, it is difficult to generalize the results to veterans whose PTSD symptoms are less severe. Even with this caveat, the incredibly high rates in these studies of sexual dysfunction in treatment-seeking veterans with PTSD suggest that PTSD can have numerous and severe implications for one's sexual functioning.

In order to gain a better understanding of how PTSD may be having these influences on sexual functioning, it is beneficial to examine the PTSD symptoms themselves. In doing so, it is crucial to be aware of an important difference between male and female combat veterans: for female veterans, there is a much greater chance that along with combat trauma, there is military-related sexual trauma contributing to the PTSD (Williams & Bernstein, 2011). In a study of 558 female veterans from Vietnam and subsequent wars, 28% of the participants had experienced at least one rape or attempted rape during military service, with more than a third of those veterans having experienced at least two (Sadler, Booth, Cook, & Doebbeling, 2003). According to the Department of Defense's (DOD) annual reports, sexual assault rates in the military increased 8% from 2007 to 2008, followed by an 11% increase from 2008 to 2009, reaching a high of 3,230 incidences (DOD, 2010). These astounding rates of sexual assault in the military, paired with the fact that 90% of the victims are female, show that female veterans often have to deal with sexual trauma in addition to combat trauma.

There is also reason to believe that sexual traumas may be prominently involved in female veterans' PTSD symptoms. For instance, a DOD (2004) study of female veterans from Vietnam and subsequent wars found that among women seeking help for PTSD, 71% reported rape or sexual assault while serving in the military. This suggests that a large portion of the

trauma experienced at war by female veterans may be sexual in nature, which holds clear implications for subsequent sexual functioning. Cardinal features of PTSD include recurrent and painful reexperiencing of the traumatic event, and extreme efforts taken to avoid the triggering of such reexperiencing symptoms (DSM IV-TR, 2000). For veterans whose traumatizing event was sexual, any kind of sexual activity would clearly serve as a predominant trigger of these distressing symptoms. With these veterans, the sexual physiological sensations that most people find pleasurable are likely associated with the trauma and therefore negatively appraised. Because of this, veterans with sexual trauma would be averse to engaging in sex.

For veterans whose trauma is primarily combat-related, there are also a number of links between their PTSD symptoms and sexual dysfunctions. A recent study by Nunnink and colleagues (2010) examined the contribution of PTSD symptoms at the cluster level to sexual dysfunction among a sample of recently returned Iraq and Afghanistan war veterans. The researchers found using regression analyses that only the emotional numbing cluster uniquely predicted veterans' sexual functioning. There are a couple of potential ways that the emotional numbing symptoms of PTSD may influence sexual functioning. The first possibility is that the PTSD emotional numbing symptom of "markedly diminished interest or participation in significant activities" includes sexual interactions as one of the significant activities in which the person lacks interest. With a large amount of veterans reporting diminished desire for sex (e.g. Hirsch, 2009), this seems to be one plausible explanation. Further, this idea has received some support from physiological research. For instance, Spivak, Maayan, Mester, and Weizman (2003) found that among PTSD outpatients, testosterone levels were significantly correlated with avoidance cluster, which includes emotional numbing. Testosterone is a hormone that has been implicated in sexual desire (Anderson & Bancroft, 1992; Schwenkhagen & Studd, 2009),

although research has not yet designated a specific testosterone level as optimal for sexual desire. At this time, no strong conclusions can be made about testosterone as the cause of sexual desire deficiencies in veterans with PTSD, although these studies suggest that such deficiencies may have biological underpinnings.

Another point at which the emotional numbing symptoms may interfere with veterans' sexual functioning is during the act of sex. Specifically, these symptoms may be affecting the cognitive and attentional processes necessary for sexual arousal. In his review of the literature, de Jong (2009) makes the claim that subjective sexual arousal involves the awareness of one's physiological arousal, the expectation of reward, and motivated desire (p. 237). In this model, the facilitation of sexual arousal relies on focusing one's attention on sexual cues, and especially one's internal physiological cues of arousal. The effectiveness of directing attention inward at physiological arousal cues in promoting sexual arousal has been validated in both correlational (Meston, 2006) and experimental (Korff & Geer, 1983) research. After attending to internal physiological arousal cues, it is then vital to appraise these cues with positive and sexual meanings (de Jong, 2009, p. 243). By directing attention away from internal physiological arousal and by not appraising such internal cues with positive and sexual meanings, one is impeding his or her own sexual arousal. For men, this can then result in problems with erectile dysfunction, premature ejaculation, and anorgasmia.

There is reason to believe that the impaired cognitive and attentional processes during sex are mechanisms through which one's avoidance and emotional numbing symptoms may be hampering sexual functioning in veterans with PTSD. Recall that combat veterans with PTSD often have alexithymic difficulty identifying and describing their own emotions (Badura, 2003), likely because they wish to avoid distressing internal stimuli associated with the trauma. As

expected, Humphreys and colleagues (2009) found that alexithymia was negatively correlated with sexual satisfaction in relationships. Essentially, the ability to read internal cues and be aware of bodily sensations is impaired in PTSD, which then makes sexual arousal difficult. Litz and Gray (2002) note that as part of emotional numbing, people with PTSD require more intense positive stimulation in order to access appetitive or pleasant emotions (p. 201). During the act of sex, this higher threshold required for positive emotions may make it difficult to appraise sexual cues with positive associations, which then inhibits sexual arousal. While research has yet to be done on these sexual processes in combat veterans with PTSD, they seem to be likely mechanisms through which avoidance and emotional numbing are affecting their sexual functioning.

In addition to the avoidance and emotional numbing symptoms obstructing sexual arousal in veterans with PTSD, their reexperiencing symptoms may also be implicated in poorer sexual functioning. In Hirsch's (2009) study of sexual dysfunctions in veterans with PTSD, he notes that "several patients with both decreased libido and erectile dysfunction reported that during sexual relations with their partner, an intrusive and very upsetting image would typically appear, and their autonomic and affective response to the image would terminate sexual relations and reduce their interest in further relations" (p. 521). Using de Jong's (2009) model of sexual arousal, it is easily apparent how such reexperiencing symptoms would interfere with the sexual interaction; the intrusive thought or image would shift attention away from sexual cues and towards feelings of anxiety and distress. This then leaves the question of why these reexperiencing symptoms might be occurring during sex. Interestingly, the patients in Hirsch's study identified the reexperiencing symptoms during sex as typical, and their reduced interest in

sex thereafter suggests the notion that the avoidance of sex is aimed at avoiding the triggering of these intrusive thoughts or images.

Because trauma memories can be easily activated by a large number of diverse triggers (Ehlers & Clark, 2000), it is difficult to pinpoint what might be the triggering aspect of sex for some veterans with PTSD. One distinct possibility is that the physiological sensations experienced during sex remind the veteran of the physiological sensations felt during the traumatic combat. It has been suggested that the bodily sensations of autonomic arousal during sex, such as high heart rate, overlap a great deal with autonomic arousal experienced during anxiety and panic (Datillio, 1992; Sbrocco, Weisberg, Barlow, & Carter, 1997), and this is thought to be one reason why people with Panic Disorder are often averse to sexual activity (Minnen & Kampman, 2000, p. 49). There is also some evidence that such autonomic arousal is capable of eliciting traumatic memories in people with PTSD. For instance, in a study by Wald and Taylor (2008) looking at interoceptive exposure in people with PTSD, a range of exercises designed to induce a sympathetic arousal response triggered memories of the trauma for a large percentage of the participants. While not all of these exercises elicit physiological sensations akin to those typically felt during sex (e.g. dizziness), many elicited high breathing and heart rates. This is far from conclusive evidence that the physiological sensations involved in sexual interactions are to blame for triggering reexperiencing symptoms. However, the similarities between some of these sensations and the sympathetic arousal that often occurs in “fight-or-flight” scenarios such as combat suggest that this may be a worthy area of future study for veterans whose sexual interactions are being impeded by distressing reexperiencing symptoms.

In addition to the direct effects of the PTSD symptoms on sexual functioning, there may be other factors associated with the PTSD that have additional negative consequences. One such

factor is the use of selective serotonin reuptake inhibitors (SSRIs), which have been shown to have small but real pharmacotherapeutic effects on PTSD (Sullivan & Neria, 2009). The SSRIs are often associated with delayed ejaculation, anorgasmia, and reduced sexual desire (Lane, 1997; Corona et al., 2009). SSRI-induced sexual dysfunction can be so distressing that, in depressed patients, it has been known to lead to treatment discontinuation despite the therapeutic effects of SSRIs in other areas (Dording et al., 2008). Kotler and colleagues (2000) conducted a study comparing sexual functioning among males with PTSD who had been taking SSRIs and those who had not. They found a number of significant differences between the treated and untreated males with PTSD, including the frequency of sexual thoughts, the frequency of desire for sex, the rigidity of erection, and the ease of arousal. Although the male PTSD patients taking SSRIs reported lower levels of sexual functioning than those not being treated, this study importantly did not use an experimental design and did not randomize participants into groups. Therefore, it cannot be known whether the SSRIs caused such sexual impairments or are simply an indicator of a higher severity of PTSD in the treated group.

In fact, the severity of the PTSD is an important issue when considering the effects of SSRI treatment on sexual functioning. Arbanas (2010) found that when comparing untreated veterans meeting full PTSD criteria to untreated veterans with subthreshold PTSD, there were no significant differences in sexual functioning. However, when comparing between SSRI-treated veterans with either full or subthreshold PTSD, those with subthreshold PTSD showed significantly better sexual outcomes than those with full PTSD. In other words, the use of SSRIs was only associated with higher sexual functioning when the PTSD was less severe, suggesting that the severity of the PTSD moderates the effects of SSRIs on sexual functioning. This would be an important interaction to research further, because it indicates that SSRIs may be linked

with improvements in sexual functioning when the PTSD they are treating is not as severe.

Overall though, the use of SSRIs seems to be one potential source of lower sexual functioning in veterans with PTSD.

A final mechanism by which the PTSD may be affecting sexual functioning is through its negative impact on intimacy, communication, and other relationship variables. Recall that in Young and colleagues' (1998) study of marital sexual satisfaction, the variables that best predicted sexual satisfaction were overall marital satisfaction and satisfaction with non-sexual aspects of the relationship. While no studies have shown the directionality of the relationship between sexual interactions and intimacy, the view that such interactions are part of the intimacy process suggests that they can also be affected by it. When couples feel less intimate safety and are therefore more averse to being interpersonally vulnerable, this will have implications for their sexual interactions, which especially in the presence of sexual dysfunction, involve a high degree of vulnerability. In Zerach and colleagues' (2010) study on the connection between PTSD symptoms, marital intimacy, and sexual satisfaction in Israeli war veterans, they found that marital intimacy partially mediates the relationship between PTSD symptoms and sexual satisfaction. The fact that the couples' level of intimacy could explain part of this relationship further shows that intimacy likely has implications for the sexual satisfaction of a relationship. Other relationship variables altered by veterans' PTSD such as relationship conflict may also be producing further negative effects on the couple's sexual life (Metz & Epstein, 2002).

