Chapter 10
Trauma, PTSD, and Partner Violence in Military Families

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Abstract Intimate partner violence (IPV) is a public health problem in the United States that may be particularly elevated among military populations exposed to trauma who evidence symptoms of posttraumatic stress disorder (PTSD). As this chapter illustrates, evidence indicates that the development of posttraumatic psychopathology, and particularly PTSD, is strongly associated with the development of violence and abusive behavior in relationships. In addition to the review of research on the association between PTSD and IPV in military populations, in this chapter we discuss information processing models explaining the link between PTSD and IPV and potential moderators of this association, as well as strategies to prevent and treat IPV in this population. Recommendations for future work in this area of investigation and program development are also provided.

Intimate Partner Violence in Military Populations

Intimate partner violence (IPV) is a serious national public health problem with significant societal costs. Approximately 1.5 million women are physically assaulted and/or raped by an intimate male partner in the United States annually, according to data obtained from the National Violence Against Women Survey (Centers for Disease Control and Prevention, 2003; Coker et al., 2002; Tjaden & Thoennes, 2000). Although no published investigations have reported on rates of IPV among Operation Enduring Freedom/Operation Iraqi Freedom (OEF/OIF) military personnel, previous investigations of other cohorts provide data suggesting that IPV is a significant concern among military families. Prevalence rates of physical IPV perpetration among Active Component servicemen and veterans have varied widely in these investigations. Yearly rates of physical IPV range from 13.3% (Heyman & Neidig, 1999) to 47% (Bohannon, Dosser, & Lindley, 1995) in studies of Active

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Component servicemen, and past year prevalence rates range from 13.5% (Jordan et al., 1992) to 58% (Hiley-Young, Blake, Abueg, Rozynko, & Gusman, 1995) in studies of military veterans. When only looking at nationally representative military sample studies not selected on the basis of psychopathology (e.g., inpatients with PTSD), IPV perpetration rates range from being comparable to those obtained from representative studies of the general population to three times higher than general population rates (see Marshall, Panuzio, & Taft, 2005).

Although relatively little systematic research has been conducted on the effects of IPV perpetration in military populations, available evidence suggests that IPV in this population has far-reaching consequences that are similar to those suffered among civilian samples. For example, IPV victimization has been associated with physical health problems ranging from injuries or conditions directly caused by physical assault to musculoskeletal and cardiovascular problems (Cantos, Neidig, & O'Leary, 1994; Gerlock, 1999). Psychological and emotional distress has also been associated with IPV among partners of combat veterans with PTSD (e.g., Street, King, King, & Riggs, 2003). Research also shows higher levels of child abuse in military families in which IPV occurs (Rumm, Cummings, Krauss, Bell, & Rivara, 2000). A large non-military research base indicates that the children who witness IPV also suffer from a variety of emotional and social problems (Kitzmann, Gaylord, Holt, & Kenny, 2003; Margolin, 1998) and have a higher propensity to engage in violent behavior in their own adult relationships (Dutton, Van Ginkel, & Starzomski, 1995; Ehrensaft et al., 2003). IPV also results in substantial costs related to health care, criminal justice interventions, education, child and social services, housing, and lost worker productivity (Ellsberg, Jansen, Heise, Watts, & Garcia-Moreno, 2008; Max, Rice, Finkelstein, Bardwell, & Leadbetter, 2004; Rivara et al., 2007).

In addition to direct impacts on relationship partners and family members, IPV also results in significant negative consequences for the military service member. IPV alienates service members from family members and negatively impacts social support networks. Poor family functioning in military populations has been strongly associated with mental and physical health problems, increased use of medical and psychiatric services, and lost workdays (Gal, 1986; Kelley et al., 2002; Segal, Rohall, Jones, & Manos, 1999; Snyder, 1978; Vinokur, Pierce, & Buck, 1999). Further, among active military, family problems are more powerful predictors of military morale, motivation, readiness, and retention than resource variables, unit-related factors, and work conditions (Pierce, 1998; Schumm, Bell, & Resnick, 2001; Segal et al., 1999). Military servicemen experiencing intimate relationship problems are also more likely to exhibit concentration problems and deficits in cognitive acuity that may compromise mission safety and job performance (Raschmann, Patterson, & Schofield, 1990).

Evidence suggests that it is not deployment or exposure to warzone stressors alone that places military populations at risk for IPV. Rather, the primary determinant of whether one is at heightened risk for IPV following deployment appears to be the development of trauma-related psychopathology (Jordan et al., 1992; Orcutt, King & King, 2003; Riggs, Byrne, Weathers, & Litz, 1998). In other words, military service members do not appear to be generally more violent than their civilian counterparts

in the absence of significant stress and/or posttraumatic stress disorder (PTSD) (Bradley, 2007). In fact, one investigation of Vietnam veterans reported that when statistically accounting for the effects of PTSD symptoms and other factors in a structural equation modeling analysis, higher combat exposure was associated with less IPV perpetration (Orcutt et al., 2003). Thus, it is particularly important to understand the link between PTSD and IPV in order to track the etiology of aggressive behavior in relationships, and, ultimately, to develop efficacious interventions to prevent and treat IPV in this population. Thus, the focus of this chapter is on the link between PTSD and IPV in military populations. We begin with a review of research findings documenting the relationship between PTSD symptomatology and IPV perpetration. This will be followed by material focusing on information processing models and mechanisms that may explain the link between PTSD and IPV, as well as moderators of this association. We will then discuss strategies to prevent and treat IPV in Active Component service members and veterans with PTSD, illustrated by two programs currently in development in our own research lab. We conclude with a summary of the research literature on the topic and recommendations for future work.

Our primary focus is on male-perpetrated IPV due to the dearth of research in the area of female-perpetrated IPV among the population of interest, though preliminary evidence suggests that PTSD symptoms may be associated with at least some forms of IPV in women veterans (Gold, Keehn, King, King, & Samper, 2007). For the purposes of this review, IPV is defined as aggression committed by a spouse, ex-spouse, or current or former intimate partner. Where appropriate, we will distinguish between physical and psychological IPV. Although definitions vary across studies, physical IPV refers to acts of aggression directed towards the target's bodily integrity. Psychological aggression can be defined as "coercive or aversive acts intended to produce emotional harm or threat of harm" (Murphy & Cascardi, 1999, p. 202). Other forms of IPV, including sexual coercion and stalking, are not included in this review due to the lack of research on these forms of aggression perpetration in military samples. Given inherent differences between Active Component military service members and veterans, this review distinguishes between these two groups when possible. The term "Active Component military service member" refers to those who are on active duty in the United States military or in the National Guard or Reserves, and the term "veterans" refers to men who have served and been separated from any branch of the armed forces.

PTSD and Intimate Partner Violence

PTSD is classified as an anxiety disorder that results from exposure to one or more traumatic events that pose actual or threatened death or injury and the experience produces intense fear, helplessness, or horror (DSM-IV-TR; American Psychiatric Association, 2000). The disorder involves persistent reexperiencing of the traumatic event(s), avoidance of trauma-related stimuli and emotional numbing symptoms, and persistent symptoms of increased arousal. PTSD is often

debilitating, leading to significant social and occupational impairment. PTSD also tends to be highly comorbid with a number of other psychiatric problems (Kessler, Sonnega, Bromet, Hughes, & Nelson, 1995; Kulka et al., 1990), and has been associated with poorer physical health and disability in both veteran and civilian samples (Boscarino, 2006; Schnurr & Green, 2004).

