

Interpersonal processes in the anxiety disorders

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POSTTRAUMATIC STRESS DISORDER IN AN INTERPERSONAL CONTEXT

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Posttraumatic stress disorder (PTSD) is a relatively common mental health condition that can occur after exposure to a traumatic event. The lifetime prevalence of the disorder in the general population is about 8%, with a 2:1 prevalence of the disorder in women (10%) compared with men (5%; Kessler, Sonnega, Bromet, Hughes, & Nelson, 1995). Although a range of traumatic stressors may cause PTSD, the genesis of most PTSD cases are man-made traumas (Norris, 1992), portending the inherently interpersonal phenomenology and consequences of the disorder. Nonetheless, there have been limited efforts to understand PTSD through an interpersonal lens, despite compelling evidence establishing an association between PTSD and relationship problems. In this chapter, we describe PTSD and its manifestation in adult close relationships, review the empirical literature documenting an association between PTSD and close relationship problems, discuss theoretical constructs and models explaining the association, present various interpersonally oriented PTSD treatment efforts, and consider future directions for research.

CLINICAL PRESENTATION OF PTSD AND COMMON COMORBID CONDITIONS WITHIN CLOSE RELATIONSHIPS

According to the *Diagnostic and Statistical Manual of Mental Disorders* (4th ed., text rev; American Psychiatric Association, 2000), to be diagnosed with PTSD, a person must have been exposed to a traumatic event in which the person (a) 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 and (b) responded with intense fear, helplessness, or horror. In addition, the person must present with symptoms of each of the three different clusters of PTSD symptoms: reexperiencing, avoidance, and hyperarousal symptoms. *Reexperiencing symptoms* are characterized by intrusive memories, nightmares, flashbacks, and psychological and physiological reactivity when encountering trauma cues. *Avoidance symptoms* consist of avoiding thoughts and activities associated with traumatic experiences, inability to recall aspects of the traumatic event, diminished interest, emotional detachment, restricted affect, and a sense of foreshortened future. *Hyperarousal symptoms* of PTSD include sleep disturbance, irritability or anger, difficulty concentrating, hypervigilance, and an exaggerated startle response.

The symptoms of PTSD alone can adversely affect interpersonal relationships. For example, sleep disturbance and nightmares can cause intimate partners to avoid sleeping together because of the sleep disturbance caused to significant others by awakening or significant others' concerns about the potential for physical harm while sleeping (e.g., partner has combat-related nightmares involving aggression). Significant others also report distress, confusion, and concerns for their own safety during their loved ones' altered states of consciousness involved in flashbacks. The behavioral avoidance symptoms of PTSD can make engaging in routine pleasurable activities with romantic and nonromantic significant others less routine or nonexistent. Emotional numbing directly relates to the ability of those with PTSD to experience and express positive feelings within the range of close relationships. Finally, hyperarousal symptoms can have significant effects on close relationships. Irritability and anger can add tension and stress to close relationships, with surrounding others reporting that they walk on eggshells because of fear of upsetting their loved one with PTSD or provoking an angry outburst (Maloney, 1988).

It is critical to note that PTSD likely affects the interpersonal network of those with the disorder and is also affected by the nature and quality of the relationships in that network. Optimally, interpersonal relationships might facilitate recovery and prevent PTSD or improve the course of PTSD if it is diagnosed. In contrast, a negative, conflictual interpersonal environment may raise the stress level of the traumatized individual and make recovery more difficult. We want to emphasize the potential bidirectional relationship between

PTSD and interpersonal relationships. The way intimate partners, family members, and close friends react to a loved one with PTSD and vice versa may affect the health and well-being of these individuals and their relationships.

EMPIRICAL RESEARCH ON PTSD AND CLOSE RELATIONSHIPS

Much of the research on PTSD and close relationships has been descriptive in nature. For instance, epidemiological research has revealed that individuals with PTSD are as likely to marry as those without the disorder but are between three and six times more likely to divorce than those without PTSD (J. R. Davidson, Hughes, Blazer, & George, 1991; Kessler et al., 1995). A large community study of nearly 5,000 couples in Canada investigated the association between nine mental health diagnoses and the presence or absence of marital distress (Whisman, Sheldon, & Goering, 2000). A diagnosis of PTSD was associated with a 3.8 times greater likelihood of having relationship discord, second only to the 5.7 times greater likelihood of relationship distress with a dysthymia diagnosis. PTSD was on par with the strong associations between relationship distress and major depression, panic disorder, and generalized anxiety disorder.

Research with natural disaster victims has suggested that being married generally functions as a protective factor in men's individual postdisaster mental health, including PTSD symptoms, and as a risk factor for women's mental health (e.g., Brooks & McKinlay, 1992; Fullerton, Ursano, Kao, & Bharitya, 1999; Gleser, Green, & Winget, 1981; S. D. Solomon, 2002; Ursano, Fullerton, Kao, & Bhartiya, 1995). Interestingly, S. D. Solomon (2002) found that women who perceived themselves to have excellent spouse support were more vulnerable to mental health problems than were women with weaker spouse support. She noted that the social ties and obligations that accompany spouse support can serve as a source of stress for married women.

Three cross-sectional studies have assessed both members of heterosexual dyads after disasters to examine the association of their individual postdisaster mental health. In Vila et al.'s (2001) study of families affected by an industrial accident in France, husbands' and wives' individual postdisaster symptoms were correlated with each other. Gleser et al. (1981), studying the dam collapse in Buffalo Creek, West Virginia, found that husbands' mental health symptoms predicted their wives' mental health symptoms, and vice versa, after the severity of trauma exposure and other demographic variables were controlled. However, husbands' symptoms were more strongly predictive of their wives' symptoms than the other way around. This finding is consistent with the literature on the differential influence of intimate relationships on women's versus men's mental health problems in general (e.g., Dawson, Grant, Chou, & Stinson, 2007; Steelman, 2007). In a sample of

hetero-sexual couples who experienced a severe flood, Monson, Gradus, La Bash, and Resick (in press) found that husbands' assumptions about the benevolence of the world moderated the association between wives' benevolent world assumptions and their PTSD symptoms. Specifically, when wives were married to husbands with fewer benevolent world assumptions, the expected inverse association between wives' benevolent world assumptions and PTSD symptoms emerged. Conversely, when husbands held more positive assumptions about the benevolence of the world, there was no association between the wives' assumptions and their PTSD symptoms. These findings suggest that cognitions held by significant others in a couple may serve to potentiate or attenuate the association between negative trauma-related beliefs and PTSD symptoms.