The significance of sexual functioning within the relationship cannot be overemphasized. Goff, Crow, Reisbig, and Hamilton (2007) found that among OIF/OEF veterans, sexual functioning was one of the only variables to significantly predict both veterans' and partners' relationship satisfaction, clearly exemplifying its importance within the context of PTSD and

relationships. As Leiblum (2007) notes, people with sexual dysfunction often feel a great deal of shame and guilt (p. 287), which can then actually serve to maintain the dysfunction (Frank, Noyon, Hofling, & Heidenreich, 2010). While sexual dysfunction may be an especially prominent feature for veterans with more severe PTSD symptoms, these studies show that addressing the dysfunction in treatment may be paramount to couples' psychological and relationship health. In Reissing and Giulio's (2010) recent survey of practicing clinical psychologists, the majority of clinicians did not ask or very infrequently asked their clients about their sexual health. Clearly, the vital issue of sexuality is far too often overlooked in clinical practice, and in veterans with PTSD, it represents an important mechanism through which the symptoms of the disorder negatively impact relationship functioning.

Aggression

Aggression or violence toward one's partner can have severe consequences for the relationship health of the couple and the psychological health of the partner. Because intimacy involves having one's vulnerabilities reinforced and not punished (Cordova & Scott, 2001), aggression in relationships can impede the development of intimacy. At lower levels, aggression can undermine feelings of safety, caring, and trust within a relationship. At more severe levels, it can traumatize the partner, which can then lead to him or her to develop symptoms of PTSD or depression (Golding, 1999). Aggression is clearly very harmful to the partner's psychological health, and may make it more difficult for him or her to remain in a supportive role for the veteran. As low social support is a risk factor for the development of PTSD (Brewin, Andrews, & Valentine, 2000), this diminished support may then hold implications for the veteran's own

PTSD symptoms. Given the negative effects of aggression on intimate relationships, it seems to be a primary mechanism of distress for veterans and their partners.

A wide body of research has shown intimate partner aggression to be a prominent issue for combat veterans dealing with PTSD. A number of studies with veterans have found that PTSD symptoms are associated with increased levels of physical and psychological aggression, which are then associated with lower relationship satisfaction (Jordan et al., 1992; Taft, Kaloupek, et al., 2007; Dekel & Solomon, 2006). These difficulties with anger, physical aggression, and psychological aggression may be especially pronounced for combat veterans with PTSD. For instance, a recent meta-analysis found that a PTSD diagnosis was significantly associated with more anger difficulties than any other anxiety disorder diagnosis (Olatunji, Ciesielski, & Tolin, 2010). Although PTSD is the only anxiety disorder to include anger as a diagnostic symptom, its specific relationship with anger is not merely the result of this inclusion. Novaco and Chemtob (2002) found that the association between PTSD and anger was significant even when the anger items in the assessment of PTSD were removed. While Hawkins and Cogle (2011) did not find PTSD to be associated with greater anger expression, they note that this may be due to the fact that the sample in their study was not seeking treatment, nor was it predominantly composed of combat veterans. This makes sense in the context of other studies, which have suggested that PTSD's relationship with intimate partner aggression is especially strong in samples of combat veterans (Orth & Wieland, 2006; Taft, Watkins, Stafford, Street, & Monson, 2011). It is unclear whether or not these differences should be attributed to the unique trauma of combat violence, the adaptive nature of aggression in response to fear in the combat environment, or fundamental differences in aggressive traits between military and non-military samples. There is also evidence that PTSD is more likely to be associated with physical

aggression in men than in women (Taft et al., 2011). It seems that that for women, PTSD symptoms are somewhat less likely to manifest in the form of physical aggression, but have damaging effects on the relationship through the other mechanisms.

Not only has research revealed a relationship between PTSD and anger, but it has also suggested the directionality of this relationship. A study by Orth, Cahill, Foa, and Maercker (2008) found in a cross-lagged regression analysis that among crime victims, PTSD symptoms predicted subsequent anger levels, but anger did not predict subsequent PTSD symptoms. This finding suggests that higher anger levels do not cause more severe PTSD symptoms, but rather more severe PTSD symptoms lead to higher anger levels. There is also evidence that the hyperarousal symptom cluster of PTSD is specifically involved in aggression towards intimate partners. In a study by Taft, Weatherill, and colleagues (2009) of male combat veterans in a Veterans Affairs (VA) PTSD clinic, the arousal and lack of control symptoms of PTSD were the strongest predictors of self-reported intimate partner aggression. Further, Savarese, Suvak, King, and King, (2001) found that the veterans' self-reported hyperarousal symptoms were significantly associated with the partners' reports of physical violence and psychological abuse. In addition, Taft, Kaloupek, and colleagues (2007) found in their study of Vietnam veterans that hyperarousal was the only PTSD symptom cluster to have a positive relationship with aggression. Given this clear link, it is important to investigate potential underlying mechanisms through which the hyperarousal symptoms of PTSD affect the veteran's level aggression towards his or her partner.

Chemtob, Novaco, Hamada, Gross, and Smith (1997) have proposed a theoretical model that explains the role of hyperarousal in leading to aggression in veterans with PTSD. Their model holds that anger and aggression are distinct constructs, with anger being an emotional

state consisting of both cognitive and physiological components, and aggression being the behavioral action that can result from the emotional state. Anger can lead to aggression, but it does not automatically do so because aggression is regulated by inhibitory mechanisms. However, these regulatory controls can be overridden by disinhibitory influences that can result from hyperarousal symptoms. The researchers assert that among combat veterans with PTSD, threat perception is characterized by a tendency to appraise neutral stimuli as threatening or hostile, a bias towards threat-confirmation, a higher state of vigilance to recognize a threat, and a lower threshold for responding to a perceived threat. The perception of a threat cue can provoke the person into a "survival mode," which involves both heightened cognitive and physiological arousal as part of an anger activation structure. The cognitive and physiological components of anger activation are closely linked and can result in behavioral aggression, which can further enhance the anger activation. According to the model, hyperarousal due to the perception of threat leads to a loss of self-monitoring, and inhibitory controls that would otherwise restrict an aggressive response fail to do so.

This conceptualization has been supported by empirical research. In a study by Taft, Street, Marshall, Dowdall, and Riggs (2007), male combat veterans with and without PTSD filled out questionnaires on their PTSD symptoms, state-trait anger expression, anxiety symptoms, and intimate partner conflict tactics. The groups were then given either a neutral auditory prime of semiclassical music or a trauma auditory prime of combat-related sounds, and their reactions were measured with the Cue Reaction Questionnaire. The results showed that PTSD-positive veterans had a greater anger reaction to the trauma prime than PTSD-negative veterans. In addition, PTSD symptoms were positively correlated with state anger, or the intensity of angry feelings at a particular time, as well as trait anger, or the general disposition to

experience anger. However, only trait anger mediated the relationship between PTSD symptoms and physical and psychological aggression. This is possibly because having general and pervasive anger increases the number of situations in which regulatory processes are needed to inhibit an aggressive response. The finding that veterans reported higher levels of angry thoughts and feelings in reaction to trauma cues supports Chemtob and colleagues' (1997) notion that cognitive arousal is activated in response to the perception of threat, which in this case was brought on by combat sounds.

In addition to evidence of cognitive arousal in response perceived threat in veterans with PTSD, there is also clear support for the existence of physiological arousal. Beckham and colleagues' (2002) asked veterans to relive a non-trauma related anger situation and measured their heart rates and blood pressure. After thinking about their anger situation, the veterans with PTSD showed a higher heart rate and diastolic blood pressure response, which are cardiovascular variables that have been consistently linked to an anger state. This supports Chemtob and colleagues' (1997) conceptualization by not only showing a clear physiological arousal component to anger, but also by showing its close connection with the cognitive component, which in this study consisted of the thoughts of the anger situation.

There is also evidence that these cognitive and physiological arousal systems may result from a tendency in PTSD to misinterpret neutral situations as threatening. Psychophysiological studies have shown abnormal neutral information processing in PTSD (for a review of the literature, see Weber, 2008). For instance, event-related potential (ERP) studies have shown that PTSD is associated with greater physiological responses to novel stimuli, even when these stimuli are non-traumatic. This supports the idea that with PTSD, neutral cues are more likely to be perceived as threats, and this perception then activates a physiological arousal response in the

person. Further evidence of this physiological response system can be found in Buckley and Kaloupek's (2001) meta-analysis of the basal cardiovascular activity of individuals with PTSD. They found that PTSD was associated with increased blood pressure and a higher resting heart rate. These baseline changes in cardiovascular function are likely the result of the body adapting to repeated cardiovascular responses to stress such as trauma cues. The best explanation for why a person with PTSD is having these frequent physiological responses is that, rather than there being a large number of real threats to that person, he or she is misperceiving events or information as more hostile or threatening than they truly are. These studies offer support to Chemtob and colleagues' (1997) conceptualization that PTSD involves a tendency to appraise neutral stimuli as threatening, which then activates a "survival mode" that involves both cognitive and physiological arousal.

There is some evidence that the processes of threat perception as well as cognitive and physiological arousal are involved in producing an aggressive response. In Lorber's (2004) meta-analysis using studies on physiology, aggression, and conduct problems, heart rate and electrodermal activity in response to negatively valenced stimuli were both positively correlated with aggression. While this association does not indicate the directionality of the relationship between physiological arousal and aggression, it shows that the two are closely linked. However, there is reason to believe that the tendency to misperceive neutral situations as threatening in PTSD does play a role in leading to aggression. In a study by Taft, Schumm, Marshall, Panuzio, and Holtzworth-Munroe (2008), structural equation modeling was used to examine the relationship between childhood maltreatment by parents, PTSD symptoms, depressive symptoms, social information processing deficits, and relationship abuse perpetration. The variable of social information processing deficits was assessed with two measures, one on men's

perceptions of their partner's negative intentions toward them, and the other on men's problem-solving skills with marital situations. The analyses revealed that the effects of PTSD symptoms on psychological abuse perpetration were only indirect through information processing deficits, and their effects on physical abuse perpetration were both direct and indirect through these deficits. This study supports the idea that a veteran's misperception of his or her partner's intentions as being hostile plays a particular role in leading to his or her aggressive response.