Hoge and colleagues (2004) documented substantial trauma exposure and PTSD symptomatology among returning veterans deployed to Iraq and Afghanistan in support of OEF/OIF. Participants reported significantly higher levels of PTSD following a deployment to Iraq than those who reported on their PTSD prior to an Iraq deployment. Specifically, the rate of likely PTSD among Army personnel returning from Iraq was 12.9%, and the rate of likely PTSD among a Marine Corps subsample returning from Iraq was 12.2%. These rates were substantially higher than the 5% rate of likely PTSD among another subgroup of Army personnel, reported prior to their Iraq deployment.

Although the examination of the relationship between PTSD and IPV is scant in Active Component military samples, male veterans diagnosed with PTSD have consistently been shown to be more likely to perpetrate physical and psychological IPV than veterans without PTSD (Glenn et al., 2002; Jordan et al., 1992). For example, in the nationally representative National Vietnam Veterans Readjustment Study (Kulka et al., 1990), approximately one-third of male veterans with PTSD were identified as partner violent during the previous year. This rate was two-to-three times higher than men without PTSD (Jordan et al., 1992).

In addition to the demonstration of group differences between those with and without diagnosed PTSD on IPV, positive associations have repeatedly been found between PTSD symptom severity and physical and psychological IPV severity (Byrne & Riggs, 1996; Glenn et al., 2002; Taft, Street, Marshall, Dowdall, & Riggs, 2007). A recent meta-analysis of empirical examinations of the relationship between PTSD symptomatology and intimate partner relationship measures indicated overall medium-sized true score associations (r) of 0.36 between PTSD and physical IPV perpetration and 0.38 between PTSD and psychological IPV perpetration (Taft et al., in press). PTSD symptomatology has also been shown to account for the influence of trauma variables on IPV perpetration, and strongly predicts IPV even while controlling for a range of other factors, such as early life stressors, personality disorder features, and war-zone exposure variables (e.g., Orcutt et al., 2003). Among the PTSD symptom clusters, symptoms reflecting hyperarousal are a particularly strong predictor of physical and psychological IPV (Savarese, Suvak, King, & King, 2001) and general aggression (Taft et al., 2007).

The Role of Social Information Processing in IPV

Social information processing models have been used by researchers to assist in explaining the etiology of IPV. McFall (1982) developed an influential social information processing model that held that one must trace the progress of information

from stimuli to responses, with a framework of sequential stages through which social stimuli are transformed into behaviors. The first stage is the decoding stage, which involves the reception, perception, and interpretation of incoming stimuli. Difficulties at this stage may be caused by inattention or distraction, as well as misinterpretation of social information. The second stage, decision-making, involves a series of skills involved in generating possible responses, matching the possible responses to the task demands, choosing the best response, determining if the individual is able to carry out that response, and then weighing the costs and benefits of putting that response into action. The final major stage, the enactment stage, involves translating the selected response into action, and monitoring the impact of the action. At each stage, other "transitory factors" such as substance use and anger can also negatively impact information processing.

According to Holtzworth-Munroe's (1992) application of McFall's (1982) model to IPV, social skills and information processing deficits are likely to interfere with the ability of partner-violent men to respond to social stimuli in an appropriate and effective manner. In her research, Holtzworth-Munroe has demonstrated social problem solving deficits among partner violent men relative to nonviolent controls (Anglin & Holtzworth-Munroe, 1997; Holtzworth-Munroe & Anglin, 1991). Eckhardt and his colleagues have similarly demonstrated that partner-violent men are more likely than nonviolent men to display a higher level of irrational beliefs and cognitive biases when angry (Eckhardt, Barbour, & Davison, 1998; Eckhardt & Jamison, 2002; Eckhardt & Kassinove, 1998).

PTSD has been linked with potentially problematic information processing variables, such as a heightened perception of threat in ambiguous situations and a negative interpretative bias (Constans, 2005). Previous researchers have highlighted information processing mechanisms whereby PTSD may lead to aggressive behavior. Specifically, Chemtob and his colleagues (Chemtob, Novaco, Hamada, & Gross, 1997a; Chemtob, Novaco, Hamada, Gross, Smith, 1997b; see also Novaco & Chemtob, 1998), in their conceptualization of problems with aggression among combat veterans with PTSD, emphasize the role of the context-inappropriate activation of cognitive processes related to a "survival mode" of functioning. They posit that those with PTSD, by virtue of their prior experience of trauma and life threat, are more likely to perceive threats in their environment, even in the absence of realistic threat. In response to these perceived threats, the individual exhibits heightened arousal and several cognitive biases associated with heightened anger and aggression, including a hostile appraisal of events, an inclination toward threat confirmation, increased vigilance in recognizing a threat, and a lower threshold for responding to the threat. These processes are preemptive of other adaptive cognitive processing once the individual enters into survival mode, due to the primacy of dealing with a perceived life threat. These processes negatively impact on the ability to regulate arousal and engage in self-monitoring behaviors or other inhibitory processes.

Consistent with Chemtob's model, one would expect that the PTSD hyperarousal symptom cluster, characterized by heightened physiological reactivity and difficulties with anger, drives the association between PTSD and IPV due to its impact on social information processing. In our own research, we have obtained a

number of findings in samples of veterans highlighting the role of hyperarousal symptoms and information processing mechanisms that may help explain the etiology of IPV in military populations. For example, we obtained findings among a sample of combat veterans that support the notion that anger serves as a mechanism for the relationship between PTSD and IPV (Taft et al., 2007). Compared with PTSD-negative participants, PTSD-positive participants reported higher state anger at baseline and upon laboratory exposure to trauma cues, and greater increases in anger upon trauma cue exposure. Further, trait anger partially mediated the effects of PTSD symptoms on both physical and psychological IPV. In another recent study of a non-military community-based sample of 161 men, we obtained evidence that social information processing problems represent a pathway whereby early trauma and PTSD symptoms lead to IPV in adulthood (Taft et al., 2008). Specifically, using structural equation modeling analyses, it was found that the effects of inter-parental violence exposure and childhood rejection on physical and psychological IPV perpetration were primarily indirect through PTSD symptoms and social information processing deficits. In addition to these investigations, a current laboratory-based study to investigate components of social information processing and their links with PTSD and IPV in OEF/OIF veterans is ongoing.

The Role of Core Themes in IPV

Considering that trauma and PTSD have a profound effect on the way that an individual views the world, it stands to reason that several core themes affected by trauma may have an impact on how one processes social information, and thus may underlie relationship functioning difficulties and IPV. Work by Resick and colleagues (Monson et al., 2006; Resick & Schnicke, 1992) in the context of the etiology and treatment of PTSD has identified several core themes that represent important treatment targets for PTSD, and that may be particularly important to address in IPV prevention interventions as well. In this chapter we will cover the themes of trust, self- and other-esteem, and power and control.

