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Distress in Spouses of Service Members with Symptoms of Combat-Related PTSD: Secondary Traumatic Stress or General Psychological Distress?

Keith D. Renshaw[1,a], **Elizabeth S. Allen**[2], **Galena K. Rhoades**[3], **Rebecca K. Blais**[4], **Howard J. Markman**[3], and **Scott M. Stanley**[3]

[1] Department of Psychology, George Mason University

[2] Department of Psychology, University of Colorado at Denver

[3] Department of Psychology, University of Denver

[4] Department of Psychology, University of Utah

Abstract

Combat-related posttraumatic stress disorder (PTSD) is linked with elevated psychological distress in service members'/veterans' spouses. Researchers use a variety of terms to describe this distress, and recently, secondary traumatic stress and secondary traumatic stress disorder (STS/STSD) have become increasingly commonly used. Although STS/STSD connotes a specific set of symptoms that are linked to service members'/veterans' symptoms, researchers often use general measures of distress or generically worded measures of PTSD symptoms to assess STS/STSD. To determine how often scores on such measures appear to be an accurate reflection of STS/STSD, we examined responses to a measure of PTSD symptoms in 190 wives of male service members with elevated levels of PTSD symptoms. Wives rated their own PTSD symptoms, and then answered questions about their attributions for the symptoms they endorsed. Fewer than 20% of wives who endorsed symptoms on the PTSD measure attributed these symptoms completely to their husbands' military experiences. Moreover, compared with wives who attributed symptoms only to events in their own lives, wives who attributed symptoms completely or partially to their husbands' military experiences had a greater overlap between some of their responses on the PTSD measure and their responses to a measure of general psychological distress. These results suggest that most wives of service members/veterans with PTSD experience generic psychological distress that is *not* conceptually consistent with STS/STSD, although a subset does appear to endorse a reaction consistent with this construct. Implications of these findings for intervention and research with this vulnerable population are discussed.

Keywords

Marital Relationship; Military Personnel; Stress Disorders; Posttraumatic; War

[a]Corresponding Author: 4400 University Dr. MSN 3F5, Fairfax, VA 22030-4444, Phone: 703-993-5128, Fax: 703-993-1359, krenshaw@gmu.edu.

Introduction

A growing number of reports have established a link between combat-related posttraumatic stress disorder (PTSD) in military service members/veterans and psychological distress in spouses (review by Renshaw, Blais, & Caska, 2011). Such investigations have used a wide range of tools to assess spouses' psychological distress, from composites of items drawn from multiple questionnaires (e.g., Jordan et al., 1992), to singular measures of general distress (e.g., Calhoun, Beckham, & Bosworth, 2002), to measures of specific types of symptoms, like depression or anxiety (e.g., Renshaw, Rodrigues, & Jones, 2008). As the link between combat-related PTSD and psychological distress in spouses has solidified, speculation about the nature of distress experienced by these spouses has grown. Empirical investigations of these speculations, however, have lagged far behind such speculative writings. The goal of this study is to empirically examine the nature of the distress in spouses of service members/veterans with symptoms of combat-related PTSD.

Much of the speculation about the psychological impact of PTSD symptoms on spouses has focused on general forms of distress, typically in the form of non-specific symptoms of depression, anxiety and/or stress. Authors have hypothesized that such distress may arise from a variety of causes. Fredman, Monson, and Adair (2011) note that some spouses report distress about "running interference" for service members/veterans with PTSD (e.g., minimizing noise in the household to avoid triggering emotional outbursts). Solomon, Dekel and Zerach (2008) found lower levels of self-disclosure and intimacy in combat veterans with higher levels of PTSD-related avoidance, which may have detrimental psychological effects on the spouse. Renshaw and colleagues (Renshaw, Rodrigues, & Jones, 2008; Renshaw, Rodebaugh, & Rodrigues, 2010) have suggested that spouses' understanding of and attributions for service members'/veterans' symptoms may play a role in spouses' distress. Still other researchers have suggested that these spouses' distress arises primarily due to excess burden, such as having to take on extra responsibilities in the household, seeing their partners suffer, or helping manage their partners' psychological difficulties (Beckham, Lytle, & Feldman, 1996; Calhoun, Beckham, & Bosworth, 2002; Caska & Renshaw, 2011; Dekel, Solomon, & Bleich, 2005; Manguno-Mire et al., 2007). Despite the variety of possibilities, all of these mechanisms are consistent with the presence of general relationship and psychological distress in spouses that could typically be addressed via general couples therapy or PTSD-specific treatments for couples (e.g., Monson, Stevens, & Schnurr, 2004).