The final aspect of Chemtob and colleagues' (1997) conceptualization that is supported by research is the notion that the inhibitory mechanisms that normally keep anger from leading to aggression fail to function properly in the presence of PTSD. This is first reflected in the specific type of aggression that is most problematic among those with the disorder. Impulsive aggression is seen as an emotional and spontaneous reaction to provocation, while premeditated aggression is planned in advance and often lacks an emotional component. A study by Teten and colleagues (2010) found that over 70 percent of veterans with PTSD reported impulsive aggression compared with 29 percent of veterans without PTSD. Along with this, rates of premeditated aggression were actually significantly lower in veterans with PTSD than those without. This suggests that the particular problem for veterans with PTSD is not an overarching intention to be aggressive, but rather a lack of control of emotions that can overwhelm them in the moment. This is further supported by a study of veterans in which sexual aggression was not associated with PTSD symptoms (Teten, Schumacher, Bailey, Kent, 2009). This is conceivably because some sexual aggression is premeditated, while much of the aggression committed by veterans is comprised of impulsive reactions to situations perceived as hostile or threatening.

There is also evidence that veterans with PTSD view their own aggression as out of control. For instance, it has been found that the relationship between anger and poor treatment

outcome for veterans with PTSD is mediated by the veterans' fear of their own anger, its implications, and consequences (Forbes et al., 2008). The mere fact that many veterans fear their own anger suggests that they do not feel they are in control of it. This idea is further supported by studies that have shown PTSD to be associated with specific difficulties with anger control (Orth & Wieland, 2006; Olatunji et al., 2010). Perhaps the most convincing support of the idea that regulatory mechanisms fail to restrict aggression in veterans with PTSD comes from a treatment study by Chemtob, Novaco, Hamada, and Gross (1997). In it, veterans were placed either in an anger treatment condition or a clinical care control condition and completed anger control, anger reaction, and anger disposition measures. The anger treatment had significant effects on anger reaction and anger control measures, but not on anger disposition or physiological measures of anger. This suggests that treatment may not be able to improve the physiological arousal involved in anger situations, but can improve the regulatory processes that keep angry feelings from leading to aggression. As one patient in the study explained the change, "I still get very angry, but now I can leave the room before I explode and bang somebody up. I calm myself down, and then I come back" (p. 188).

Although further research is needed to definitively verify all the claims made in Chemtob and colleagues' (1997) conceptualization, a number of studies thus far support its various components. It is notable that of all the key relationship factors, aggression is the only one in which a model has been developed that specifically explains the mechanism of PTSD's effects. Recently, efforts have been made to further explicate the complex connection between PTSD, anger, and aggression. For instance, rumination has been shown to mediate the relationship between PTSD and anger (Orth et al., 2008), and dysphoria has been shown to mediate the relationship between PTSD and aggression (Taft, Vogt, Marshall, Panuzio, & Niles, 2007). Taft,

Vogt, and colleagues (2007) suggest that “the experience of dysphoric affect is likely to activate associative networks of anger-related feelings, thoughts, memories, and aggressive inclinations, making aggressive behavior more likely” (p. 142). Other specific pathways have been suggested: in their review, McHugh, Forbes, Bates, Hopwood, and Creamer (2012) propose intrusive, trauma-related visual imagery as a vital underlying process in anger in PTSD. This new research demonstrates that the full nature of the relationship between PTSD and aggression is intricate. As aggression is a key factor that causes significant distress in relationships of veterans with PTSD, further study parsing out these mechanisms is needed.

Chapter Three: Additional Factors Accounting for Distress in Veterans' Partners

In addition to the key relationship factors that can be affected by veterans' PTSD symptoms, researchers have identified additional factors associated with the PTSD that may account for some of the distress experienced by veterans' partners. As the concepts of secondary traumatic stress, caregiver burden, and ambiguous loss have been proposed as important mechanisms of distress for veterans' partners, the current chapter devotes a section to each. Additionally, because there are high rates of comorbid disorders alongside PTSD within veteran populations, the final section of the chapter focuses on the potential influence of comorbidity on veterans' relationships with their partners.

Secondary Traumatic Stress

Secondary traumatic stress has been proposed as one mechanism through which veterans' PTSD symptoms negatively affect their partners (Goff & Smith, 2005). The concept of secondary traumatic stress (STS) was originally developed as a way of explaining the marked distress experienced by some mental health professionals working with trauma survivors. Figley (1995) has defined it as "a syndrome of symptoms nearly identical to PTSD," which comes about as a result of "exposure to knowledge about a traumatizing event experienced by a significant other" (p. 8). Furthermore, Figley states that empathy "is a key factor in the induction of traumatic material from the primary to the secondary victim," such that when a person empathizes and identifies strongly with the traumatized person, he or she begins to take on some of the trauma symptoms (p. 15). In addition, he makes a distinction between STS, which involves a clear set of symptoms with a sudden onset, and "burnout," which is a more gradual

build-up of general distress resulting from emotional exhaustion (p. 12). This conceptualization offers a clear description of the specific nature of secondary traumatic stress, as well as presents potential mechanisms that may underlie it.

A number of researchers have attempted to apply this theory of secondary traumatic stress to the relationships of veterans with PTSD. In conducting a series of semi-structured interviews with wives of Vietnam veterans, Maloney (1988) noticed that some of the wives seemed to be affected by the same stimuli that had triggered flashbacks in the traumatized veterans. For instance, some had nightmares about Vietnam and were averse to the sound of a helicopter or sudden noises. She suggests that, in identifying with their traumatized husbands, these wives may have internalized some of their stressor imagery. In more recent times, several researchers have attempted to examine the phenomenon of secondary traumatic stress with empirical studies. For instance, a large-scale study of 708 partners of Dutch peacekeepers found that partners of peacekeepers with PTSD reported significantly more sleeping problems and somatic complaints than partners of those without PTSD, which the researchers interpreted through the lens of STS (Dirkzwager, Bramsen, Ader, & van der Ploeg, 2005). Additionally, Goff, Crow, Reisbig, and Hamilton (2009) found that among couples of OIF/OEF veterans, the veterans' trauma symptoms significantly predicted the partners' traumatic stress symptoms.

The literature on secondary traumatic stress suggests that it can have severe consequences for the couple's relationship health. Just as PTSD can lead to poor relationship functioning in the veteran, a PTSD-like reaction in the partner would likely impair him or her in much the same way. Indeed, Hamilton, Goff, Crow, and Reisbig (2009) found that trauma symptoms of female partners were significantly inversely correlated with both veterans' and partners' ratings of relationship satisfaction. Other research on secondary traumatic stress has searched for

relationship factors that might carry a higher risk for the transmission of the trauma. A study of Israeli combat veterans and their partners conducted by Ein-Dor, Solomon, Mikulincer, and Shaver (2010) found that attachment anxiety in veterans was significantly associated with higher levels of STS scores in partners, while higher attachment avoidance in veterans was significantly associated with lower levels of STS scores in partners. This finding is interesting because it suggests that interpersonal strategies otherwise seen as harmful to the relationship may actually be a protective factor against secondary traumatization of the partner. Similarly, Dekel (2010) found that wives that had high levels of fusion, or an over-involvement with one's partner, also reported higher levels of PTSD-like symptoms.

While all of these studies appear to support the conceptualization of secondary traumatic stress, Renshaw and colleagues (2011) have noted a number of interpretational and methodological problems pervading this literature. The first is that several researchers have suggested that high scores on general distress measures reflect secondary traumatic stress (Dekel, 2007; Mikulincer, Florian, & Solomon, 1995). Because there are clearly a number of ways in which the PTSD creates general distress in veterans' relationships, elevations on measures of general distress cannot be interpreted as evidence of STS being the underlying cause. In addition, all of the studies measuring STS symptoms in partners use self-report questionnaires adopted from PTSD symptom measures that are worded so as not to address the specific trauma event. This is a key limitation for a number of reasons. Firstly, it allows for the possibility that the partners' own trauma history is responsible for their symptoms rather than hearing about the veterans' trauma. More importantly, by not getting information about partners' attributions for their symptoms, these measures may only be gauging more general distress and not distress specific to the trauma. Renshaw and colleagues (2011) note that of the 17 symptoms of PTSD,

only eight are trauma-specific symptoms, and nine are fairly generic symptoms of distress (p. 462). For instance, the reexperiencing symptom of “recurrent and intrusive distressing recollections of the event” is specifically related to the traumatic incident, while “diminished interest or participation in significant activities” and “irritability or outbursts of anger” could be the result of distress not related to the trauma (DSM IV-TR, 2000). Because of this, wives of veterans can score fairly high on self-report measures of PTSD without actually endorsing the hallmark trauma-specific symptoms (Renshaw et al., 2011). Through both interpretation and measurement, studies looking at STS have shown a tendency to conflate it with general psychological distress, which dilutes the original construct as outlined by Figley (1995).

Along with noting the widespread limitations in the literature on secondary traumatic stress, Renshaw and colleagues (2011) have also addressed some of them in their research. In their study of 190 wives of recent combat veterans with PTSD, the PTSD checklist (PCL) was their measure of wives' STS. In order to more specifically measure the construct of STS, they broke the PCL scores into two categories, with items 1 through 8 assessing trauma-specific distress symptoms, and items 9 through 17 assessing generic distress symptoms. In addition, they used the Mood and Anxiety Symptom Questionnaire (MASQ) as a measure of general psychological distress and asked veterans' wives about their attributions of their symptoms. Depending on the cutoff score used, between 21.6% and 41.6% of the wives in the study endorsed symptoms suggestive of a PTSD diagnosis. Of the wives that reported at least some symptoms on the PCL, 62.4% appraised their symptoms as being completely unrelated to their husbands' military experiences, 24.7% appraised them as being related to a combination of their husbands' military experiences and experiences in their own lives, and only 12.9% appraised them as being entirely attributable to their husbands' military experiences. Importantly, these

attributions were not found to be moderated by the severity of the STS symptoms. These findings suggest that the vast majority of PTSD-like distress in wives of veterans is not attributable to their knowledge about the veterans' traumatic military experiences, and thus does not fall in line with the conceptualization of STS.

Although this study indicates that secondary traumatic stress is not the predominant issue facing partners of veterans with PTSD, it also provides slight evidence that it may be an accurate mechanism of distress for a smaller portion of veterans' partners. The MASQ's correlation with generic PCL symptom scores was significantly higher than its correlation with trauma-specific PCL symptom scores, suggesting that these generic PCL scores really do reflect general psychological distress more than the trauma-specific PCL scores. Subsequent analyses revealed that wives attributing their symptoms to both husbands' and their own experiences reported significantly greater levels of generic than trauma-specific symptoms, but wives attributing their symptoms entirely to their husbands' experiences reported similar levels of generic and trauma-specific symptoms. Additionally, there were no differences in scores on any PCL item between wives that attributed their symptoms exclusively to their own experiences and wives that attributed their symptoms exclusively to their husbands' military experiences. These findings suggest that the distress of wives whose symptoms stem from their husbands' military trauma is not more general than it is trauma-specific, although such null results should be viewed very tentatively.