Trust in others is often disrupted following trauma. A trauma may have been caused by someone who was supposed to be trustworthy. In other cases a trauma may occur because other people made poor decisions or mistakes. One example is a combat trauma where a fellow unit member made an unwise or risky decision. Active duty service member and veterans with PTSD symptoms may feel like they cannot trust anyone, or that all people are out to hurt or betray them. Sometimes feelings of mistrust and betrayal can carry over into relationships, and controlling behavior and IPV may be the result.

Active duty service member and veterans who have experienced trauma and PTSD often harshly judge themselves whenever they make a mistake, or they unfairly blame themselves for what happened to them. Low self-esteem can lead to depression, insecurity in relationships, and IPV. Trauma and PTSD can also influence views of other people, or “other-esteem.” Traumatic events involving other people

may lead one to believe that others are not good or not to be respected. They may have generalized this belief to everyone (even those who do not deserve it), which may lead to problems with anger, withdrawal from social relationships, and IPV.

Clinicians and researchers have long asserted that men's violence toward women is influenced by beliefs related to power in relationships (e.g., Pence & Paymar, 1993). As argued by Rosenbaum and Leisring (2003), childhood exposure to violence and trauma among abusive men is likely to contribute to a sense of powerlessness. For example, a child exposed to interparental violence may have experienced a profound sense of helplessness at not being able to assist or protect the abused parent. Other forms of trauma, such as military-related trauma, are likely to similarly lead to a sense of powerlessness. Seminal conceptualizations of trauma reactions and PTSD have emphasized the importance of powerlessness (e.g., Finkelhor & Browne, 1985), and measures assessing this construct are strongly associated with distress and maladaptive social relationships (Kallstrom-Fuqua, Weston, & Marshall, 2004). Importantly, feelings of powerlessness are likely to contribute to conflicts regarding power in adult relationships, and such conflicts predict IPV perpetration (Schwartz, Waldo, & Daniel, 2005).

Murphy and Eckhardt (2005) describe several other core themes and assumptions that are common among traumatized abuse perpetrators. For example, exposure to prior violence may instill the belief that aggression is an appropriate means to resolving interpersonal conflicts. As these authors describe, a "belief in a just world" (i.e., the notion that people get what they deserve) is often used as a rationalization for abuse, and may stem from the assimilation of their own traumatic exposure as justifiable. Linked to this rationalization is the belief that aggression is morally correct and effective. Several other dysfunctional core beliefs may result from trauma and lead to a higher propensity for abuse, such as the beliefs that "I am the victim here." These are all rationalizations for abuse that are typically confronted in IPV interventions, though such interventions do not typically target the roots of these maladaptive cognitions, and thus are likely to be relatively ineffective.

Moderators of the Association Between PTSD and IPV

In addition to possible mediator variables explaining the association between PTSD and IPV, other factors that tend to co-occur with PTSD may impact upon the PTSD-IPV association. In the following subsections, we discuss the possible moderating role of depression, alcohol use problems, and traumatic brain injury (TBI).

Depression. PTSD is highly comorbid with depressive symptomatology across a range of trauma groups (Orsillo et al., 1996; Stein & Kennedy, 2001). Approximately one-third to two-thirds of veterans with PTSD have lifetime rates of major depression (see Erickson, Wolfe, King, King, & Sharkansky, 2001). Depressive symptomatology has been associated with both general aggression and IPV in military samples (Pan, Neidig, & O'Leary, 1994; Sherman, Sautter, Jackson, Lyons, & Han, 2006; Taft, Vogt, Marshall, Panuzio, & Niles, 2007). Aggression

theory, particularly the work of Berkowitz (1994), emphasizes the role of dysphoric affect. Berkowitz' cognitive-neoassociationistic model holds that dysphoric affect is connected with anger-related feelings, thoughts, memories, and aggressive inclinations in associative networks. Therefore, those who experience more frequent and severe depressive symptoms also experience heightened feelings, thoughts, and memories related to anger, and have a higher propensity for aggression.

Some work among samples of male military veterans suggests that comorbid depression may moderate the impact of PTSD on IPV. A study by Taft et al. (2005) compared partner violent Vietnam veterans with PTSD to nonviolent veterans with PTSD. As compared with the nonviolent veterans, partner violent veterans had significantly higher rates of major depression, suggesting that comorbid depression may amplify the effects of PTSD on IPV. Similarly, O'Donnell, Cook, Thompson, Riley, and Neria (2006), in a community sample of World War II former prisoners of war, found that depression moderated the relationship between PTSD and both verbal and physical IPV, such that the combination of PTSD and depression was associated with higher IPV risk than either of the disorders alone.

Alcohol use problems. Results of a population-based, longitudinal study of mental health problems of OIF service members conducted by Milliken, Auchterlonie, and Hoge (2007) showed that 11.8% of Active Component service members and 15% of Reserve Component personnel reported alcohol misuse at an assessment three to 6 months after returning from deployment. Among men, alcohol abuse or dependence is the most highly comorbid psychiatric problem with PTSD in representative community (Kessler et al., 1995) and veteran samples (Kulka et al., 1990). In the original NVVRS (Kulka et al., 1990), 75% of male veterans with PTSD met lifetime criteria for alcohol abuse, and 22% met criteria for current alcohol abuse. Moreover, research among veterans indicates that PTSD symptomatology is strongly linked to binge drinking in particular, suggesting that dangerous drinking patterns may be evident even in the absence of habitual drinking (Adams, Boscarino, & Galea, 2006; Hyer, Leach, Boudewyns, & Davis, 1991). Evidence supports the notion that the development of PTSD symptoms typically precede alcohol problems rather than the converse (Back, Jackson, Sonne, & Brady, 2005; Jacobsen, Southwick, & Kosten, 2001; Stewart & Conrod, 2003). The self-medication hypothesis is often used to explain this relationship, whereby alcohol is used to reduce the distress and anxiety that accompany symptoms of PTSD, and this behavior is maintained by the negative reinforcement from symptom relief (Brown & Wolfe, 1994).

Problematic alcohol use has been consistently implicated as a risk factor for IPV across a range of civilian (e.g., Murphy, O'Farrell, Fals-Stewart, & Feehan, 2001) and veteran samples (e.g., Savarese et al., 2001). Proximal effects models of aggression (Giancola, 2000) hold that alcohol use leads to aggression in part through its impact on executive functioning, consistent with the Chemtob (Chemtob et al., 1997a, 1997b; Novaco & Chemtob, 1998) model. Thus, it stands to reason that among those at relatively higher risk for aggression and cognitive deficits, such as Active Component service members and veterans with significant PTSD symptoms, alcohol use may have a disinhibiting effect with respect to IPV. Some evidence suggests that alcohol use disinhibits IPV among those possessing high levels of anger (Eckhardt, 2007).

With respect to samples of veterans, Savarese et al. (2001) examined the relationship between PTSD hyperarousal symptoms, alcohol use, and IPV in a subsample of those participating in the NVVRS. These researchers found that drinking quantity was a stronger predictor of both physical and psychological IPV than drinking frequency. In addition, some interactive effects were obtained such that the effects of hyperarousal on physical IPV were exacerbated by increased alcohol consumption. Interestingly, other tests of interactions suggested that high frequency of drinking in combination with low quantities of consumption may actually mitigate the impact of hyperarousal on physical IPV.