The balance of what is currently known about the intersection of PTSD, close relationship functioning, and significant others' adjustment has been derived mostly from research on male American Vietnam War veterans and their female intimate partners and, to a lesser extent, other countries' male veterans (e.g., Australia, Netherlands, Israel). These studies have consistently revealed that veterans diagnosed with PTSD and their partners report more numerous and severe relationship problems, more parenting problems, and generally poorer family adjustment than trauma-exposed veterans without PTSD and their partners (Jordan et al., 1992). Male veterans with PTSD have been found to be less self-disclosing and emotionally expressive with their partners (Carroll, Rueger, Foy, & Donahoe, 1985) and to have greater anxiety related to intimacy (Riggs, Byrne, Weathers, & Litz, 1998) compared with veterans without PTSD. Male veterans diagnosed with PTSD, compared with those without PTSD, are more likely to perpetrate verbal and physical aggression against their partners and children (Carroll et al., 1985; Glenn et al., 2002; Jordan et al., 1992; Verbosky & Ryan, 1988), with rates as high as 63% for some act of physical violence in the past year (Byrne & Riggs, 1996). The severity of violent behavior has been shown to be positively correlated with PTSD symptom severity (Byrne & Riggs, 1996; Glenn et al., 2002). In addition, research has documented sexual dysfunction across the sexual response cycle in those with PTSD, and especially in those who have been sexually traumatized (Becker & Skinner, 1983; Becker, Skinner, Abel, & Treacy, 1982; Bhugra, 2002; Cosgrove et al., 2002; Kilpatrick et al., 1998; Lee, Gavriel, Drummond, Richards, & Greenwald, 2002; McGuire & Wagner, 1978).

There have been a few attempts to explicate mechanisms accounting for these associations. For example, Jordan et al. (1992) found in the National Vietnam Veterans Readjustment Study that the veterans' PTSD symptoms accounted for variance in their intimate relationship distress above and beyond other factors known to be associated with intimate relationship dysfunction (e.g., childhood behavioral problems, low parental affection, parental violence

and abuse). Riggs et al. (1998) found that of the PTSD symptom clusters, avoidance and numbing were most strongly associated with the ability of veterans diagnosed with PTSD to express emotions in their relationships. Their study suggested that emotional numbing symptoms, in particular, interfered with intimacy, contributing to problems in building and maintaining positive intimate relationships. However, in a sample of male veterans recently returned from Iraq, Nelson Goff, Crow, Reisbig, and Hamilton (2007) found that the veterans' sleep problems, dissociation, and sexual problems were the problems most strongly related to relationship dissatisfaction in both members of the couple.

Several studies have supported the role of cognitive processes in the association between veterans' PTSD and romantic relationship functioning. Using a modified Stroop methodology, Miterany (2004) found that priming with positive interpersonally oriented words (e.g., *love*) lowered the reaction time to trauma-relevant words among participants with PTSD symptoms, suggesting that evoking positive, interpersonally oriented cognitions or emotions might facilitate an individual's ability to filter out or temper threat-relevant cues. Studying cognitive variables at the dyadic level, Renshaw, Rodrigues, and Jones (2008) investigated the moderating role of wives' beliefs about their husbands' combat experiences. When wives believed that their husbands who had served in the National Guard in Iraq had experienced lower levels of combat exposure and their husbands reported high levels of PTSD symptoms, the wives reported the highest levels of relationship distress. Renshaw et al. interpreted these findings as an indication that partners' attributions about trauma-related symptoms contribute meaningfully to their feelings about the relationship. Given that relationship distress can serve as a general stressor that aggravates the course of PTSD, psychoeducation about trauma and its effects, in conjunction with disclosure to promote a shared understanding of traumatic experiences, offers the potential to facilitate recovery from PTSD.

Relatively more work has been done on factors accounting for the association between PTSD and intimate aggression perpetration. Using data from the National Vietnam Veterans Readjustment Study, Savarese, Suvak, King, and King (2001) found that veterans' self-reported hyperarousal symptom severity was particularly associated with partners' reports of psychological and physical violence victimization. Orcutt, King, and King (2003) used structural equation modeling with National Vietnam Veterans Readjustment Study data and found that PTSD had a direct relationship to the male veterans' perpetration of physical violence against their female partners. Factors previously established to be associated with intimate aggression perpetration, such as early family stressors and childhood antisocial behavior, were indirectly related to violence perpetration through their contribution to the likelihood of having PTSD. Interestingly, after the association between combat trauma exposure and PTSD was taken into account, higher trauma exposure was associated with less intimate

violence perpetration. It appears that PTSD versus trauma exposure is unique in potentiating intimate aggression. Moreover, this research suggested that prior traumatic experiences without consequent PTSD may decrease the likelihood of perpetrating trauma against an intimate partner.