Further, when combining the wives that partially and fully attributed symptoms to husbands' military experiences into a single group, a significant interaction was found such that generic PCL symptom scores correlated more highly with MASQ general psychological distress scores when wives partially or fully attributed their symptoms to their husbands' traumatic

military experiences rather than attributing them to their own experiences. This result does not support a conceptualization of STS, but as attributions of distress were not found to moderate the trauma-specific PCL scores, it also does not invalidate it. With these findings, Renshaw and colleagues (2011) do not deny the possibility of having an STS reaction in response to learning about a partner's combat trauma, but they do highlight the point that it seems much more rare than the larger literature would suggest, and emphasize the importance of using more focused measures in order to assess STS as separate from more general psychological distress.

Another limitation of certain studies on STS within veteran populations has been the indirect measurement of communication about the traumatic combat. For example, when discussing their findings on attachment and STS, Ein-Dor and colleagues (2010) suggest that "avoidant individuals do not commonly share their distress with close relationship partners," and because of this, "their traumatic experiences are less likely to affect their spouses' mental health, thereby inhibiting the transfer of trauma [...]" (p. 324). While this is an interesting finding, the researchers have used attachment as a proxy variable for communication about the traumatic event. If STS operates as Figley (1995) has conceptualized, then the traumatization occurs through exposure to knowledge about a significant other's traumatic experience, which happens through communication. This idea makes sense because in order to have distressing recurrent thoughts or images concerning another's traumatic event, one would first need to be given details about that event. Because of this, assessing the communication between partners about the trauma would allow for a more precise evaluation of the concept of STS.

To date, only a few studies have employed this methodology. Lev-Weisel and Amir (2001) examined STS and the sharing of traumatic memories in couples in which one partner was a Holocaust survivor. Using a single categorical variable to assess the level of sharing of

traumatic memories between the couple, the researchers found that the presence of PTSD moderates the relationship between memory sharing and spouses' perceptions of marital quality. When the survivor did not have PTSD, the sharing of Holocaust memories was not related to marital quality, but when the survivor had full or partial PTSD, memory sharing negatively predicted marital quality. Given that general self-disclosure is typically a positive predictor of relationship satisfaction (Laurenceau et al., 1998), the finding that traumatic memory sharing negatively predicted ratings of marital quality in Holocaust survivors with PTSD suggests that this type of sharing is distinct and is actually associated with more distress. However, they did not find a significant relationship between the sharing of traumatic experiences and spouses' self-reported STS symptoms, which does not support the view that STS is the underlying mechanism between memory sharing and marital quality. As this study only assessed traumatic memory sharing with a single dichotomous variable and did not control for more general communication within the couple, conclusions from these findings are limited.

Recently, Campbell and Renshaw (2012) have examined the relationship between combat-specific communication and spouses' psychological distress using a more involved measure of communication and controlling for the level of general communication within the couple. The data for the study was taken from the Family Interview Component of the National Vietnam Veterans Readjustment Study (NVVRS) conducted in the 1980s. The assessment of Vietnam-specific communication involved Likert scale ratings of the frequency that veterans talked about, partners listened to, and partners understood the veterans' combat experiences. The researchers found that when regressing partners' relationship distress, the contributions of veterans' PTSD and general communication, but not Vietnam-specific communication, were statistically significant. However, when regressing partners' psychological distress, there was a

significant interaction between Vietnam-specific communication and PTSD symptom severity. At higher levels of PTSD in the veteran, Vietnam-specific communication was associated with significantly higher distress in the partner, but at lower levels of PTSD, this association was not significant. While the measure of partners' psychological distress was not specifically assessing STS symptoms, this finding is consistent with STS theory. It is important to note that Campbell and Renshaw's (2012) results contrast with those of Lev-Weisel and Amir (2001), which found a connection between trauma-specific communication and marital but not psychological distress. Both of these studies suggest that in Veterans with a high-severity of PTSD, communication specifically about the trauma can have negative consequences for the partner. However, since there have been equivocal findings on the potential mechanisms of these negative consequences, much more research is needed on this subject.

One point that all of these studies suggest is that the relationship between trauma-specific communication and psychological distress of the partner is complicated. Renshaw and colleagues (2011) found that only a small minority of veterans' spouses seemed to be experiencing a reaction in line with STS theory. It would then be important to assess what potential risk factors there are for the development of STS in veterans' partners. While Figley (1995) proposed that the partner's empathy is a key factor in the genesis of STS, no studies have yet investigated this idea (Dekel & Monson, 2010). Another important potential moderator to evaluate is the level of detail used during the veteran's disclosure of the traumatic event. In their development of a couples-based treatment for PTSD, Fredman, Monson, and Adair (2011) suggest the strategy of "discussing the trauma(s) in 'broad brush strokes' rather than in 'nitty gritty' detail" in order to protect the partner from unnecessary emotional distress (p. 121). Similarly, Erbes, Polusny, MacDermid, and Compton (2008) have stated that they "do not advocate systematic exposure

work in a couple context” because it may not be therapeutic for the partner (p. 976). Because the partner’s attributions of the veteran’s PTSD symptoms are important for the couple’s relationship health (Renshaw and Campbell, 2011), some communication about the traumatic experience seems to be beneficial for the couple. The suggestion of disclosing the trauma in more broad terms seems appropriate because it would allow partners to attribute veterans’ distressing PTSD symptoms to their traumatic experiences without being given enough detail to picture those traumatic experiences vividly in their own minds.

Further research on the concept of secondary traumatic stress is imperative because it holds critical implications for couples’ treatment. As Renshaw and colleagues (2011) suggest, “spouses with true PTSD-like reactions [...] should likely undergo some form of exposure-based or cognitive therapy focused on their knowledge of the veterans’ combat experiences,” while those with more general distress would benefit more from couples’ therapy aimed at the source of that distress (p. 467). Because the type of treatment will vary based on the nature of the distress in spouses of combat veterans with PTSD, it is of the utmost importance to distinguish between specific STS and more general psychological distress in the methodology used by researchers of the construct. One method of assessment that would dramatically improve construct validity is a diagnostic interview of veterans’ partners. Though much more time-consuming and expensive than collecting self-report measures, using an interview would allow the researchers to ensure that the partners’ symptoms are truly comparable to those of PTSD, and are due to the knowledge of the veterans’ traumatic experiences (Renshaw et al., 2011, p. 467). With clear consequences for the treatment of veterans with PTSD and their partners, the extra effort invested in a more precise assessment of STS would prove invaluable.

Caregiver Burden

An additional factor that is thought to account for distress in partners of veterans with PTSD is their experience of caregiver burden. Initially developed in the context of caregivers of people with chronic physical and mental illness, the concept of caregiver burden has been more recently applied to partners of veterans with PTSD (Dekel & Monson, 2010). Caregiver burden has been defined as the degree to which caregivers perceive their emotional or physical health, social life, or financial status to be affected by their caring for an impaired relative (Zarit, Todd, & Zarit, 1986). In their review of the literature on combat-related PTSD and family relationships, Galovski and Lyons (2004) note that among other stressors, spouses of veterans have to deal with being fully responsible for the welfare of the children, being responsible for the maintenance of the husband's psychological well-being, and being responsible for meeting the financial needs of the family (p. 480). The functional impairment that comes with the veteran's PTSD symptoms prohibits him or her from meeting previous role obligations within the family, which shifts the burden of meeting such obligations entirely to the partner.

Some evidence of the distress associated with caregiver burden can be seen in descriptions of daily life from partners of veterans with PTSD. From a qualitative study by Dekel and colleagues (2005) consisting of semi-structured interviews, one wife of an Israeli combat veteran states, "We (the wives) become everything to them emotionally ... I think it's like having another child in the house" (p. 28). This wife feels the burden of having her husband be emotionally dependent on her, and her comparison of him being like another child suggests that she feels she is responsible for taking care of him. In the same study, another wife says, "His dependence and his need for me to be by his side all the time prevents me from going places. Sometimes I can't go to work, and when I do, I often have to leave early or return home

promptly” (p. 29). This wife feels constrained by her husband’s need to have her physically present all the time, which interferes with her occupational and social functioning. Taken together these quotations suggest that caregiver burden can be a real issue for partners of combat veterans with PTSD, and the burden can result from a number of different factors associated with the impairments involved with the disorder.

In addition to this qualitative study, a number of quantitative studies have examined the relationship between PTSD and partners’ caregiver burden. For instance, Beckham, Lytle, and Feldman (1996) conducted a longitudinal study of 58 partners of Vietnam War veterans with PTSD, using the Burden Interview to assess caregiver burden. The researchers found that PTSD symptom severity in the veterans was positively correlated with partners’ self-reported caregiver burden, and that greater caregiver burden was associated with greater psychological distress, dysphoria, and anxiety in the partners. Additionally, they found that a change in veterans’ PTSD symptom severity and partners’ caregiver burden roughly 8 months after initial assessment both positively predicted a change in partners’ psychological distress. More recent studies have replicated the connection between veterans’ PTSD symptoms and partners’ perception of caregiver burden (Calhoun, Beckham, & Bosworth, 2002; Manguno-Mire et al., 2007).

Other quantitative research has helped uncover more about the nature of caregiver burden. A study by Ben Arzi, Solomon, and Dekel (2000) examined the connection between caregiver burden and wives’ separation-individuation, which involves a sense of autonomy and independence. The researchers found that wives who scored higher on separation-individuation had significantly lower levels of caregiver burden and psychological distress. When assessing the different factors of separation-individuation separately, they found that conflictual independence was strongly associated with caregiver burden ($r = .88$), while emotional dependence was only

moderately associated ($r = .23$). Conflictual independence is defined as the level of anxiety about, anger towards, and suspicion and blame of one's partner, and emotional dependence is defined as the need for the partner's emotional support and closeness. These findings first suggest that wives who are able to maintain independence and autonomy from their husbands experience low levels of caregiver burden, which confirms that the inability to be independent is a primary feature of caregiver burden. Further, the findings suggest that while wives' emotional dependence on their husbands contributes to greater caregiver burden, their level of conflict and negative feelings about their husbands contributes even more strongly. These findings make sense, given that being dependent on someone who is unable to meet one's needs can be distressing, and that one likely feels more burden when there are negative feelings about the person that he or she must take care of.