Traumatic brain injury. Traumatic brain injury (TBI) is an important consideration in IPV among OEF/OIF veterans. Approximately 15% of U.S. Army infantry OIF soldiers report an injury leading to loss of consciousness or altered mental state (Hoge et al, 2008) and 19% of OEF/OIF service member report possible TBI during their deployment (Tanielian & Jaycox, 2008). Approximately 44% of OIF service members who experience loss of consciousness from a head injury event suffer from PTSD (Hoge et al., 2008). Rates of TBI among IPV perpetrators range from 40 to 61%, and are significantly higher than those found in the general population (Rosenbaum & Hoge, 1989; Rosenbaum et al., 1994). TBI has consistently been linked to the perpetration of IPV (Cohen, Rosenbaum, Kane, Warnken, & Benjamin, 1999; Cohen et al., 2003; Knight & Taft, 2004; Marsh & Martinovich, 2006). Given models for aggression that highlight the role of executive function capabilities such as response inhibition, self-regulation, self-awareness, and intentionality (Chemtob et al., 1997b; Holtzworth-Munroe, 1992), it is not surprising that much attention has been paid to the prefrontal cortex as a critical substrate for aggression (Siever, 2008). Damage to the prefrontal cortex can result in executive function deficits with a range of functional manifestations such as personality changes, behavioral disinhibition, increased impulsivity, and lability (Chambers et al., 2007), all of which can impact the likelihood of IPV. Head injured men report significantly more loss of temper and control, increased difficulty communicating, increased arguing and yelling, and more relationship problems compared with controls (Warnken, Rosenbaum, Fletcher, Hoge & Adelman, 1994).

No previous published study has examined how TBI or executive functioning deficits may moderate the impacts of PTSD on IPV perpetration. It has been argued, though that among veterans who suffer from PTSD symptomatology, anger difficulties, and/or maladaptive cognitive processes, the experience of a TBI and executive functioning impairments can lead to severe difficulties with inhibiting behavior, regulating emotional reactivity, and controlling aggressive inclinations (Knight & Taft, 2004).

IPV Interventions

Intervention programs for men who engage in IPV are a relatively new phenomenon. The proliferation of these programs began in the late 1970s due to a rise in public awareness regarding domestic abuse and mandatory arrest policies for partner violence

incidents (Scott & Wolfe, 2000). Interventions for IPV are typically conducted in the group format, with intervention durations lasting from 12 to 52 weeks. Interventions differ with respect to theoretical orientation, though most can be classified as either cognitive-behavioral or feminist-psychoeducational (Babcock, Green, & Robie, 2004). Cognitive-behavioral interventions view IPV as a learned behavior and stress its functional aspects. These interventions generally involve psychoeducation, self-monitoring, cognitive restructuring, crisis management techniques (e.g., time outs, relaxation training), and skills training (e.g., communication, assertiveness) (Murphy & Eckhardt, 2005). Feminist psychoeducational interventions view IPV as rooted in patriarchal ideology and the social sanctioning of men's dominance over women. Interventions based on this model involve attempts at resocialization with respect to the individual's views on gender and power (Pence & Paymar, 1993).

In a meta-analysis of the efficacy of IPV interventions for violent men, Babcock et al. (2004) found that these programs yielded only modest effects. Specifically, it was shown that those receiving active IPV interventions averaged a reduction in recidivism of only 5% relative to untreated groups. Other research has shown no significant differences in efficacy among theoretically and technically distinct interventions for IPV (Morrel, Elliott, Murphy, & Taft, 2003; O'Leary, Heyman, & Neidig, 1999; Saunders, 1996), suggesting that we do not yet know the potential mechanisms responsible for positive change in these interventions.

Unfortunately, there is currently no empirically validated IPV intervention for military service members or veterans. Only one experimentally controlled evaluation of IPV intervention effectiveness has been conducted in a military setting. Among a large sample of married U.S. Navy couples in which the husband perpetrated IPV, Dunford (2000) found that none of the randomly assigned year-long intervention modalities (i.e., a cognitive-behavioral men's group, a cognitive-behavioral couples group, and a rigorously monitored group) were effective in reducing IPV at 6 and 12 months post-intervention compared with a no-intervention control group. It is important to note that none of the interventions used in this study incorporated components that dealt with prior trauma or PTSD. Dunford's (2000) findings suggest that as in the broader IPV intervention field, program modification efforts are needed to meet the needs of families of veterans that experience IPV.

One major barrier to IPV treatment in general may be the extensive trauma experienced by this population (Dutton, 1998; Murphy & Eckhardt, 2005). Trauma and trauma-related symptomatology have been found to be robust predictors of IPV treatment non-compliance (Chang & Saunders, 2002; Gerlock, 2001). Results from a controlled trial for IPV perpetrators conducted by Saunders (1996) similarly suggests the importance of addressing trauma and PTSD in enhancing compliance among this population. Specifically, this researcher examined an intervention that, during the first several sessions of group, involved drafting autobiographies focusing on traumatic childhood experiences, as well as structured group exercises and unstructured discussions addressing common results of trauma. This intervention was associated with higher treatment compliance than a standard group feminist cognitive-behavioral intervention, as evidenced by significantly lower dropout rates. Considering that combat veterans are at particularly high risk for PTSD,

and PTSD is linked to IPV and can hinder its treatment, the efficacy of IPV interventions may be improved if trauma-related sequelae are addressed.

The limited efficacy for standard interventions for perpetrators of IPV also highlights a need for alternative approaches used to target this problem. Prevention programs focused on improving intimate relationships and reducing the risk of onset of IPV are particularly indicated, given that relationship conflict typically serves as a precursor to relationship violence (Cascardi & Vivian, 1995) and more subtle forms of relationship aggression early in relationships are predictive of later violence (Murphy & O'Leary, 1989; O'Leary, Malone, & Tyree, 1994). Although no prevention programs for IPV among military populations have been empirically evaluated, some preliminary evidence from civilian samples suggests the potential benefit of preventive interventions (Markman, Renick, Floyd, Stanley, & Clements, 1993), particularly those that make use of cognitive-behavioral skills-based techniques (see O'Leary, Woodin, & Fritz, 2006).

We are currently developing and testing a prevention intervention through a funded collaborative agreement with the Centers for Disease Control and Prevention aimed at decreasing the incidence of IPV perpetration in OEF/OIF veterans. Strength at Home-Couples is a 10-week program conducted in a multi-couple format. The couples include a male OEF/OIF combat veteran, and the couples have no history of physical IPV. The program targets the social information mechanisms described in this chapter, with a focus on the unique stressors of deployment separation and combat exposure.

The initial phase of Strength at Home-Couples (Sessions 1–3) focuses on psychoeducation about trauma and relationship issues, and the second phase (Sessions 4 and 5) focuses on conflict management skills to assist couples in identifying and effectively managing difficult issues when they arise. During the third phase (Sessions 6–9), basic communication skills are covered, and Session 10, the final session, focuses on gains achieved over the course of the intervention and plans for continued change. Across all of the sessions, group members complete in-session practice exercises and are provided "practice assignments" to consolidate material covered in group. Assignments also involve intimacy-enhancing exercises (e.g., self-monitoring of positive relationship behaviors) across sessions.