PTSD without at least one comorbid condition is the exception versus the rule (Kessler et al., 1995). The most commonly occurring comorbidities are depression, substance use disorders, and personality disorders. There are well-established literatures documenting the interpersonal aspects of each of these common comorbidities with regard to the onset, course, and treatment of the disorders (O'Farrell & Fals-Stewart, 2006; O'Leary & Beach, 1990). A few studies have examined the shared and unique associations among PTSD, any of these conditions, and interpersonal variables. Savarese et al.'s (2001) study on the association between PTSD and perpetration of intimate aggression in Vietnam veterans is one example. As noted earlier, hyperarousal symptoms were specifically associated with intimate aggression perpetration, but this relationship was moderated by alcohol use patterns. More frequent alcohol use, but in smaller quantities, diminished the association between hyperarousal symptoms and PTSD. Larger quantities of alcohol paired with more frequent use strengthened the association between hyperarousal symptoms and PTSD. Two studies with different types of trauma samples have examined the role of depression in the association between PTSD and relationship problems. Taft, Vogt, Marshall, Panuzio, and Niles (2007), examining a sample of male combat veterans seeking diagnostic assessment of PTSD, found that dysphoria was directly, and through PTSD, associated with the veterans' perpetration of aggressive behavior. Investigating a sample of predominantly female motor vehicle accident survivors, Beck, Grant, Clapp, and Palyo (2009) used hierarchical multiple regression to investigate the relative contribution of depression and PTSD symptoms in predicting interview-rated interpersonal functioning and self-reported social support. They found that depression, and not PTSD, predicted overall interpersonal functioning. Both the emotional numbing symptoms of PTSD and depression generally predicted social support. These studies highlighted potential sample differences (e.g., gender, type of trauma) and differences on the basis of assessment methodology. Additional research teasing out the role of comorbid conditions in the association between PTSD and interpersonal relationship problems is needed.

THEORETICAL CONSTRUCTS AND MODELS ACCOUNTING FOR PTSD AND CLOSE RELATIONSHIP PROBLEMS

Several constructs and theories have been put forth to account for the associations among trauma exposure, PTSD, and close relationship functioning. We organize these constructs and theories by the generally presumed

direction of causality among the significant other, the individual who has been traumatized or has PTSD, and their close relationship functioning. We begin with those addressing the effect of close others on people who have been traumatized or have PTSD. Next, we review constructs positing a deleterious effect of PTSD on others in close relation to an individual with PTSD, and finally, we describe theories that posit reciprocal effects between significant others, the person with PTSD, and the shared influence of their relationship functioning.

Effect of Close Others on Trauma Recovery and PTSD

There have been relatively fewer constructs put forth presuming a causal pathway from close relationship functioning to individual posttraumatic symptom expression. The roles of social support and adult attachment are two such notions.

Social Support

Of the numerous factors that have been associated with the development and maintenance of PTSD, social support has emerged as one of the most robust constructs. According to meta-analysis, social support is among the variables most consistently and strongly associated with PTSD (Brewin, Andrews, & Valentine, 2000; Ozer, Best, Lipsey, & Weiss, 2003). Two consistent findings regarding the qualities of social support and PTSD are that perceived support is more important than objective support and that negative support is more powerful as a risk factor than positive support is as a protective factor (for a review, see Charuvastra & Cloitre, 2008).

Although the research establishing an association between social support and PTSD is well developed, the specific aspects of social support that account for its association with PTSD symptoms are not as fully understood. According to Joseph, Williams, and Yule (1997), significant others' appraisals of traumatic events positively or negatively influence survivors' own appraisals of traumatic events and, consequently, have an impact on the survivors' PTSD symptoms. For example, significant others might normalize a survivor's freezing response in an inescapable traumatic event and correct appraisals that alternative courses of actions would have led to positive outcomes. Williams and Joseph (1999) also argued that social support affects survivors' emotional states and coping strategies, which directly and indirectly facilitate recovery.

Although originally construed as a close relationship factor acting on the traumatized individual, there is evidence that chronic stress and chronic PTSD can, in fact, diminish the availability and quality of social support. Several researchers have found that certain types of chronic traumatic stressors (e.g., natural disasters) can erode social support, independent of PTSD symptoms

(Kaniasty & Norris, 1993; Lepore, Evans, & Schneider, 1991). The symptoms of PTSD can also erode social support. For example, a longitudinal study of more than 2,000 veterans who served in the first Gulf War revealed that PTSD symptoms 18 to 24 months after return from service were negatively associated with social support 5 years later. However, social support at the first assessment was not associated with PTSD symptoms 5 years later (King, Taft, King, Hammond, & Stone, 2006). Our clinical experience is that the symptoms of PTSD can burn out social support providers. In the course of working with couples in which one member has PTSD, one of us encountered a wife who was very reluctant to be emotionally supportive of her husband after living with his PTSD-related anger and irritability during their nearly 30 years of marriage.

Adult Attachment

Attachment theory, as originated by Bowlby (e.g., 1982), is primarily focused on understanding the effect of caregivers' responsiveness and attentiveness on the socioemotional health of infants and children. Hazan and Shaver (1994) were two of the first researchers to extend Bowlby's notions to adult intimate relationships. They argued that security in intimate relationships, like that found in healthy caregiver-child relationships, facilitates emotion regulation, effective cognitive processing of information, and clear communication.

The contribution of adult attachment theory to explain the effects of PTSD on others is related to two groups of questions: (a) the contribution of adult attachment to coping with traumatic events and (b) the effects of trauma on attachment and interpersonal relations. In relation to the former, insecure attachment developed in childhood and extending into adulthood is considered to be a risk factor that reduces resilience in times of stress, fosters negative affectivity, and contributes to emotional problems, maladjustment, and psychopathology when presented with stress (Mikulincer, Shaver, & Horesh, 2006). Regarding the latter, trauma increases the need for protective attachments and, at the same time, undermines the ability to trust and, therefore, to build such attachments (S. M. Johnson & Makinen, 2003). The negative impact of these interpersonal difficulties produces a relational cycle of mutual distance and disconnection between partners, reducing the secure attachment necessary for healthy functioning (S. M. Johnson, 2002).

Several cross-sectional studies of adults have found positive correlations among self-reported adult attachment insecurity, difficulties coping with traumatic events, and PTSD (e.g., Dieperink, Leskela, Thuras, & Engdahl, 2001; Z. Solomon, Ginzburg, Mikulincer, Neria, & Ohry, 1998). However, a recent longitudinal study has called into question the notion of adult attachment problems as a risk factor for PTSD symptoms. In a sample of Israeli prisoners of war, PTSD and attachment dimensions were assessed on two occasions.