A study by Dekel, Solomon, and Bleich (2005) investigated the mechanisms underlying the connection between veterans' PTSD symptoms and partners' caregiver burden. In a sample of male Israeli veterans with PTSD and their wives, the researchers assessed wives' mental distress, marital adjustment, and caregiver burden, as well as veterans' mental distress and functional impairment. The results yielded a number of full and partial mediations between veterans' mental distress and impairment, and wives' mental distress and marital adjustment. Specifically, the relationship between veterans' level of functioning and wives' mental distress, and the relationship between veterans' mental distress and wives' marital adjustment, were fully mediated by wives' self-reported caregiver burden. Further, the relationship between veterans' mental distress and wives' mental distress, and the relationship between veterans' level of functioning and wives' marital adjustment, were partially mediated by wives' self-reported caregiver burden. These results suggest that both the functional impairment involved in PTSD

and the wife's subjective appraisal of caregiver burden are crucial in determining the wife's mental and marital distress. The more functionally impaired the veteran is, the more distressed the wife will be, due in large part to the wife's feeling of caregiver burden.

These studies show caregiver burden to be an adequate concept in examining the distress experienced by some partners of veterans with PTSD. However, certain limitations should be noted. There may be some overlap between the concept of caregiver burden and more general psychological distress, with which it has been shown to be correlated (Calhoun et al., 2002). Some items on the measure of caregiver burden may overlap with items on the measure of general psychological distress, such as "Do you feel angry when you are around your relative?" (Beckham et al., 1996). Additionally, with only a limited number of studies on caregiver burden in veterans with PTSD, the literature has yet to investigate certain variables that likely mediate and moderate caregiver burden, such as the actual amount of caregiving and the social resources available to the partner. As caregiver burden has been shown to be associated with poorer physical and psychological outcomes for the caregiver (Galovski & Lyons, 2004), it remains an important mechanism of distress for partners of veterans with PTSD, and warrants further study.

Ambiguous Loss

Another concept that has been employed in order to capture the nature of partners' distress in the context of PTSD is ambiguous loss. Ambiguous loss has been described as a loss that remains unclear, occurring when a person is physically present but psychologically absent, or vice versa (Boss, 2010). As family members have to live with the paradox of presence and absence, ambiguous loss has been theorized to freeze the grief process and block coping and decision making processes (Boss, 2007). Resulting from continued ambiguity, the partner may

experience symptoms of anxiety and depression (Dekel & Monson, 2010). The concept is often used to describe difficulties experienced by families when one member develops Alzheimer's disease, but has also been applied to combat veterans with PTSD. Military families are first introduced to ambiguous loss when the service member is deployed, and he or she is physically absent but psychologically present (Riggs & Riggs, 2011). When the veteran returns home with PTSD, there may be further ambiguous loss because he or she is now physically present, but the symptoms of the disorder preclude normal functioning within his or her family roles.

Some qualitative evidence has suggested that spouses of veterans with PTSD may experience feelings of ambiguous loss. For instance, in Dekel and colleagues' (2005) study using semi-structured interviews, one wife of a PTSD-veteran remarks, "It's as if I live alone. I have to prepare everything; I have to do everything alone [...] What am I – am I a widow? Am I divorced?" (p. 30). Because her husband's PTSD symptoms have greatly impaired his functioning, this wife seems to feel ambiguity about her husband's status as present or absent, which is reflected in her questions about being a widow or divorced. This wife's statement suggests that feelings of ambiguous loss may be involved in the distress of living with a veteran suffering from PTSD. As her distress seems to be rooted in her husband's inability to take on responsibilities, it also indicates that the concepts of ambiguous loss and caregiver burden may be intimately related. When the veteran is unable to fulfill previous roles, the spouse may both feel more burden of responsibility and feel unclear about the veteran's status within the family.

As a part of ambiguous loss, boundary ambiguity has been studied by Faber, Willerton, Clymer, MacDermid, & Weiss (2008). The term refers to extent to which family members are uncertain in their perception about the veteran's status and roles within the family. Using a longitudinal design, the researchers conducted qualitative interviews with reservists, spouses,

and parents and analyzed them for patterns and themes. Seven waves of interviews were conducted over the course of a year following the reservists' return home, and at each wave, boundary ambiguity was evaluated along a 3-point scale by two independent raters that read the transcripts. The researchers found that couples, and especially those who had experienced additional major life events or losses, were rated as having high levels of boundary ambiguity. For most of the couples, boundary ambiguity dissipated roughly 6 weeks after the reservist's return to civilian employment. However, for the couples facing additional stressful life events such as changing jobs or having health problems, feelings of boundary ambiguity persisted much longer. While this study did not examine the role of PTSD specifically, the disorder is likely an additional life stressor that can add to feelings of boundary ambiguity, since it involves functional impairment (Dekel, Solomon, & Bleich, 2005).

A study by Sayers, Farrow, Ross, and Oslin (2009) suggests that feelings of boundary ambiguity are widespread among clinical populations of recently returned veterans. Within the sample of 86 OIF/OEF married or partnered veterans referred for behavioral health evaluation, 41% reported feeling like a guest in their own home, 37% reported being unsure of their responsibilities around the house, and 57% reported having disagreements about responsibilities around the house. Roughly half of the sample met a provisional diagnosis of PTSD, and the presence of PTSD significantly increased the chances of feeling like a guest in one's own home. These findings suggest that being unsure of one's role in the family upon returning home is highly common among treatment-seeking veterans, and PTSD may be involved in exacerbating such boundary ambiguity.

From these studies, ambiguous loss, and boundary ambiguity in particular, seems to be an important construct in considering the couple relationships of veterans with PTSD. However,

ambiguous loss has not yet been tailored specifically for PTSD. More importantly, the literature on ambiguous loss is still only speculative because the few studies that have examined it have used qualitative data. In order to validate the construct, operative measures would need to be developed so that it can be tested quantitatively (Dekel & Monson, 2010). Because no quantitative studies have examined ambiguous loss, it is not yet known how prevalent an issue it is within relationships of veterans with PTSD, as well as how much of the couples' distress it can account for.

Comorbid Disorders

A final additional factor that can negatively influence the intimate relationships of veterans suffering from PTSD is the presence of a comorbid psychiatric disorder. One common comorbid diagnosis for veterans with PTSD is depression. Studies of both clinical and community samples suggest that between one third and two thirds of people with PTSD will also be diagnosed with Major Depressive Disorder (MDD), and that having PTSD increases the risk of developing MDD by two to four times (Erickson, Wolfe, King, King, & Sharkansky, 2001). Some studies of veteran populations suggest that rates of PTSD with comorbid depression may be even higher than rates of PTSD without comorbid depression. For instance, Ginzburg, Ein-Dor, and Solomon's (2010) study of 664 Israeli combat veterans found that rates of triple comorbidity between PTSD, depression, and anxiety were three times that of PTSD alone. Further, a study of over 5,000 Korean War veterans found that 52.3% of veterans meeting PTSD criteria also reported clinically significant levels of depression. While some researchers have suggested that the high rates of depression with PTSD may just reflect an overlap in symptoms (e.g. Franklin & Zimmerman, 2001), both of these studies found comorbid depression to be

associated with a number of poorer outcomes for veterans, including reduced quality of life, impaired functioning, and greater symptom severity.

These high rates of comorbid depression then have implications for veterans' relationships with their partners. Veterans' depression symptoms have been shown to significantly predict their relationship satisfaction (Goff et al., 2007). The literature on the effects of depression on marriage suggests that it is associated with less positive and more negative communication between partners (Johnson & Jacob, 1997; Ruscher & Gotlib, 1988), as well as greater feelings of burden and negative mood in the non-depressed partner (Benazon & Coyne, 2000). These studies indicate that co-occurring depression symptoms may compound the effects of PTSD on relationship functioning. With such high rates of depression in veterans with PTSD, it seems to be an important comorbid disorder to study when accounting for the relationship functioning of these veterans and their partners.

Another very common comorbid diagnosis for veterans with PTSD is a substance use disorder. In the NVVRS (Kulka et al., 1990), 74% of male veterans with PTSD also met criteria for alcohol abuse. A more recent study of over 450,000 veterans further suggests a strong connection between PTSD and substance misuse (Seal, Cohen, Waldrop, Cohen, Maguen, & Ren, 2011). The researchers found with veterans that were first time users of VA healthcare between 2001 and 2010, that among those with an alcohol or drug use disorder, 76% also had a diagnosis of PTSD. Additionally, having PTSD increased the chances of receiving an alcohol use disorder diagnosis by roughly four times, and increased the chances of receiving a drug use disorder diagnosis by roughly three times. Just as depression has implications for intimate relationships, substance abuse has been shown to be associated with marital dissatisfaction and divorce (for a review, see Leonard & Eiden, 2007). One crucial way in which comorbid

substance abuse can negatively impact relationships is by increasing the risk for committing intimate partner violence. Alcohol abuse and dependence have been shown to mediate the relationship between PTSD and intimate partner violence in veteran populations (Taft, Pless, et al., 2005), with more problems with alcohol being associated with more violence (Teten et al., 2009). Clearly, both comorbid depression and substance abuse carry additional burdens for veterans with PTSD and their partners, and thus will be crucial areas to address in treatment.

Chapter Four: The Impact of PTSD on Veterans' Children

Thus far, the many effects of PTSD on veterans' relationships with their partners have been examined. In order to gauge the full impact of veterans' PTSD on their families, it is crucial to also look closely at how veterans' children are affected by the disorder. In the current literature, three different types of measures have been employed to investigate the effects of PTSD on the parent-child relationship. The first type examines child behavior problems, which include both internalizing problems, such as depression and withdrawal, and externalizing problems, such as aggression and acting-out. The second type looks at parental functioning and satisfaction, in which veterans and partners evaluate their efficacy as parents and their satisfaction with the parent-child relationship. The third type addresses the family's functioning, which involves the quality of communication within the family, the emotional bonding felt between members, and the family's ability to respond to situational stressors in an appropriate and effective way.

There is some evidence that children of combat veterans with PTSD have higher rates of behavior problems than those of veterans without PTSD. With a large sample taken from the NVVRS, Jordan and colleagues (1992) found that children of veterans with PTSD were significantly more likely to fall into the clinical range for behavior problems compared to children of veterans without PTSD. Additionally, Caselli and Motta (1995) found among a sample of 40 Vietnam veterans that PTSD, but not level of combat exposure, was significantly associated with both internalizing and externalizing child behavior problems. The finding that PTSD was more related to behavior problems than mere combat exposure suggests that the symptoms of the disorder may play a particular role in influencing such problems. However, a few key limitations with these studies should be noted. Firstly, they do not compare their

samples with children of non-veterans. This is important because children of veterans may evidence a different pattern of behavior problems than those of non-veterans, and without this comparison, it is unknown how much of these behavior problems can be accounted for by child-of-veteran status alone. Secondly, these studies both use a parental-report of child behavior and not a more direct measure taken from the child him or herself.