A treatment program is also under simultaneous evaluation by our research team, funded by the Department of Veterans Affairs and Department of Defense. Strength at Home-Men's Group consists of twelve 2-h weekly sessions, co-led by a male and female co-therapist team. This program serves groups of 6–10 OEF/OIF combat veterans who have perpetrated physical IPV within the past 12 months. It incorporates many of the features noted above including understanding the impact of trauma on relationships, anger and conflict management, and enhancing social problem solving and communication skills. This intervention also makes use of in-session and out-of-session practice of material covered in group. Relative to the couples primary IPV prevention group, more attention is paid to anger dysregulation, with additional psychoeducation regarding the anger response, self-monitoring of anger during conflict situations, identifying and correcting automatic thoughts associated with anger, developing more realistic appraisals of threat, and developing a better understanding of one's learned style of communicating anger and other

emotions. Additional material also emphasizes coping with stress and learning strategies to reduce physiological arousal and reactivity. The program emphasizes taking personal responsibility for IPV, enhancing motivation for behavior change, and creating and fostering a positive therapeutic alliance.

We have secertly completed the pilot phase for both of these programs. Repeatedly, participants have commented on the importance of discussing their concerns with other members of the military and other military couples, particularly others who have experienced an OEF/OIF deployment. Participating in the couples group has served to increase couples' willingness to acknowledge and address their difficulties. In the pilot groups, group members have played a pivotal role in both challenging each other and supporting each other's efforts for change. Understanding trauma and the role that it can play in relationship problems and IPV has provided a framework for veterans to understand their difficulties. Facing these struggles alongside peers appears to be a powerful forum for reducing stigma and increasing hopefulness about the possibility of change.

Conclusions

IPV is a serious public health problem, and evidence suggests that military personnel who have trauma-related psychopathology are at heightened risk for the perpetration of such aggression. Considering increasing deployments and redeployments experienced by our current military, and the increasing likelihood that those deployed will experience significant trauma exposure, it is critical that we have a better understanding of how trauma exposure ultimately may lead to IPV. Research in this area is still in its relative infancy. While this review highlights what we know about some of the social information processing mechanisms and core themes that may account for how PTSD may lead to IPV, and some factors that may impact upon the PTSD-IPV relationship (depression, alcohol use problems, TBI), there is much more that we do not yet know about this association. Most notably, researchers have yet to begin to examine the complex interplay across all of these mediator and moderator variables and IPV outcomes. The complexity of PTSD and the phenomena of IPV necessitates that we make use of laboratory-based techniques, multi-modal assessment strategies, and longitudinal approaches to better capture this relationship.

There are numerous other factors that were not covered in this review and have not yet been extensively studied with respect to IPV among traumatized military populations. For example, the role of personality and biological factors represent important factors in etiological models for IPV and general aggression (Holtzworth-Munroe, Meehan, Herron, Rehman, & Stuart, 2000; Siever, 2008), and have been well studied in general PTSD research (Miller, Kaloupek, Dillon & Keane, 2004; Yehuda, 2006), though they have yet to be incorporated into models explaining the link between PTSD and IPV. We also have a very limited understanding of IPV

perpetration among servicewomen and female veterans, and of the complex dynamics involved in mutually versus unidirectionally aggressive couples (Teten, Sherman, & Han, 2009).

The importance of basic research aimed at understanding the PTSD-IPV link is highlighted by the lack of efficacious interventions that have been developed for military populations. Although a lack of demonstrated efficacy for such interventions mirrors the broader IPV field, and may be partially explained by a lack of controlled trials conducted in this area (and a number of ethical and other difficulties inherent in conducting such trials), research elucidating the processes whereby PTSD leads to IPV are essential for intervention efforts. Future work may also address basic intervention questions. For example, is it more effective to focus on treating the PTSD itself rather than the mechanisms whereby PTSD leads to IPV? Is it possible to prevent IPV perpetration among this at-risk population via use of primary prevention programs focused on relationship enhancement? And, how should IPV interventions be tailored to take into account the influence of moderator variables such as those described in this review? Efforts to answer such questions will not only lead to reductions in IPV and strengthened military families, but will ultimately inform basic and treatment research aimed at reducing IPV more generally in our culture.

References

Adams, R. E., Boscarino, J. A., & Galea, S. (2006). Alcohol use, mental health status and psychological well-being 2 years after the World Trade Center attacks in New York City. *The American Journal of Drug and Alcohol Abuse, 32*(2), 203–224.

American Psychiatric Association. (2000). *Diagnostic and statistical manual of mental disorders (4th ed. Revised)*. Washington, DC: American Psychiatric Association.

Anglin, K., & Holtzworth-Munroe, A. (1997). Comparing the responses of maritally violent and nonviolent spouses to problematic marital and nonmarital situations: Are the skill deficits of physically aggressive husbands and wives global? *Journal of Family Psychology, 11*, 301–313.

Babcock, J. C., Green, C. E., & Robie, C. (2004). Does batterers' treatment work? A meta-analytic review of domestic violence treatment. *Clinical Psychology Review, 23*, 1023–1053.

Back, S. E., Jackson, J. L., Sonne, S., & Brady, K. T. (2005). Alcohol dependence and PTSD: Differences in clinical presentation and response to cognitive-behavioral therapy by order of onset. *Journal of Substance Abuse Treatment, 29*, 29–37.

Berkowitz, L. (1994). Is something missing? Some observations prompted by the cognitive-neoassociationist view of anger and emotional aggression. In L. R. Huesmann (Ed.), *Aggressive behavior: Current perspectives* (pp. 35–57). New York, NY: Plenum.

Bohannon, J. R., Dosser, D. A., & Lindley, S. E. (1995). Using couple data to determine domestic violence rates: an attempt to replicate previous work. *Violence and Victims, 10*(2), 133–141.

Boscarino, J. A. (2006). External-cause mortality after psychologic trauma: The effects of stress exposure and predisposition. *Comprehensive Psychiatry, 47*, 503–514.

Bradley, C. (2007). Veteran status and marital aggression: Does military service make a difference? *Journal of Family Violence, 22*(4), 197–209.

Brown, P. J., & Wolfe, J. (1994). Substance abuse and post-traumatic stress disorder comorbidity. *Drug and Alcohol Dependence, 35*, 51–59.

Byrne, C. A., & Riggs, D. S. (1996). The cycle of trauma: Relationship aggression in male Vietnam veterans with symptoms of posttraumatic stress disorder. *Violence and Victims, 11*, 213–225.

Cantos, A., Neidig, P. H., & O'Leary, K. D. (1994). Injuries of women and men in a treatment program for domestic violence. *Journal of Family Violence, 9*(2), 113–124.

Cascardi, M., & Vivian, D. (1995). Context for specific episodes of marital violence: Gender and severity of violence differences. *Journal of Family Violence, 10*, 265–293.

Centers for Disease Control and Prevention. (2003). *Costs of intimate partner violence against women in the United States*. Atlanta, GA: Centers for Disease Control and Prevention.