PTSD symptoms at initial assessment predicted later attachment patterns better than vice versa (Z. Solomon, Dekel, & Mikulincer, 2008). These findings are consistent with prior studies showing relative instability in attachment patterns over time (Fraley, 2002) and also suggest that PTSD symptoms may be equally or more likely to negatively affect attachment within intimate relationships than the converse. Additional empirical research is needed to clarify the directionality of the associations among attachment, trauma, PTSD, and interpersonal relationships.

Effect of PTSD on Close Others

Various authors have described PTSD symptomatology to have a deleterious effect on close others and intimate relationship functioning. Secondary or vicarious traumatization, caregiver burden, ambiguous loss, and the intergenerational transmission of PTSD have been put forth to describe this way of conceptualizing the PTSD–close relationship association.

Secondary or Vicarious Traumatization

Several authors have discussed the secondary effects of trauma-related symptoms, including PTSD, on close others, including intimate partners, children, close friends, and therapists (e.g., McCann & Pearlman, 1990b; Z. Solomon et al., 1992). According to Figley (1989), the process of secondary traumatization starts with close others' efforts to emotionally support their troubled loved ones, which leads to attempts to understand their feelings and experiences and, from there, to empathize with them. In the process of gathering information about their suffering, significant others can take on the traumatized person's feelings, experiences, and even memories as their own—and, hence, their symptoms. In this conceptualization, those who are close to the trauma survivor can overidentify with him or her (Catherall, 1992; Figley, 1995) and develop symptoms that mimic the trauma symptoms in the survivor (Maloney, 1988; Z. Solomon et al., 1992). Others have considered a wide range of manifestations of distress, in addition to those that mimic post-traumatic symptoms, to constitute secondary or vicarious trauma (Dekel & Solomon, 2006).

Cross-sectional research has documented an association between PTSD in one partner and mental health problems and compromised life satisfaction in the other partner. Most of this research has been done with male combat veterans and their female partners. Using the instructions given to the identified partner with PTSD, female partners of those with PTSD reported symptoms specific to their partner's identified traumas. Others have not anchored the female partner's report of symptoms to her partner's trauma(s), making it difficult to determine whether the woman responded on the basis of her own

history of trauma exposure or nontraumatic stressors or without a particular index event that she or her partner experienced. Using a broader definition of secondary or vicarious traumatization, female partners of veterans with PTSD, compared with female partners of veterans without PTSD, have reported more mental health symptoms (e.g., depression, anxiety), markedly reduced quality of life, greater feelings of demoralization, and more impaired and unsatisfying social relations (Jordan et al., 1992; Waysman, Mikulincer, Solomon, & Weisenberg, 1993; Westerink & Giarratano, 1999).

Caregiver Burden

Caregiver burden is defined as the extent 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). This construct emerged in the literature on caregivers of chronically physically ill and mentally ill individuals (Chakrabarti & Kulhara, 1999; Cuijpers & Stam, 2000; Loukissa, 1995; Piccinato & Rosenbaum, 1997) and has been applied to female romantic partners of combat veterans with PTSD.

Several studies have shown an association between wives' perceived caregiving burden and their husbands' combat-related PTSD, as well as a relationship between caregiving burden and wives' level of individual distress (Beckham, Lytle, & Feldman, 1996; Ben Arzi, Solomon, & Dekel, 2000; Calhoun, Beckham, & Bosworth, 2002; Dekel, Solomon, & Bleich, 2005; Manguno-Mire et al., 2007).

Ambiguous Loss

This model suggests that two different experiences of perceived loss are associated with ambiguity. The first is in cases in which there is a physical absence with psychological presence, and the second is when there is a psychological absence with physical presence (Boss, 1999, 2007). PTSD in a relationship has been considered to fit the second type of ambiguous loss (Dekel, Goldblatt, Keidar, Solomon, & Polliack, 2005). According to this theory, the uncertainty or lack of information about the whereabouts or status of a loved one as absent or present is difficult for most individuals, couples, and families. The ambiguity freezes the grief process and prevents cognitive processing, thus blocking coping and decision-making processes (Boss, 1999).

As a result of the ambiguity regarding the loss of a loved one, significant others may experience symptoms of depression, anxiety, guilt, and distressing dreams. In addition, family members are uncertain in their perception of who is in or out of the family and who is performing what roles and tasks within the family system. This could result in immobilization of the family, such that

decisions are put on hold or that more tasks are taken on by the “healthier” partner or by children taking on roles that are beyond their capacity (Boss, 1999).

A qualitative study of wives of Israeli veterans with PTSD has provided some support for ambiguous loss associated with PTSD. Wives’ concerns included questions about whether the spouse is a husband or another child and, relatedly, whether he is an independent adult or a dependent person who needs constant care. This ambiguity was associated with psychological distress in the women (Dekel et al. 2005).

Intergenerational Transmission of PTSD

The notion that PTSD in one family generation or proband can translate into risk of PTSD in subsequent generations was originally raised with regard to Holocaust survivors and their families. Many of the studies in this population did not examine risk on the basis of PTSD status but rather on the basis of exposure to Holocaust experiences. A meta-analysis of studies involving more than 4,000 participants revealed minimal evidence that parents’ traumatic Holocaust experiences alone were associated with PTSD symptomatology in their offspring (Van IJzendoorn, Bakermans-Kranenburg, & Sagi-Schwartz, 2003). Studies of PTSD specifically have revealed that parental PTSD (Kellerman, 2007), and especially maternal PTSD (Yehuda, Bell, Bierer, & Schmeidler, 2008), in Holocaust survivors has been associated with general mental health problems in their offspring. A few studies have also attempted to identify cross-generational biological markers associated with PTSD in this population. Studies have shown that the offspring of Holocaust survivors who have PTSD tend to have lower cortisol levels, for example (Yehuda et al., 2000; Yehuda, Blair, Labinsky, & Bierer, 2007; Yehuda, Halligan, & Bierer, 2002).