Other studies have addressed some of these limitations. For instance, Dansby and Marinelli (1999) looked at child adjustment using a number of different measures, including school records, observations made by parents and teachers, and self-reported depression, anxiety, and attitudes toward parents. Among a sample of 56 adolescents, they found that children of combat veterans showed significantly more behavior problems at school, more negative attitudes toward their fathers, and higher levels of depression and anxiety compared to children of non-combat veterans. While this study compares children of veterans with those of non-veterans using more direct measures of behavior, it is important to note that it does not assess the PTSD symptoms of the parent. The finding that child-of-veteran status is associated with significantly more behavior problems regardless of PTSD suggests that some of these problems can be accounted for by differences between veteran and non-veteran families. In addition, Ahmadzadeh & Malekian (2004) examined behavior in children of veterans using self-report rather than parental-report. Within a sample of Iranian high school students, the researchers found that children of war veterans with PTSD showed higher rates of aggression and anxiety compared to children of non-veterans. While these studies indicate that children of veterans with PTSD do have higher rates of behavior problems, they are not able to show how much of these problems are accounted for by the PTSD versus child-of-veteran status.

Along with these studies, it is important to note other studies that have not found such internalizing and externalizing behavioral problems in offspring of veterans with PTSD. For instance, when comparing offspring of veterans with PTSD, offspring of veterans without PTSD, and offspring of non-veterans, Davidson and Mellor (2001) found no significant differences in self-esteem, emotional distress or behavior problems. In addition, Suozzi and Motta (2004) found that offspring of veterans with PTSD fell into the well-adjusted range on a number of measures assessing distress, showing low levels of depression and anxiety. However, it should be mentioned that in both of these studies, the offspring of veterans ranged from 16 to 32 years old. This age range clearly differs from that of the studies by Jordan and colleagues (1992) and Caselli and Motta (1995), which assessed parents of children ranging from 4 to 16 years old. Given the different findings on behavior problems between these studies, it seems that the age of the child is an important moderator to consider when looking at the impact of PTSD on veterans' children. The relative lack of behavior problems seen in the older offspring of veterans makes sense because they likely live outside their parents' home and have less direct contact with the traumatized veteran. Perhaps for these adult offspring, the negative impact of the PTSD was at one point clearly present, but has diminished over time. There may also be important differences within the age range measured by Caselli and Motta (1995). The cognitive and emotional capacity of a 4 year old is much different from that of a 16 year old, and so the PTSD may be affecting behavior differently based on the child's stage of development.

Along with the child's behavior, studies on the effects of combat-related PTSD on the parent-child relationship have examined parental functioning and satisfaction. While looking at child behavior can provide a more direct measure of how the PTSD affects the child, assessing parental functioning and satisfaction offers information about how the veteran and the partner

perceive themselves as parents while struggling with the effects of the disorder. A number of studies have shown a significant association between PTSD and lower perceived parental functioning and satisfaction for both veterans and their partners (Hendrix, Erdmann, & Briggs, 1998; Samper, Taft, King & King, 2004; Berz, Taft, Watkins, & Monson, 2008; Cohen, Zerach, & Solomon, 2011). These low levels of self-reported parental functioning and satisfaction may reflect real deficits in these areas, but may also be enhanced by the tendency in PTSD to appraise oneself negatively (Foa, Ehlers, Clark, Tolin, & Orsillo, 1999). Just as PTSD seems to have effects on the behavior of veterans' children, these studies suggest that it can negatively impact the veterans' and partners' feelings of efficacy as parents.

The third type of measure that has been used to examine the effects of PTSD on the parent-child relationship addresses family functioning. Several studies have shown PTSD to be associated with poorer family functioning as reported by veterans and their partners. Hendrix, Erdmann, and Briggs (1998) found using spouses' reports of family functioning that both veterans' hyperarousal and avoidance scores were significantly correlated with lower family cohesion, which is the level of emotional bonding between families, and lower family adaptability, which is the ability of the family to respond effectively to stressful situations. Gold, Taft, Keehn, King, King, and Samper (2007) replicated these findings with a sample of female veterans. Additionally, the previously mentioned study by Davidson and Mellor (2001) found that veterans with PTSD perceived their families as significantly less able to effectively solve problems and to respond to situations with appropriate affect. Further, they rated their family communication as more indirect, vague, and less healthy, and rated their family members as less interested and involved in each other's activities. A key strength of this study was that it also assessed the veterans' offspring's perceptions of family functioning. The offspring of veterans

with PTSD corroborated the veterans' appraisal of family functioning, rating their families' problem-solving abilities as significantly worse and rating their families as significantly more dysfunctional compared to the offspring of veterans without PTSD and the offspring of civilian controls. Similarly, Westerlink and Giarratano (1999) found that children of veterans with PTSD rated their families as being significantly higher in conflict, with a tendency to be lower in cohesion, although this only trended toward significance. Taken together, these findings with veterans', partners', and children's reports show that PTSD has a negative relationship with various aspects of family functioning. Along with the studies implicating PTSD in greater child behavior problems and lower feelings of parental efficacy, these studies indicate that veterans with PTSD will experience more difficulties with the parent-child relationship.

Having established the many associations between PTSD and poorer outcomes for veterans and their children, it is then essential to look for potential mechanisms underlying these associations. To this end, it is beneficial to look at studies that have examined the relationship between family factors and PTSD at the cluster level. Among a sample of 66 Vietnam veterans, Ruscio, Weathers, King, and King (2002) found that the emotional numbing cluster of PTSD had the strongest relationship to parenting, being the only cluster to have significant relationships with all five parent-child variables. These parent-child variables were perceived child misbehavior, the level of positive sharing between the veteran and child, the level of disagreement between parent and child, the amount of contact between parent and child, and the overall quality of the relationship. Not only did the emotional numbing cluster have a significant relationship with all five parent-child variables, but it consistently had the most robust correlations, particularly with child misbehavior ($r = .49$), positive sharing ($r = -.49$), and amount of contact ($r = -.39$). These associations remained significant in regression analyses when

controlling for depression and substance abuse. While it suggests a particularly strong role for emotional numbing, this study has a few limitations. Only 29% of the sample met full criteria for PTSD, and so it is difficult to determine the generalizability of the results. In addition, the researchers performed a large number of analyses with a relatively small sample size, which increases the risk of making a Type 1 error. Because of these limitations, Samper, Taft, King, and King (2004) sought to replicate and extend the findings using a larger, nationally representative sample of veterans from the NVVRS. While the researchers were only able to measure parenting satisfaction and not family functioning, they found that avoidance and emotional numbing had the strongest negative relationship with parenting satisfaction. From both of these studies, it seems that veterans' emotional numbing symptoms can have particularly harmful effects on their relationships with their children.

Emotional numbing is implicated in reduced intimacy between veterans with PTSD and their partners (Riggs, Byrne, Weathers, & Litz, 1998), largely through reduced self-disclosure (Solomon, Dekel, & Zerach, 2008). There is some evidence that similar mechanisms underlie the disrupted relationships between veterans with PTSD and their children. In the study by Ruscio and colleagues (2002), emotional numbing was particularly related to reduced positive sharing and time spent with the child. Similarly, Solomon, Debby-Aharon, Zerach, & Horesh's (2011) study of Israeli war veterans found emotional sharing to moderate the relationship between PTSD and parental functioning, such that the negative relationship between the two was especially strong when there were lower levels of emotional sharing. In addition, attachment avoidance has been shown to moderate the relationship between PTSD and parental functioning, with higher avoidance associated with a greater connection between PTSD and parental functioning (Cohen, Zerach, & Solomon, 2011). These studies suggest that PTSD has especially

harmful effects on parenting when it involves the avoidance of closeness with one's children.

With the reduced level of positive feelings involved in emotional numbing, it seems that veterans with PTSD disclose and interact less with their children, which is then detrimental to the parent-child relationship.

Another way in which a veteran's PTSD symptoms may negatively impact the parent-child relationship is through its connection with aggression. In a study of Australian Vietnam veterans entering a PTSD treatment program, when their partners were asked to describe the main presenting problem, 13.3% endorsed anger and aggression, compared to only 4.8% for PTSD avoidance and 3.8% for interpersonal problems (Evans, McHugh, Hopwood, & Watt, 2003). Further, the study found that anger mediated the relationship between hyperarousal and family functioning using both the veterans' and partners' reports of family functioning. These findings show that anger is a central issue for veterans with PTSD, and both veterans and their partners acknowledge its connection with family functioning. Aggression and violence from the veteran can have a number of negative consequences for the child. Harkness (1993) found in children of Vietnam veterans with PTSD that the PTSD did not directly predict child adjustment, but family violence did predict greater child behavior problems and distress.

Additionally, a study by Street, King, King, and Riggs (2003) found that marital violence affected the wives' psychological distress both directly and indirectly through their perception of family functioning, and the wives' psychological distress then significantly predicted child behavior problems. In this way, the relationship between marital violence and child behavior problems was mediated by the wife's psychological distress. An important limitation of this study was that the wife served as the source of information for four of the five variables in the model, including child behavior problems. Because of this, her report of child behavior may be

influenced by a negative reporting bias. Watkins, Taft, Hebenstreit, King, and King (2008) conducted a similar study with a sample of female veterans and male partners. They found that physical and psychological aggression perpetrated by both the female veteran and the male partner were associated with greater child behavior problems. However, contrary to Street and colleagues' (2003) findings, psychological distress in the veteran and partner did not mediate the relationship between aggression and child behavior problems in this study. Whereas intimate partner aggression may lead to more behavior problems indirectly by negatively affecting the psychological health of both parents, it may also lead to behavior problems directly by modeling violence and ineffective coping strategies for the child.

Most studies addressing the impact of PTSD-related aggression on children examine aggression between the parents, and not aggression directed toward the children. A study by Lauterbach, Bak, Reiland, Mason, Lute, and Earls (2007) has looked at parent-child aggression in a sample of civilian men and women with PTSD. Interestingly, the researchers found in regression analyses that higher levels of emotional numbing and lower levels of reexperiencing symptoms were related to elevated parent-child aggression. It is unclear why having greater reexperiencing symptoms predicted lower levels of parent-child aggression in this study. However, the findings also revealed that high levels of social support and low levels of aggression and stress were related to a better quality of parent-child relationships. This suggests that social support, lack of stress, and low levels of aggression are important protective factors for the parent-child relationship in the context of combat-related PTSD. Much more research on parent-child aggression is needed because such aggression can have monumental implications for the child's physical and psychological health.

Along with reduced closeness and increased aggression, another way in which the veteran's PTSD may affect the child is through its many negative effects on the veteran's marital relationship. Just as marital violence can affect the child through the parents' psychological distress (Street et al., 2003), the reduced intimacy and ineffective communication between partners can also contribute to distress (Zerach et al., 2010; Eldridge et al., 2007). The troubled marital environment between the parents can then have a negative impact on the child. Several studies have shown that parenting mediates the relationship between marital conflict and child adjustment (Kaczynski, Lindahl, Malik, & Laurenceau, 2006; Schoppe-Sullivan, Schermerhorn, & Cummings, 2007). Veterans with PTSD experience greater conflict and distress with their partners, which may then indirectly impact their children through their parenting. The connections between veterans' PTSD symptoms and their relationships with their children are complicated, involving both direct and indirect mechanisms. Two important strategies for developing the literature further would be to use child-reports to corroborate the parents' assessments of family functioning and child behavior, and to use smaller age ranges of children in the studies. Doing so may help researchers identify important mediating and moderating variables, such as the age of the child.