Chambers, C. D., Bellgrove, M. A., Gould, I. C., English, T., Garavan, H., et al. (2007). Dissociable mechanisms of cognitive control in prefrontal and premotor cortex. *Journal of Neurophysiology, 98*, 3638–3647.

Chang, H., & Saunders, D. G. (2002). Predictors of attrition in two types of group programs for men who batter. *Journal of Family Violence, 17*, 273–292.

Chemtob, C. M., Novaco, R. W., Hamada, R. S., & Gross, D. M. (1997a). Cognitive-behavioral treatment for severe anger in posttraumatic stress disorder. *Journal of Consulting and Clinical Psychology, 65*, 184–189.

Chemtob, C. M., Novaco, R. W., Hamada, R. S., Gross, D. M., & Smith, G. (1997b). Anger regulation deficits in combat-related posttraumatic stress disorder. *Journal of Traumatic Stress, 10*, 17–35.

Cohen, R. A., Rosenbaum, A., Kane, R. L., Warnken, W. J., & Benjamin, S. (1999). Neuropsychological correlates of domestic violence. *Violence and Victims, 14*, 397–411.

Cohen, R. A., Brumm, V., Zawacki, T. M., Paul, R., Sweet, L., & Rosenbaum, A. (2003). Impulsivity and verbal deficits associated with domestic violence. *Journal of the International Neuropsychological Society, 9*, 760–770.

Coker, A. L., Davis, K. E., Arias, I., Desai, S., Sanderson, M., et al. (2002). Physical and mental health effects of intimate partner violence for men and women. *American Journal of Preventive Medicine, 23*(4), 260–268.

Constans, J. (2005). Information processing biases in PTSD. In J. J. Vasterling & C. R. Brewin (Eds.), *Neuropsychology of PTSD: Biological, cognitive, and clinical perspectives* (pp. 105–130). New York, NY: Guilford.

Dunford, F. W. (2000). The San Diego Navy Experiment: An assessment of interventions for men who assault their wives. *Journal of Consulting and Clinical Psychology, 68*, 468–476.

Dutton, D. G. (1998). *The abusive personality*. New York: Guilford.

Dutton, D. G., Van Ginkel, C., & Starzomski, A. (1995). The role of shame and guilt in the intergenerational transmission of abusiveness. *Violence and Victims, 10*, 121–131.

Eckhardt, C. I. (2007). Effects of alcohol intoxication on anger experience and expression among partner assaultive men. *Journal of Consulting and Clinical Psychology, 75*, 61–71.

Eckhardt, C. I., Barbour, K. A., & Davison, G. C. (1998). Articulated thoughts of maritally violent and nonviolent men during anger arousal. *Journal of Consulting and Clinical Psychology, 66*, 259–269.

Eckhardt, C. I., & Kassinove, H. (1998). Articulated cognitive distortions and cognitive deficiencies in maritally violent men. *Journal of Cognitive Psychotherapy, 12*, 231–250.

Eckhardt, C., & Jamison, T. R. (2002). Articulated thoughts of male dating violence perpetrators during anger arousal. *Cognitive Therapy and Research, 26*, 289–308.

Ehrensaft, M. K., Cohen, P., Brown, J., Smailes, E., Chen, H., & Johnson, J. G. (2003). Intergenerational transmission of partner violence: A 20-year prospective study. *Journal of Consulting and Clinical Psychology, 71*(4), 741–753.

Ellsberg, M., Jansen, H. A. F. M., Heise, L., Watts, C. H., & Garcia-Moreno, C. (2008). Intimate partner violence and women's physical and mental health in the WHO multi-country study on women's health and domestic violence: An observational study. *Lancet, 371*, 1165–1172.

Erickson, D., Wolfe, J., King, D., King, L., & Sharkansky, E. (2001). Posttraumatic stress disorder and depression symptomatology in a sample of Gulf War veterans: a prospective analysis. *Journal of Consulting and Clinical Psychology, 69*, 41–49.

Finkelhor, D., & Browne, A. (1985). The traumatic impact of child sexual abuse: A conceptualization. *The American Journal of Orthopsychiatry, 55*, 530–541.

Gal, R. (1986). Unit morale: From a theoretical puzzle to an empirical illustration: An Israeli example. *Journal of Applied Social Psychology, 16*, 549–564.

Gerlock, A. (1999). Health impact of domestic violence. Issues in Mental Health Nursing, *20*, 373–385.

Gerlock, A. A. (2001). Relationship mutuality: Why is it important in batterers' rehabilitation? *Journal of Interpersonal Violence, 16*, 768–783.

Giancola, P. R. (2000). Executive functioning: A conceptual framework for alcohol-related aggression. *Experimental and Clinical Psychopharmacology, 8*(4), 576–597.

Glenn, D. M., Beckham, J. C., Feldman, M. E., Kirby, A. C., Hertzberg, M. A., & Moore, S. D. (2002). Violence and hostility among families of Vietnam veterans with combat-related post-traumatic stress disorder. *Violence and Victims, 17*, 473–491.

Gold, J. I., Keehn, M. G., King, D. W., King, L., & Samper, R. (2007). PTSD symptom severity and family adjustment among female Vietnam veterans. *Military Psychology, 19*, 71–81.

Heyman, R. E., & Neidig, P. H. (1999). A comparison of spousal aggression prevalence rates in U.S. Army and civilian representative samples. *Journal of Consulting and Clinical Psychology, 67*, 239–242.

Hiley-Young, B., Blake, D. D., Abueg, F. R., Rozynko, V., & Gusman, F. D. (1995). Warzone violence in Vietnam: An examination of premilitary, military, and postmilitary factors in PTSD in-patients. *Journal of Traumatic Stress, 8*(1), 125–141.

Hoge, C. W., Castro, C. A., Messer, S. C., McGurk, D., Cotting, D. I., & Koffman, R. L. (2004). Combat duty in Iraq and Afghanistan, mental health problems, and barriers to care. *The New England Journal of Medicine, 351*, 13–22.

Hoge, C. W., McGurk, D., Thomas, J., Cox, A. L., Engel, C. C., & Castro, C. A. (2008). Mild traumatic brain injury in US soldiers returning from Iraq. *The New England Journal of Medicine, 358*, 453–463.

Holtzworth-Munroe, A. (1992). Social skills deficits in maritally violent men: Interpreting the data using a social information processing model. *Clinical Psychology Review, 12*, 605–617.

Holtzworth-Munroe, A., & Anglin, A. (1991). The competency of responses given by martially violent versus nonviolent men to problematic marital situations. *Violence and Victims, 6*, 257–269.

Holtzworth-Munroe, A., Meehan, J. C., Herron, K., Rehman, U., & Stuart, G. L. (2000). Testing the Holtzworth-Munroe and Stuart (1994) batterer typology. *Journal of Consulting and Clinical Psychology, 68*, 1000–1019.

Hyer, L., Leach, P., Boudewyns, P. A., & Davis, H. (1991). Hidden PTSD in substance abuse inpatients among Vietnam veterans. *Journal of Substance Abuse Treatment, 8*(4), 213–219.