Studies on the intergenerational transmission of combat veterans’ PTSD to their offspring have revealed inconsistent findings. For example, J. R. Davidson, Smith, and Kudler (1989) found that children of male veterans with PTSD had received more mental health treatment, had more eating and communication disorders, and had more academic and behavior problems than children in a control group of fathers without PTSD. Ahmadzadeh and Malekian (2004) found higher rates of aggression and anxiety among Iranian children whose fathers were veterans with PTSD in comparison with children of nonveteran fathers. In a sample of help-seeking veterans with PTSD, Beckham et al. (1997) found that these veterans’ children reported high levels of illegal drug use, behavioral problems, PTSD symptoms, and hostility. Other studies of the children of veterans with PTSD have found no differences in emotional distress (A. C. Davidson & Mellor, 2001; Souzzia & Motta, 2004; Westrink & Giarratano, 1999), social development (Ahmadzadeh & Malekian,

2004), or self-esteem (A. C. Davidson & Mellor, 2001; Westerink & Giarratano, 1999) compared with children from various control groups.

Research on the intergenerational transmission of PTSD has yet to advance to using more sophisticated behavioral genetic methods designed to disentangle the environmental and genetic factors at work to place someone at risk for PTSD. Moreover, this work has tended to identify nonspecific mental health problems in offspring versus the specific conferred risk of PTSD intergenerationally. Thus, it is difficult to ascertain whether the possible intergenerational risk of PTSD is related to an increased likelihood of traumatic exposure in these families, psychological factors reviewed earlier and others that have yet to be identified, shared genetic risk, or an interaction of these factors.

Reciprocal Influences of PTSD and Close Relationship Functioning

The field is beginning to appreciate the likely reciprocal causal association between PTSD and close relationship functioning. Two systemic models have been put forth to date.

Couple Adaptation to Traumatic Stress

The couple adaptation to traumatic stress (Nelson Goff & Smith, 2005) model provides a systemic description of how individuals and couples are affected when trauma occurs. The model proposes that adaptation to traumatic stress in the couple is dependent on the systemic interaction of three factors: individual level of functioning of each of the partners, predisposing factors and resources, and couple functioning.

The model assumes that a survivor's level of functioning or trauma symptoms will set in motion a systemic response with the potential to result in secondary traumatic stress symptoms in the partner. However, because the model is bidirectional, partners' symptoms may intensify trauma-related symptoms in the survivor. Individual and couple functioning are determined by predisposing factors and resources (McClubbin & Patterson, 1982), which refer to individual characteristics or unresolved stress experienced by either partner before the trauma. Last, in between the individual and predisposition layers, there is the "couple functioning" component, which relates to the level and quality of variables such as relationship satisfaction, support or nurturance, intimacy, communication, and conflict, which are described as mutually influential components of the dyad system.

Cognitive–Behavioral Interpersonal Theory of PTSD

Monson, Stevens, and Schnurr (2004, 2006) have previously outlined a cognitive–behavioral theory accounting for the association between inti-

mate relationship problems and PTSD. In this chapter, we expand this theory to include nonromantic close others. We present the model as applied to romantic dyads for greater ease in describing the model; however, the mechanisms described in the model could be applied and tested in groups or networks of close others more broadly (e.g., family members). As illustrated in the model depicted in Figure 7.1, we postulate that behavioral, cognitive, and emotional variables dynamically interact within each individual. In turn, these factors in each individual interact at the dyadic level to influence the relationship milieu shared by the dyad, as well as the components acting within each individual. In other words, there are within- and between-individual cognitive, behavioral, and affective interactions that influence the individuals involved and the relationship that they share.

In behavioral conceptualizations of PTSD, classical conditioning processes account for why certain stimuli associated with trauma later provoke the anxiety response; operant conditioning, and specifically the negative reinforcing value of avoidance, accounts for the maintenance of the anxiety response (Mowrer, 1960). At the dyadic level, significant others' well-intended caretaking behaviors (e.g., running interference with extended family members)

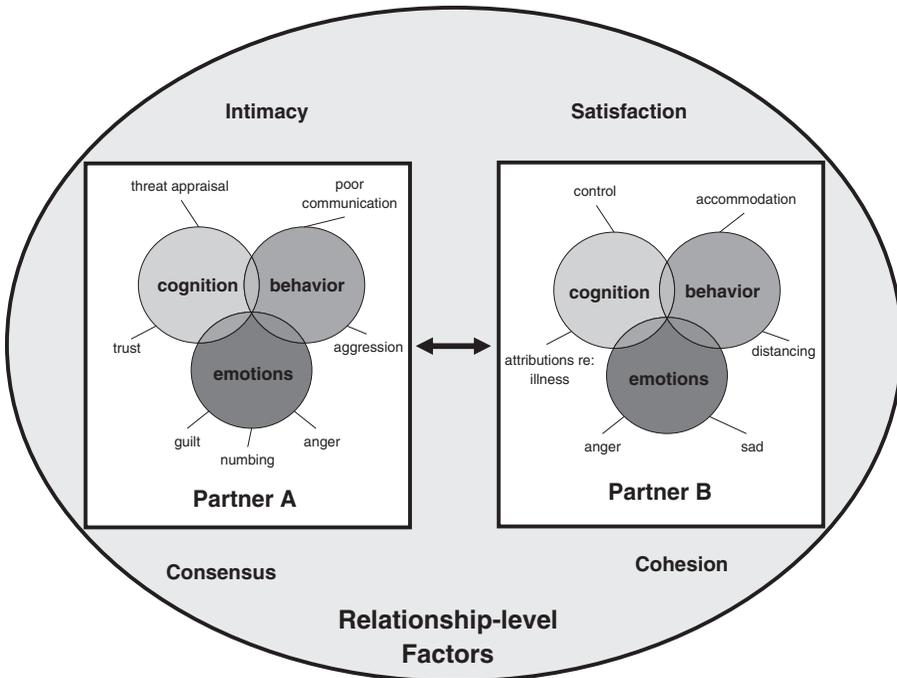


Figure 7.1. Cognitive-behavioral interpersonal theory of posttraumatic stress disorder.