Chapter 5: Current Treatments Involving Veterans' Family Members

Through the mechanisms evaluated in this review, it is clear that PTSD can have several severe consequences for the family functioning of combat veterans. It is then crucial to evaluate the current available treatments that address these issues. A number of efficacious treatments for PTSD have been developed, largely emanating from the cognitive behavioral therapy (CBT) tradition (for a review, see Sharpless & Barber, 2011). While these treatments target the PTSD symptoms themselves, which may then indirectly ameliorate some of the interpersonal difficulties caused by the symptoms, they do not address such difficulties directly. Recent research has suggested that targeting these interpersonal difficulties by involving veterans' family members in treatment may prove beneficial for the psychological health of both veterans and their families. In a large-scale longitudinal study of Australian Vietnam veterans and their partners, distressed family functioning at the beginning of a PTSD treatment program significantly predicted greater intrusion, hyperarousal, and avoidance symptoms at three months posttreatment (Evans, Cowlshaw, Forbes, Parslow, & Lewis, 2010). Additionally, distressed family functioning at three months posttreatment significantly predicted increases in avoidance and hyperarousal symptoms at nine months posttreatment, even after controlling for comorbid depression and alcohol abuse. These findings are particularly salient with the context that the majority of veterans in the study experienced reduced PTSD symptoms over the course of treatment. This study suggests that family distress can play an active role in determining the effectiveness of PTSD treatment for veterans. The family can either serve as a source of stress, which may exacerbate PTSD symptoms, or a source of social support, which has been shown as a crucial factor in the development of PTSD (Brewin, Andrews, & Valentine, 2000).

Other studies have suggested that involving family members in treatment would be beneficial. In a qualitative study by Buchanan, Kemppainen, Smith, MacKain, and Cox (2011), the majority of partners of OIF/OEF veterans that were surveyed had not received formal education about PTSD. Involving partners in treatment would provide a good opportunity for them to learn about the disorder and its effects, and doing so would help them better understand the veterans' distress. Additionally, a recent survey of 114 veterans enrolled in an outpatient Trauma Recovery Program at a VA medical center found that 86% of veterans saw PTSD as a source of family stress and 79% expressed interest in greater family involvement in their treatment (Batten et al., 2009). Taken together, these studies suggest that many veterans desire and would utilize treatment that includes family members, and that such treatment would prove beneficial for veterans and their families by targeting both the PTSD symptoms and the interpersonal impairment associated with them.

Monson, Taft, and Fredman (2009) have reviewed the literature on PTSD treatments for veterans that involve intimate partners. The treatments that have received evidential support thus far fall under the umbrella of Behavioral Conjoint Therapy (BCT) because they are rooted in behavioral theory (p. 709). In this approach, there is a heavy emphasis on thoughts, emotions, and behaviors, and the goal of treatment is to reduce distress by providing couples with effective coping skills, often involving communication and problem solving. Currently, only a small number of clinical trials examining the efficacy of BCT have been conducted, and only two of those have been randomized controlled trials. The first of these randomized controlled trials is from an unpublished doctoral dissertation by Sweany (1987). In the study, 14 male veterans with PTSD and their partners were randomly assigned to receive either eight weekly two-hour group sessions of BCT, or no treatment as part of a waitlist control group. The BCT addressed issues of

communication, problem solving, and intimacy within relationships of PTSD-veterans. Sweaney found that those in the BCT group reported significant reductions in PTSD symptoms and significant increases in relationship satisfaction compared to those in the waitlist control group. These findings suggest that treatment aimed at the interpersonal functioning of veterans with PTSD can produce improvements in both this functioning and the PTSD symptoms. However, these differences between groups do not elucidate how the efficacy of BCT compares with treatments aimed solely at the PTSD symptoms themselves.

Glynn and colleagues (1999) have conducted a larger controlled study of 42 veterans and their family members, the vast majority of whom (89%) were the veterans' romantic partners. This study addressed the question of how BCT could enhance other PTSD treatments by including three groups. Veterans either received directed therapeutic exposure (DTE) by itself, DTE followed by behavioral family therapy (BFT) with a family member, or were placed on a waitlist to receive treatment after the conclusion of the study. The DTE involved 18 twice-weekly sessions, with most of the sessions focused on exposure to the trauma memories and cognitive restructuring regarding those memories. The BFT consisted of 16 sessions, which involved psychoeducation about PTSD, communication training, anger management training, and problem solving training. As the DTE was aimed at reducing anxiety in the face of trauma memories and cues, the researchers hypothesized that it would bring about a reduction in the reexperiencing and hyperarousal symptoms, which they refer to as positive symptoms. Alternatively, since the BFT was aimed at increasing interpersonal skills, the researchers hypothesized that it would reduce the negative symptoms of avoidance and emotional numbing, which involve interpersonal avoidance and difficulty communicating emotions.

Analyses revealed that veterans in both of the treatment conditions improved more than the waitlist controls on positive symptoms, but not on negative symptoms. Those who underwent both DTE and BFT showed a higher effect size for improvement in positive symptoms compared with those who only underwent DTE, but this difference was not statistically significant. This effect size advantage suggests that significant differences between treatment groups may be detected using a larger sample size. However, those who completed the BFT did show significant improvements in interpersonal problem solving. This finding suggests that even if the BFT does not affect negative symptoms directly, the skills training may be helpful in managing the interpersonal consequences of those symptoms. Although the researchers did not find a significant difference between the two treatment groups on PTSD improvement, this does not mean that BCT is unable to bring about such improvement. Instead, the findings may be attributable to the small sample size and high attrition rate in the study. For example, over one third of those placed in the DTE and BFT condition declined to even begin the BFT. Further, high baseline negative symptom scores significantly predicted greater dropout. This means that the participants who had the most severe symptoms and may have benefitted the most from the BFT did not undergo the treatment, which certainly influences the data. Even with these limitations, this study remains the single strongest randomized controlled trial that has been conducted on BCT for veterans with PTSD and their partners.

More recently, there have been a few uncontrolled studies examining variants of BCT. Sautter, Glynn, Thompson, Franklin, and Han (2009) ran a pilot study of 6 male Vietnam veterans and their partners assessing the feasibility and efficacy of Strategic Approach Therapy (SAT), which is a novel, couple-based treatment specifically targeting the avoidance and emotional numbing symptoms that are heavily implicated in interpersonal distress. Occurring

over 10 sessions, treatment consisted of psychoeducation about PTSD, behavior exchange to improve management of behaviors that produce positive emotions, and partner-assisted anxiety reduction to train couples to cope with exposure to anxiety. Regarding the behavior exchange, the researchers state that “couples discussed ways to enhance intimacy and increase positive emotions, and they agreed to behavioral contracts to engage in behaviors that increased positive emotions as part of weekly homework assignments” (p. 345). Additionally, couples were given training in communication and problem solving. Despite the small sample size, the researchers found significant reductions in avoidance symptoms using both self-report and clinician-ratings, and found significant reductions in emotional numbing symptoms using self-report, clinician-ratings, and partner-report. No reductions in reexperiencing or hyperarousal symptoms were found. Relationship adjustment and satisfaction were not assessed in this study, and so the treatment's effects on veterans' relationship functioning are unknown. Given that traditional exposure-based therapies are typically more successful with reducing reexperiencing and hyperarousal symptoms than avoidance and emotional numbing symptoms (Glynn et al., 1999), Sautter and colleagues' findings suggest that BCT may generate improvements in specific areas that are not as well ameliorated by these other therapies.

Currently, the only disorder-specific BCT that is designed to improve all PTSD symptoms while enhancing relationship functioning is cognitive-behavioral conjoint therapy (CBCT; Monson, Taft, & Fredman, 2009, p. 709). CBCT consists of 15, 75-minute sessions with the veteran and partner that cover psychoeducation about PTSD and its effects on intimate relationships, behavioral communication skills training, and cognitive interventions. The communication training is aimed at overcoming experiential avoidance and promoting the sharing of thoughts and feelings between partners, and the cognitive interventions are aimed at

modifying core interacting schemas associated with the PTSD and relationship discord. An uncontrolled pilot study of CBCT was conducted with seven couples in which the husbands were Vietnam veterans with PTSD (Monson, Schurr, Stevens, & Guthrie, 2004). Following the treatment format outlined by Monson, Guthrie, and Stevens (2003), the researchers carried out 15 sessions of CBCT with each of the couples. Pre- and posttreatment data revealed that veterans' PTSD symptoms significantly decreased according to clinician and partner-ratings, but not according to self-report. However, veterans did report significant improvements in depression, anxiety, and social functioning, and there were marginally significant improvements in partners' but not veterans' relationship satisfaction.

The original CBCT has been recently revised in order to ensure its flexibility for a range of traumatized individuals and their intimate partners. The revisions include placing a greater focus on making meaning from the trauma, paying more attention to altering couple-level interactional patterns that maintain avoidance, and adapting the treatment for populations in which there is more variability in the trauma type, symptom severity, gender, and sexual orientation of the traumatized individual (Monson, Fredman, & Adair, 2008). Monson and colleagues (2011) have run another pilot study with a more varied sample. Of the six couples included in the study, only a third of the trauma-events were combat related, and half were related to sexual assault. Additionally, a third of the sample consisted of same sex couples. Analyses revealed significant and large effect-size improvements in PTSD symptoms using clinician-ratings, partner-report, and self-report. The partners, but not the traumatized individuals, showed significant increases in dyadic adjustment. In addition, partners showed significant increases in anger expression. With the context that partners actually scored very low

on state and trait anger, this finding suggests that the partners felt more comfortable expressing their negative feelings by the end of treatment.