Jacobsen, L. K., Southwick, S. M., & Kosten, T. R. (2001). Substance use disorders in patients with posttraumatic stress disorder: a review of the literature. *The American Journal of Psychiatry, 158*, 1184–1190.

Jordan, K. B., Marmar, C. R., Fairbank, J. A., Schlenger, W. E., Kulka, R. A., Hough, R. L., et al. (1992). Problems in families of male Vietnam veterans with posttraumatic stress disorder. *Journal of Consulting and Clinical Psychology, 60*, 916–926.

Kallstrom-Fuqua, A. C., Weston, R., & Marshall, L. L. (2004). Childhood and adolescent sexual abuse of community women: mediated effects on psychological distress and social relationships. *Journal of Consulting and Clinical Psychology, 72*(6), 980–992.

Kelley, M. L., Hock, E., Jarvis, M. S., Smith, K. M., Gaffney, M. A., & Bonney, J. F. (2002). Psychological adjustment of Navy mothers experiencing deployment. *Military Psychology, 14*, 199–216.

Kessler, R. C., Sonnega, A., Bromet, E., Hughes, M., & Nelson, C. B. (1995). Posttraumatic stress disorder in the National Comorbidity Survey. *Archives of General Psychiatry, 52*, 1048–1060.

Kitzmann, K. M., Gaylord, N. K., Holt, A. R., & Kenny, E. D. (2003). Child witnesses to domestic violence: A meta-analytic review. *Journal of Consulting and Clinical Psychology, 71*(2), 339–352.

Knight, J. A., & Taft, C. T. (2004). Assessing neuropsychological concomitants of trauma and PTSD. In J. P. Wilson & T. M. Keane (Eds.), *Assessing psychological trauma and PTSD* (2nd ed., pp. 344–388). New York, NY: Guilford.

Kulka, R. A., Schlenger, W. E., Fairbank, J. A., Hough, R. L., Jordan, B. K., Marmar, C. R., et al. (1990). *Trauma and the Vietnam war generation: Report of findings from the National Vietnam Veterans Readjustment Study*. New York, NY: Brunner/Mazel.

Margolin, G. (1998). Effects of domestic violence on children. In P. Trickett & C. Schellenbach (Eds.), *Violence against children in the family and the community* (pp. 57–101). Washington, DC: American Psychological Association.

Markman, H. J., Renick, M. J., Floyd, J., Stanley, S. M., & Clements, M. (1993). Preventing marital distress through communication and conflict management training: A 4- and 5-year follow-up. *Journal of Consulting and Clinical Psychology, 61*, 70–77.

Marsh, N. V., & Martinovich, W. M. (2006). Executive dysfunction and domestic violence. *Brain Injury, 20*, 61–66.

Marshall, A. D., Panuzio, J., & Taft, C. T. (2005). Intimate partner violence among military veterans and active duty servicemen. *Clinical Psychology Review, 25*, 862–876.

Max, W., Rice, D. P., Finkelstein, E., Bardwell, R. A., & Leadbetter, S. (2004). The economic toll of intimate partner violence against women in the United States. *Violence and Victims, 19*, 259–272.

McFall, R. M. (1982). A review and reformulation of the concept of social skills. *Behavioral Assessment, 4*, 1–33.

Miller, M. W., Kaloupek, D. G., Dillon, A. L., & Keane, T. M. (2004). Externalizing and internalizing subtypes of combat-related PTSD: A replication and extension using the PSY-5 scales. *Journal of Abnormal Psychology, 113*(4), 636–645.

Milliken, C. S., Auchterlonie, J. L., & Hoge, C. W. (2007). Longitudinal assessment of mental health problems among active and reserve component soldiers returning from the Iraq war. *Journal of the American Medical Association, 298*(18), 2141–2148.

Monson, C. M., Schnurr, P. P., Resick, P. A., Friedman, M. J., Young-Xu, Y., & Stevens, S. P. (2006). Cognitive processing therapy for veterans with military-related posttraumatic stress disorder. *Journal of Consulting and Clinical Psychology, 74*, 898–907.

Morrel, T. M., Elliott, J. D., Murphy, C. M., & Taft, C. T. (2003). A comparison of cognitive-behavioral and supportive group therapies for male perpetrators of domestic abuse. *Behavior Therapy, 34*, 77–95.

Murphy, C. M., & O'Leary, K. D. (1989). Psychological aggression predicts physical aggression in early marriage. *Journal of Consulting and Clinical Psychology, 57*, 579–582.

Murphy, C. M., & Cascardi, M. (1999). Psychological aggression and abuse in marriage. In R. Hampton (Ed.), *Family violence: Prevention and treatment* (2nd ed., pp. 198–226). Newbury Park, CA: Sage.

Murphy, C. M., O'Farrell, T. J., Fals-Stewart, W., & Feehan, M. (2001). Correlates of intimate partner violence among male alcoholic patients. *Journal of Consulting and Clinical Psychology, 69*(3), 528–540.

Murphy, C. M., & Eckhardt, C. I. (2005). *Treating the abusive partner: An individualized cognitive-behavioral approach*. New York, NY: Guilford.

Novaco, R. W., & Chemtob, C. M. (1998). Anger and trauma: Conceptualization, assessment, and treatment. In V. M. Follette, J. I. Ruzek, & F. R. Abueg (Eds.), *Cognitive behavioral therapies for trauma* (pp. 162–190). New York, NY: Guilford.

O'Donnell, C., Cook, J. M., Thompson, R., Riley, K., & Neria, Y. (2006). Verbal and physical aggression in World War II former prisoners of war: Role of posttraumatic stress disorder and depression. *Journal of Traumatic Stress, 19*(6), 859–866.

O'Leary, K. D., Heyman, R. E., & Neidig, P. H. (1999). Treatment of wife abuse: A comparison of gender-specific and couples approaches. *Behavior Therapy, 30*, 475–505.

O'Leary, K. D., Malone, J., & Tyree, A. (1994). Physical aggression in early marriage: Prerelationship and relationship effects. *Journal of Consulting and Clinical Psychology, 62*, 594–602.

O'Leary, K. D., Woodin, E. M., & Fritz, P. A. T. (2006). Can we prevent hitting? Recommendations for preventing intimate partner violence between young adults. *Journal of Aggression, Maltreatment & Trauma, 13*, 121–178.

Orcutt, H. K., King, L. A., & King, D. W. (2003). Male-Perpetrated violence among Vietnam veteran couples: Relationships with veteran's early life characteristics, trauma history, and PTSD symptomatology. *Journal of Traumatic Stress, 16*, 381–390.

Orsillo, S. M., Weathers, F. W., Litz, B. T., Steinberg, H. R., Huska, J. A., & Keane, T. M. (1996). Current and lifetime psychiatric disorders among veterans with war zone-related posttraumatic stress disorder. *Journal of Nervous and Mental Disease, 184*, 307–313.

Pan, H. S., Neidig, P. H., & O'Leary, K. D. (1994). Predicting mild and severe husband-to-wife physical aggression. *Journal of Consulting and Clinical Psychology, 62*, 975–981.

Pence, E., & Paymar, M. (1993). *Education groups for men who batter: The Duluth model*. New York, NY: Springer.