can sometimes serve to promote or maintain avoidant behavior. In this way, the significant others' behavior "accommodates" the disorder. An example of behavioral accommodation that we have encountered is of a husband who drove his wife everywhere after her motor vehicle accident. We also worked with a couple in which the wife took over all shopping-related chores because grocery stores, malls, and other crowded venues served as PTSD-related triggers secondary to her husband's combat experiences. In some couples, partners may view these types of behaviors as opportunities to show care and concern for a loved one in distress; in others, partners may feel angry or resentful about taking on extra responsibilities that feel burdensome to them. However, regardless of partners' intentions, such behaviors can inadvertently reinforce the traumatized individual's avoidance and interfere with his or her recovery from PTSD.

Behavioral accommodation can also diminish close relationship satisfaction through less engagement in mutually reinforcing activities (e.g., dining out), constriction of affective expression, and limited self-disclosure, including trauma-related disclosure. Poor communication and conflict management, in tandem with avoidance, decrease the likelihood of effective trauma disclosure. Trauma disclosure in an encouraging and supportive environment can lead to the development of a more cogent trauma narrative and emotional processing of traumatic memories. Limited conflict management and problem-solving skills are also theorized to mediate the relationship between the hyperarousal symptoms of PTSD and aggressive relationship behavior.

We theorize that there are interrelated cognitive processes and thematic content that account for the association between PTSD and close relationship problems. Individual and dyadic dysfunction are theorized to arise from reliance on enduring, rigid, and maladaptive schemas in making meaning of experiences and the environment (Young, 1994). Borrowing from earlier work by McCann and Pearlman (1990a) also found in cognitive processing therapy (Resick, Monson, & Chard, 2007), we posit that themes such as safety, trust, power, esteem, and intimacy are disrupted as a result of the trauma and are pertinent to close relationship functioning. An example of an interpersonally oriented cognition with significant interpersonal implications comes from a veteran who served as a medic in Vietnam. His traumatic event involved the death of a Vietnamese child in his arms whom he believed he should have been able to save. As a consequence, he avoided holding his children or grandchildren, believing "children in my arms die."

We assert that the emotional disturbances associated with traumatization go beyond anxiety. There is strong evidence that individuals with PTSD experience disruption in a range of emotions in addition to fear, including guilt, shame, anger, grief, and sadness (e.g., Kubany & Watson, 2002; Novaco & Chemtob, 2002). In addition, avoidance can also generalize to the experi-

ence and expression of emotions in PTSD (Boeschen, Koss, Figueredo, & Coan, 2001). Emotional process disturbances such as alexithymia and difficulties with identifying and expressing emotions have also been associated with PTSD (Price, Monson, Callahan, & Rodriguez, 2006). These emotional content and process disturbances are suspected to contribute to emotional communication deficits and their related relationship impairments.

INTERPERSONALLY ORIENTED PTSD TREATMENT EFFORTS

Meta-analyses have revealed that the existing psychotherapies for PTSD result in substantial improvements in PTSD symptoms for many (Bradley, Greene, Russ, Dutra, & Westen, 2005; Van Etten & Taylor, 1998). Moreover, these treatments have been shown to improve overall social functioning in patients with PTSD (e.g., Foa et al., 1999; Galovski, Sobel, Phipps, & Resick, 2005). However, these gains do not necessarily translate to improvements in interpersonal relationship functioning. For example, in Monson, Macdonald, et al.'s (2006) randomized trial of cognitive processing therapy for veterans with military-related PTSD, participants experienced statistically significant improvements in overall social adjustment by the end of treatment, but there were no significant improvements in the interpersonal realms of functioning (e.g., spousal and family relations) from pre- to post-treatment (Monson, Macdonald, et al., 2006). Thus, to improve intimate relationship functioning, more interpersonally oriented treatments are indicated. In the next section, we review treatments for PTSD that target intimate relationship functioning, either through conjoint treatment with a significant other or through individually delivered treatment with an explicit interpersonal focus. We also review what is known about the contribution of interpersonal variables to outcomes in the context of individually delivered cognitive-behavioral therapies for PTSD.

Controlled Trials of Conjoint Therapies for PTSD

Only two randomized clinical trials have investigated conjoint therapy for PTSD, and both were conducted with samples of male combat veterans and their female partners. In an early small trial, Sweany (1987) compared general group behavioral couple therapy consisting of eight weekly 2-hour sessions focused on increasing positivity, improving communication and problem solving, and enhancing intimacy to a waiting-list control with a sample of combat veterans. Compared with those on the waiting list, those receiving behavioral couple therapy experienced significant self-reported improvements in PTSD symptoms, relationship satisfaction, and depression.

In a larger controlled study, Glynn et al. (1999) randomized Vietnam veterans with combat-related PTSD to (a) 18 sessions of twice-weekly individual directed therapeutic exposure (DTE) focused on repeated review and cognitive restructuring of two traumatic memories; (b) 18 sessions of twice-weekly individual DTE followed by 16 sessions of behavioral family therapy (DTE + BFT) consisting of psychoeducation about PTSD and available mental health services, communication skills training, anger management, and problem-solving; or (c) a waiting list. Most family members were intimate partners (89%). Compared with those on the waiting list, both active treatment groups demonstrated significant improvements in what the authors defined as the *positive* symptoms of PTSD (reexperiencing and hyperarousal) but not the *negative* symptoms (avoidance and numbing) or social adjustment. Although the two treatment groups did not differ statistically from each other at posttreatment or at follow-up with regard to PTSD symptoms, the change in positive symptoms was approximately twice as large in the DTE + BFT condition as in the DTE-alone condition. In addition, participants who received BFT demonstrated significantly more improvements in problem solving than did those who did not receive BFT. It is of note that roughly one third of the participants who were randomized to DTE + BFT dropped out of the condition after they received DTE but before they received BFT. Glynn et al. attributed this relatively high rate of dropout to remaining PTSD avoidance and numbing symptoms and the fragility of the veterans' relationships. Because of the serial design of this additive treatment study, it is difficult to determine the potential role of the veterans' couple or family member in facilitating DTE. Nevertheless, this is one of the few early studies showing any improvements in veterans' PTSD using a conjoint family format.