Given the large effect-size improvements evidenced in this pilot study, it seems that CBCT can produce meaningful improvements in PTSD symptoms while promoting better relationship functioning for the couple. Further, the findings indicate that the treatment can be effectively applied to different types of couples and are not limited to those of male Vietnam veterans with PTSD. It is important to note that both the controlled and uncontrolled studies conducted thus far on BCT have primarily studied Vietnam veterans. Recently, more attention has been given to the application of BCT to newly returning veterans from OIF/OEF. Fredman, Monson, and Adair (2011) mention that unlike Vietnam-era veterans who may be retired, OIF/OEF veterans and their partners often have work, school, and/or young children to take care of at home (p. 123). Because of this, clinicians must be flexible in scheduling treatment sessions around veterans' and their partners' needs. Such flexibility is crucial in the context of a study in which 75% of veterans and partners saw demands on their time as a barrier to partner participation in the veteran's treatment (Sherman, Blevins, Kirchner, Ridener, & Jackson, 2008). Further, Erbes, Curry, and Leskela (2009) found that despite reporting lower levels of overall PTSD symptoms, OIF/OEF veterans had significantly lower treatment attendance and higher treatment dropout than Vietnam-era veterans. The researchers did not attribute the treatment dropout to a sudden improvement in PTSD symptoms, because they noticed a trend of veterans dropping out and then returning in crisis with more severe symptoms. These studies suggest that OIF/OEF veterans differ in meaningful ways from Vietnam-era veterans, which then have implications for their responses to treatment. This highlights the importance of producing more

studies of BCT with the newer generation of combat veterans, which researchers are currently undertaking (Taft, Monson, Feldner, Murphy, & Resick, 2007-2012).

In addition to BFT, SAT, and CBCT, other couple treatments for PTSD have been developed. One such treatment is Johnson's (2002) emotionally focused couple therapy (EFT), which places heavy emphasis on the attachment bonds between the couple. Additionally, Erbes, Polusny, MacDermid, & Compton (2008) have adapted integrative behavioral couple therapy (IBCT) from Jacobson and Christensen (1996) to fit the context of combat-related PTSD. IBCT differs from other forms of BCT by including an emotional acceptance component that is useful for targeting the experiential avoidance symptoms of PTSD. The treatment seeks to reduce these avoidance symptoms both directly through greater acceptance and expression of emotions, and indirectly through decreased conflict and increased intimacy within the couple relationship, which in turn reduces environmental stress. While the developers of both EFT and IBCT describe their applications using case examples, no empirical studies have yet examined either treatment's efficacy.

Along with the disorder-specific couple treatments, a number of broader interventions have been developed which seek to bolster resilience in families of combat veterans in the face of severe psychological distress. For example, the Support and Family Education (SAFE) program is an intervention that provides psychoeducation about mental illness to families of combat veterans (Sherman, 2003). When surveyed, families showed high satisfaction with the program. However, no measures have been used to assess the program's impact on veterans' familial environments. Multifamily Group Psychoeducation (MFG; McFarlane, 2002) is a similar intervention that addresses the social isolation and burden experienced by veterans' families by both educating them about mental illness and providing them with a larger social

support network of other families dealing with similar issues (Makin-Byrd, Gifford, McCutcheon, & Glynn, 2011). Recently, the Reaching out to Educate and Assist Caring, Healthy Families (REACH) program has adapted the MFG model specifically for the context of PTSD (Sherman, Fischer, Sorocco, & McFarlane, 2011). The REACH developers modified the multifamily group sessions to be monthly rather than weekly and to occur over six months rather than two years, so that veterans with PTSD have time to practice program skills on their own and can move toward more independent functioning. Additionally, the REACH program added anger management skills training, given that many veterans have problems with anger (e.g. Taft, Street, et al., 2007).

The Families Overcoming Under Stress (FOCUS) program is another intervention designed to promote resilience in military families (Saltzman et al., 2011). While not specific to a PTSD diagnosis, the program aims at fostering a familial environment of open and effective communication, which is a key issue for many families of veterans dealing with PTSD (Davidson & Mellor, 2001). Outcome studies of the FOCUS program have shown significant reductions in psychological distress in the parents as well as significant reductions in emotional and behavioral problems in the children (Saltzman et al., 2011, p. 226). Finally, Gewirtz, Erbes, Polusny, Forgatch, and DeGarmo (2011) have developed the After Deployment Adaptive Parenting Tools (ADAPT) program, which is designed to promote effective parenting in veterans and partners in the face of adjustment difficulties post-deployment. As PTSD is associated with poorer parental functioning and child adjustment (Jordan et al., 1992), the importance of both the FOCUS and ADAPT programs for families of veterans with PTSD cannot be overestimated.

Based on the research concerning the many interpersonal consequences of PTSD, it seems that the current variants of BCT do well in addressing the issues that are most central to

the relationship distress experienced by veterans and their partners. Providing psychoeducation for veterans' partners is crucial because partners' attributions of the veterans' PTSD symptoms are directly related to their relationship distress (Renshaw & Campbell, 2011). Along with psychoeducation, BCT supports the development of intimacy in the couple by promoting healthy communication, fostering anger management and problem-solving skills, and engaging in shared activities that produce positive emotions. On a more basic level, involving both veterans and their partners in the treatment unifies the couple against the negative effects of PTSD. It is clear that the literature evaluating the efficacy of these couple treatments is in its infancy. While preliminary, the few trials that have been conducted with BCT suggest that it is effective, particularly with the avoidance and emotional numbing symptoms. As the reexperiencing and hyperarousal symptoms are more targeted by traditional exposure therapy (Glynn et al., 1999), these early studies suggest that BCT may be well suited as an adjunctive treatment. Alternatively, as BCT continues to receive research attention, it may be further developed to effectively ameliorate all of the PTSD symptoms and the interpersonal distress associated with them.

Chapter Six: Conclusion

As the current project has a wide breadth, covering many different mechanisms of distress for veterans and their partners, it is helpful to provide its most salient points. When veterans return home from war with PTSD, their symptoms can have detrimental effects on their most significant relationships. Much of this negative impact happens through reduced intimacy and increased aggression. Veterans often have a difficult time feeling positive emotions and communicating those emotions to their partners, which disrupts the formation of intimacy. Because veterans with PTSD have a higher propensity to perceive threat and can be overwhelmed by the resulting arousal, they exhibit more aggression with their partners, causing the partners distress. When the partners are able to see these symptoms as part of a reaction to the traumatic war experiences, this mitigates some of the negative effects that PTSD has on their relationships. As veterans' partners can play a significant role in their response to PTSD treatment, interventions are being developed that help both the veterans and the partners. These interventions are only in their pilot stages, but have the potential to alleviate a lot of distress by targeting many of the mechanisms described in this project.

In addition to the primary findings, it is important to note the boundaries of the current literature on PTSD and veterans' family relationships. One important question to answer with further study is whether or not the demand-withdrawal pattern of communication is adaptive or maladaptive in the context of veterans with PTSD. Because withdrawing from discussion predicts greater marital satisfaction when the alternative is aggression (Roberts, 2000), it may serve a protective function for veterans with PTSD and their partners. However, no studies have yet tested this with a sample of veterans with PTSD. Another area that deserves much further research is secondary traumatic stress. A recent study has shown that only a small percentage of

partners with PTSD symptoms attribute those symptoms to the veterans' war experiences (Renshaw et al., 2011). Many of those who have studied secondary traumatic stress have used a loose definition of the construct and have not employed very focused measures to assess it. Additionally, couples' shared activities and partners' feelings of ambiguous loss have not received much study in the context of veterans with PTSD, and warrant empirical research.

Another important limitation of the literature is that there are very few studies that have looked at samples of female veterans. In the last decade, there has been a steady rise in proportions of female veterans, with over 200,000 women on active duty during OIF/OEF (U.S. Dept. of Veterans Affairs, 2007). Studies that have examined sex differences indicate that PTSD may lead to relationship distress through somewhat different mechanisms for men and women (e.g. Taft et al., 2011). Further research is needed to identify meaningful sex differences that have implications for veterans' treatment. Finally, it is unknown how much distress each of the proposed mechanisms can account for relative to one another. It would prove invaluable to conduct a study in which veterans with PTSD and their partners fill out assessments concerning all of the key factors implicated in psychological and relationship distress. Doing so would allow one to see the relative contribution of each factor to the distress, which could paint a clearer picture about which factors are the most critical to target in therapy.

What the existing literature has unequivocally shown is that research on the effects of PTSD on veterans' close relationships is essential. The impact of PTSD goes far beyond the individual who is diagnosed with it. The psychological and interpersonal distress it causes can persist over decades after the original trauma. Only through research can we gain a better understanding of the enduring burdens that war places on veterans and their families. As research elucidates more and more about the mechanisms underlying veterans' distressed family life,

treatments will become more and more effective at targeting those mechanisms. The highest quality of care can only be ensured through sound research and effective therapy, and as both veterans and their families make sacrifices in service of their country, they deserve nothing less in return.

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Appendix

DSM IV-TR Diagnostic Criteria for Posttraumatic Stress Disorder

A. The person has been exposed to a traumatic event in which both of the following were present:

- (1) the person experienced, witnessed, or was confronted with an event or events that involved actual or threatened death or serious injury, or a threat to the physical integrity of self or others
- (2) the person's response involved intense fear, helplessness, or horror. Note: In children, this may be expressed instead by disorganized or agitated behavior

B. The traumatic event is persistently reexperienced in one (or more) of the following ways:

- (1) recurrent and intrusive distressing recollections of the event, including images, thoughts, or perceptions. Note: In young children, repetitive play may occur in which themes or aspects of the trauma are expressed.
- (2) recurrent distressing dreams of the event. Note: In children, there may be frightening dreams without recognizable content.
- (3) acting or feeling as if the traumatic event were recurring (includes a sense of reliving the experience, illusions, hallucinations, and dissociative flashback episodes, including those that occur on awakening or when intoxicated). Note: In young children, trauma-specific reenactment may occur.
- (4) intense psychological distress at exposure to internal or external cues that symbolize or resemble an aspect of the traumatic event
- (5) physiological reactivity on exposure to internal or external cues that symbolize or resemble an aspect of the traumatic event

C. Persistent avoidance of stimuli associated with the trauma and numbing of general responsiveness (not present before the trauma), as indicated by three (or more) of the following:

- (1) efforts to avoid thoughts, feelings, or conversations associated with the trauma
- (2) efforts to avoid activities, places, or people that arouse recollections of the trauma
- (3) inability to recall an important aspect of the trauma
- (4) markedly diminished interest or participation in significant activities
- (5) feeling of detachment or estrangement from others
- (6) restricted range of affect (e.g., unable to have loving feelings)
- (7) sense of a foreshortened future (e.g., does not expect to have a career, marriage, children, or a normal life span)

D. Persistent symptoms of increased arousal (not present before the trauma), as indicated by two (or more) of the following:

- (1) difficulty falling or staying asleep
- (2) irritability or outbursts of anger
- (3) difficulty concentrating
- (4) hypervigilance
- (5) exaggerated startle response

E. Duration of the disturbance (symptoms in Criteria B, C, and D) is more than 1 month.

F. The disturbance causes clinically significant distress or impairment in social, occupational, or other important areas of functioning.

Specify if:

Acute: if duration of symptoms is less than 3 months

Chronic: if duration of symptoms is 3 months or more

Specify if:

With Delayed Onset: if onset of symptoms is at least 6 months after the stressor