Pierce, P. F. (1998). Retention of Air Force women serving during Desert Shield and Desert Storm. *Military Psychology, 10*, 195–213.

Raschmann, J. K., Patterson, J. C., & Schofield, G. (1990). A retrospective study of marital discord in pilots: The USAFSAM experience. *Aviation Space and Environmental Medicine, 61*, 1145–1148.

Resick, P. A., & Schnicke, M. K. (1992). Cognitive processing therapy for sexual assault victims. *Journal of Consulting and Clinical Psychology, 60*, 748–756.

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

Rivara, F. P., Anderson, M. L., Fishman, P., Bonomi, A. E., Reid, R. J., Carrell, D., et al. (2007). Healthcare utilization and costs for women with a history of intimate partner violence. *American Journal of Preventive Medicine, 32*, 89–96.

Rosenbaum, A., & Hoge, S. K. (1989). Head injury and marital aggression. *The American Journal of Psychiatry, 146*, 1048–1051.

Rosenbaum, A., Hoge, S. K., Adelman, S. A., Warnken, W. J., Fletcher, K. E., & Kane, R. L. (1994). Head injury in partner-abusive men. *Journal of Consulting and Clinical Psychology, 62*, 1187–1193.

Rosenbaum, A., & Leisring, P. A. (2003). Beyond power and control: Towards an understanding of partner abusive men. *Journal of Comparative Family Studies, 34*, 7–22.

Rumm, P. D., Cummings, P., Krauss, M. R., Bell, M. A., & Rivara, F. P. (2000). Identified spouse abuse as a risk factor for child abuse. *Child Abuse & Neglect, 24*(11), 1375–1381.

Saunders, D. G. (1996). Feminist-cognitive-behavioral and process-psychodynamic treatments for men who batter: Interaction of abuser traits and treatment models. *Violence and Victims, 11*, 393–414.

Savarese, V. W., Suvak, M. K., King, L. A., & King, D. W. (2001). Relationships among alcohol use, hyperarousal, and marital abuse and violence in Vietnam veterans. *Journal of Traumatic Stress, 14*(4), 717–732.

Schnurr, P. P., & Green, B. L. (2004). Understanding relationships among trauma, posttraumatic stress disorder, and health outcomes. In P. P. Schnurr & B. L. Green (Eds.), *Trauma and health: Physical health consequences of exposure to extreme stress* (pp. 217–243). Washington, DC: American Psychological Association.

Schumm, W. R., Bell, D. B., & Resnick, G. (2001). Recent research on family factors and readiness: Implications for military leaders. *Psychological Reports, 89*(1), 153–165.

Schwartz, J. P., Waldo, M., & Daniel, D. (2005). Gender-role conflict and self-esteem: Factors associated with partner abuse in court-referred men. *Psychology of Men and Masculinity, 6*, 109–113.

Scott, K. L., & Wolfe, D. A. (2000). What works in the treatment of batterers. In M. P. Kluger, G. Alexander, & P. A. Curtis (Eds.), *What works in child welfare* (pp. 105–111). Washington, DC: Child Welfare League of America.

Segal, D. R., Rohall, D. E., Jones, J. C., & Manos, A. M. (1999). Meeting the missions of the 1990s with a downsized force: Human resource management lessons from the deployment of PATRIOT missile units to Korea. *Military Psychology, 11*, 149–167.

Siever, L. J. (2008). Neurobiology of aggression and violence. *The American Journal of Psychiatry, 165*, 429–442.

Sherman, M. D., Sautter, F., Jackson, H. M., Lyons, J. A., & Han, X. (2006). Domestic violence in veterans with posttraumatic stress disorder who seek couples therapy. *Journal of Marital and Family Therapy, 32*(4), 479–490.

Snyder, A. I. (1978). Periodic marital separation and physical illness. *The American Journal of Orthopsychiatry, 48*, 637–643.

Stein, M. B., & Kennedy, C. (2001). Major depressive and post-traumatic stress disorder comorbidity in female victims of intimate partner violence. *Journal of Affective Disorders, 66*, 133–138.

Stewart, S. H., & Conrod, P. J. (2003). Psychosocial models of functional associations. In P. C. Ouimette & P. J. Brown (Eds.), *PTSD and substance use disorder comorbidity: Advances and challenges in research and practice*. Washington, D.C.: American Psychological Press.

Street, A. E., King, L. A., King, D. W., & Riggs, D. S. (2003). The Associations among male-perpetrated partner violence, wives' psychological distress and children's behavior problems: A structural equation modeling analysis. *Journal of Comparative Family Studies, 34*(1), 23–40.

Taft, C. T., Pless, A. P., Stalans, L. J., Koenen, K. C., King, L. A., & King, D. W. (2005). Risk factors for partner violence among a national sample of combat veterans. *Journal of Consulting and Clinical Psychology, 73*, 151–159.

Taft, C. T., Kaloupek, D. G., Schumm, J. A., Marshall, A. D., Panuzio, J., King, D. W., et al. (2007). Posttraumatic stress disorder symptoms, physiological reactivity, alcohol problems, and aggression among military veterans. *Journal of Abnormal Psychology, 116*, 498–507.

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

Taft, C. T., Vogt, D. S., Marshall, A. D., Panuzio, J., & Niles, B. D. (2007). Aggression among combat veterans: Relationships with combat exposure and symptoms of posttraumatic stress disorder, dysphoria, and anxiety. *Journal of Traumatic Stress, 20*, 135–145.

Taft, C. T., Schumm, J. A., Marshall, A. D., Panuzio, J., & Holtzworth-Munroe, A. (2008). Family-of-origin maltreatment, PTSD symptoms, social information processing deficits, and relationship abuse perpetration. *Journal of Abnormal Psychology, 117*, 637–646.

Taft, C. T., Watkins, L. E., Stafford, J., Street, A., E., & Monson, C. M. (in press). Posttraumatic stress disorder and intimate relationship functioning: A meta-analysis. *Journal of Consulting and Clinical Psychology*.

Tanielian, T., & Jaycox, L. X. (2008). *Invisible wounds of war: Psychological and cognitive injuries, their consequences, and services to assist recovery*. Santa Monica, CA: RAND.

Teten, A. L., Sherman, M. D., & Han, X. (2009). Violence between therapy-seeking veterans and their partners. *Journal of Interpersonal Violence, 24*(1), 111–127.

Tjaden, P., & Thoennes, N. (2000). *Full report of the prevalence, incidence, and consequences of violence against women: Findings from the National Violence Against Women Survey. (NCJ Publication No. 183781)*. Washington, DC: U.S. Department of Justice.

Vinokur, A. D., Pierce, P. F., & Buck, C. L. (1999). Work-family conflicts of women in the Air Force: Their influence on mental health and functioning. *Journal of Organizational Behavior, 20*, 865–878.

Warnken, W. J., Rosenbaum, A., Fletcher, K. E., Hoge, S. K., & Adelman, S. A. (1994). Head-injured males: A population at risk for relationship aggression? *Violence and Victims, 9*, 153–166.

Yehuda, R. (Ed.). (2006). *Psychobiology of posttraumatic stress disorders: A decade of progress (Vol. 1071)*. Malden, MA: Blackwell.