There have been four uncontrolled trials of conjoint therapy for PTSD with veterans; three of them used general behavioral couple therapy delivered in a group, and one used a cognitive-behavioral conjoint therapy developed specifically for PTSD delivered to individual couples. Cahoon (1984) reported the results of a 7-week group behavioral couple therapy focused on communication and problem-solving training for combat veterans and their female partners. Group leaders reported statistically significant improvements in veterans' PTSD symptoms and coping abilities, and female partners reported significant improvements in marital satisfaction and problem-solving communication. The veterans did not report improvements in problem-solving or emotional communication skills.

Deville (2002) described the results of an uncontrolled study of Australian combat veterans and their partners who participated in an intensive week-long residential group intervention known as a Lifestyle Management Course. Topics included psychoeducation about PTSD, relaxation, meditation, self-care, diet and nutrition, alcohol, stress management, anger

management, communication, and problem solving. At follow-up assessments, both veterans and their partners reported small, but significant, reductions in anxiety, depression, and stress; veterans reported a significant reduction in PTSD symptoms. Small improvements were also observed for anger and quality of life but not for relationship satisfaction. Another program for veterans with PTSD and their partners was the K'oach program (Rabin & Nardi, 1991). This cognitive-behavioral program included psychoeducation about PTSD and communication and problem-solving skills training. Minimal outcome data were reported on this intervention; however, 68% of the men and their wives reported relationship improvements. No decrease in veterans' PTSD symptoms was observed.

Cognitive-behavioral conjoint therapy for PTSD (Monson, Fredman, & Stevens, 2008) is a PTSD-specific conjoint treatment that has shown promise in simultaneously addressing both individual PTSD symptoms and relationship problems. This 15-session treatment consists of three modules: (a) psychoeducation about the dynamic interplay between PTSD and relationship functioning, exercises to promote positivity, and a shared sense of safety; (b) behavioral interventions that increase approach behaviors, enhance relationship satisfaction, and promote communication skills; and (c) cognitive interventions designed to address maladaptive thinking patterns that maintain both PTSD symptoms and relationship distress. Monson, Schnurr, et al. (2004) reported the results of an uncontrolled pilot study of cognitive-behavioral conjoint therapy for PTSD designed to evaluate this treatment in a small sample of Vietnam veterans with combat-related PTSD and their wives. From pre- to posttreatment, there were large and statistically significant improvements in clinicians' and partners' ratings of veterans' PTSD symptoms. The veterans reported moderate improvements in PTSD and statistically significant and large effect size improvements in depression, anxiety, and social functioning. Wives reported large effect size improvements in relationship satisfaction, general anxiety, and social functioning (Monson, Stevens, & Schnurr, 2004). Since the results of this study have been published, the treatment has been modified to be more trauma focused in nature, to have a greater emphasis on decreasing couple-level avoidance, and to focus more on promoting acceptance of traumatic events and couple-level posttraumatic growth (for a review of these changes, see Monson, Fredman, & Adair, 2009).

There have been several other applications of conjoint or family therapies to trauma survivors, but no outcome data have yet been published to support their efficacy. S. M. Johnson (2002) published a book on emotion-focused couple therapy for trauma survivors that includes case examples of the therapy's application. Leonard, Follette, and Compton (2006) described the application of behaviorally oriented principles, such as functional analysis and contingent responding, in combination with acceptance strategies, to assist

couples affected by trauma. Other couple- or family-based approaches to the treatment of PTSD include family systems therapy (Figley, 1989), in which therapists work with families to help members communicate and solve problems; critical interaction therapy for veterans (D. R. Johnson, Feldman, & Lubin, 1995), in which couples are assisted with identifying trauma-related maladaptive interactional patterns and generating more constructive communication and problem-solving strategies; and the Support and Family Education (S.A.F.E) Program (Sherman, 2003), a family psychoeducational program for families in which one member suffers from a mental illness.

The interventions reviewed here have included significant others in the treatment to facilitate patients' recovery. However, there has been limited exploration of variables that predict whether significant others of an individual with PTSD will participate in the treatment process. One exception is Sautter et al.'s (2006) work to identify predictors of partner engagement in PTSD treatment. Through a telephone survey of cohabitating female partners of male Vietnam combat veterans with PTSD, Sautter et al. found that lower income, higher partner involvement in patients' lives (i.e., general emotional involvement, as well as specific behavioral involvement through shared activities), and greater partner caregiver burden for the veteran predicted higher levels of partners' engagement in treatment.

Interpersonal Influences on Individually Delivered PTSD Treatment Outcomes

A commonly used construct for evaluating the family environments of individuals with psychopathology is expressed emotion (Leff & Vaughn, 1985). *Expressed emotion* is defined as the extent to which the relatives of a psychiatric patient display criticism, hostility, or emotional overinvolvement in regard to the patient. In their study of imaginal exposure and cognitive therapy for PTSD, Tarrier, Sommerfield, and Pilgrim (1999) found that patients from families high in expressed emotion at pretreatment displayed less improvement in PTSD symptoms, depressive symptoms, and general anxiety after treatment than did patients from families low in expressed emotion. Additional analyses revealed that relatives' critical and hostile attitudes were associated with relatives attributing patients' behaviors to factors under the patients' control (Barrowclough, Gregg, & Tarrier, 2008). Specifically, deficits in normal behavior (negative symptoms), such as avoidance and restricted affect, were perceived as more controllable, internal, and stable than were the more obvious signs of PTSD (positive symptoms), such as hypervigilance and nightmares. Anger and irritability on the part of the patient were perceived as the most controllable PTSD symptoms. Although controllability attributions

were associated with critical and hostile attitudes by relatives, they were not predictive of treatment outcome.

Monson, Rodriguez, and Warner (2005) studied the role of pretreatment interpersonal relationship variables in two forms of group cognitive-behavioral therapy for veterans with PTSD (trauma vs. skills focused). Although there were no differences in the PTSD outcomes of the two forms of treatment, there was a stronger inverse relationship between pretreatment intimate relationship functioning and violence perpetration outcomes in the trauma-focused group than in the skills-focused group. That is, greater intimate relationship adjustment at pretreatment was associated with lower levels of violence perpetration at follow-up for veterans who received trauma-focused versus skills-focused treatment.

Individual Interpersonal Psychotherapy for PTSD

Recognizing the interpersonal dimensions of PTSD and the success of interpersonal psychotherapy for depression (Klerman, Weissman, Rounsaville, & Chevron, 1984), Bleiberg and Markowitz (2005) applied interpersonal psychotherapy to the treatment of PTSD in a pilot study of patients who had experienced a range of traumatic events. The 14-week treatment focused on the interpersonal sequelae of trauma, such as interpersonal hypervigilance, difficulty trusting others, and impediments in social functioning as a result of avoidance. Bleiberg and Markowitz reported a low incidence of dropout from treatment (13 of 14 patients completed therapy) and significant reductions in PTSD and other comorbid conditions. At posttreatment assessment, 12 of 14 patients no longer met diagnostic criteria for PTSD, and 13 of 14 patients reported decreases across all three symptom clusters. Significant improvements were also observed in depression, anger, and interpersonal functioning.

CONCLUSIONS AND FUTURE DIRECTIONS

A growing body of evidence has substantiated the notion that PTSD exists within an interpersonal context that affects and is affected by close relationships. Although we have highlighted the likely bidirectional associations between PTSD and interpersonal variables, the empirical foundation of this assumption is not yet well established. With very few exceptions, almost all of the studies to date have been cross-sectional and, therefore, cannot speak with much certainty to the directionality of the various associations that have been found. Further prospective and longitudinal studies are sorely needed to understand the causal pathways of these variables.

As revealed in this chapter, much of what is known about PTSD and adult interpersonal relationships, with the exception of the role of social support in trauma recovery, relates to romantic relationships. Less knowledge is available about the association between PTSD and problems in other significant adult relationships (e.g., parents, close friends). Moreover, much of the knowledge in this area stems from studies on male veterans with PTSD. The association between interpersonal problems and PTSD in other trauma populations, and the potential for gender differences in these associations, has not been fully examined. It is also important to add that although this chapter focuses on adult close relationships, the effects of PTSD on parenting is an important issue in need of further empirical investigation (for a review, see Dekel & Goldblatt, 2008).

In this chapter, we presented several theories that seek to explain the interpersonal risk and resilience factors and consequences of PTSD. Yet, we are left wanting more research to support them. It is time to move beyond a description of the interpersonal problems associated with PTSD toward theory-driven research that can begin to elucidate the mechanisms accounting for the associations. For example, further longitudinal research on the association between adult attachment and PTSD would help to clarify the processes through which attachment style is both affected by and moderates the association between trauma exposure and the development and course of PTSD. The field would also profit from research that considers the developmental aspects of intimate relationships and PTSD. For instance, how do family life-cycle issues, such as rearing children, caring for aging parents, and contemplating one's own and one's partner's changing health status interact with the presence of PTSD in a couple? How does the length of time that the couple has been together with or without the presence of PTSD in the relationship affect these issues? Are the interpersonal variables associated with the development of PTSD different from those associated with its maintenance?

We have focused on the dynamic interplay between individual psychological functioning and interpersonal functioning. It is important to note that these spheres of functioning interact in the context of a range of biological factors (e.g., neurohormones, brain structures) that have been linked to PTSD (Southwick et al., 2007). In addition, a wider sociocultural milieu envelops and influences the individuals who live within that culture. For example, the rate of divorce among veterans with PTSD in Israel is lower than that found in the general Israeli population (Dekel, Goldblatt, et al., 2005), which is in contrast to the earlier reviewed heightened risk of divorce among veterans with PTSD in the United States. The perception of trauma and its effects and the importance of marriage and close others in various cultures should be better understood and taken into considera-

tion when analyzing the interpersonal nature of PTSD. We hope that future research might take into account this larger biopsychosocial understanding of PTSD and the recursive relationships among these different levels of functioning. Kilpatrick et al.'s (2007) study of the interaction among trauma exposure, the serotonin transporter gene polymorphism, and social support in a sample of hurricane survivors in the southern United States illustrates the larger biopsychosocial approach to PTSD we want to promote.

Greater understanding of the interpersonal nature of PTSD, the longitudinal course of the PTSD–close relationship association, and the mechanisms that account for the association will ultimately be of value to refining and developing interpersonally oriented PTSD prevention and treatment strategies. Although social support appears to be one of the most important resilience factors in warding off PTSD, no efforts have been made to capitalize on this factor in prevention efforts. It may be very beneficial to help traumatized persons martial social support, use it effectively, and prevent burnout of their support network to prevent PTSD. In addition, application of the existing conjoint treatments to nonromantic significant others is another important avenue to pursue to reach the widest number of patients and their loved ones with PTSD. Finally, it is important to consider how technology (e.g., websites, teletherapy) might be used to incorporate significant others who are otherwise unwilling or unable to participate in the existing treatments but who could greatly facilitate their significant other's PTSD treatment. These interventions have the added benefit of addressing a range of barriers to care (e.g., stigma, transportation, proximity to health care settings with expertise in these interventions).

We are delighted to see more appreciation of the interpersonal nature of PTSD and efforts to capitalize on these interpersonal aspects to innovate and improve treatment. It is exciting to consider where these efforts will take the study and treatment of PTSD and the ultimate benefits of these advancements for traumatized individuals and their loved ones.

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