On the other hand, a growing number of researchers describe distress in these spouses using terms from the literature on mental health professionals who work with trauma survivors, such secondary traumatization, secondary traumatic stress, and compassion fatigue (e.g., Dekel, 2007; Dekel et al., 2005; Dirkzwager, Bramsen, Ader, & van der Ploeg, 2005; Figley, 1995; Mikulincer, Florian, & Solomon, 1995; Nelson Goff, Crow, Reisbig, & Hamilton, 2009; Solomon et al., 1992). Figley (1995, p. 8) defines secondary traumatic stress or secondary traumatic stress disorder (STS/STSD) as "a syndrome of symptoms nearly identical to PTSD" that arises due to "exposure to knowledge about a traumatizing event experienced by a significant other." Thus, individuals with STS/STSD are viewed as having PTSD-like reactions, specifically including re-experiencing or avoidance symptoms related to the event(s) experienced by the significant other (e.g., dreams about the significant other experiencing the event, avoiding reminders of the event). Moreover, STS/STSD is explicitly defined as distinct from the construct of "burnout" or "emotional exhaustion," in that STS/STSD is a clear set of symptoms with an abrupt onset (Figley, p. 12). A handful of researchers have interpreted elevated scores on measures of general distress as reflective of secondary traumatization (Dekel, 2007; Dekel et al., 2005; Mikulincer et al., 1995; Solomon et al., 1992), and a few researchers have furthermore found that spouses of combat veterans

with PTSD have significantly higher levels of their own PTSD symptoms when compared to spouses of combat veterans without PTSD (e.g., Dirkzwager et al., 2005; Nelson Goff et al., 2009). High levels of general distress are by no means specific to a STS/STSD reaction; thus, interpretation of scores on such measures as reflecting STS/STSD is questionable. The latter findings regarding responses to measures of PTSD are clearly more in line with the specific construct of STS/STSD, but even with these results, there are several important limitations that should be noted.

First, in these studies, trauma-specific items on PTSD questionnaires are typically worded so as not to refer to any specific trauma event (e.g., Dirkzwager et al., 2005; Nelson Goff et al., 2009). Thus, spouses' high scores on these PTSD measures may, in fact, be related to some trauma event in their own history, rather than the veterans' traumatic experiences. Along these same lines, spouses' high scores could also reflect the difficulties of living with veterans with PTSD, rather than a reaction to their partners' trauma. For example, a spouse's reported difficulty sleeping may, in fact, be due primarily to living with a combat veteran who has difficulty sleeping related to his or her PTSD, as opposed to a symptom of the spouse's own reaction to trauma. Finally, the measures used to assess PTSD typically consist of self-report items that directly assess each of the 17 symptoms of PTSD described in the Diagnostic and Statistical Manual for Mental Disorders (DSM; American Psychiatric Association, 1994). PTSD symptoms include 8 trauma-specific symptoms (5 intrusion/re-experiencing symptoms and 3 avoidance symptoms), such as physiological reactivity to trauma-related stimuli and avoidance of talking or thinking about the trauma, and 9 fairly generic symptoms of distress (4 withdrawal/numbing symptoms and 5 hyperarousal symptoms), such as feeling distant or cut off from others and irritability. Thus, individuals can score moderately highly on PTSD measures without actually endorsing any trauma-specific symptoms. Given these limitations, there is a need for a more in-depth examination of distress in spouses of veterans with PTSD symptoms.

Although the distinctions among the types of distress experienced by these spouses may seem semantic, how we characterize this distress has important ramifications. Diagnostic systems are created to facilitate broadly applicable research and treatment recommendations. Along these lines, treatment needs may vary widely for spouses with actual re-experiencing or avoidance symptoms related to the veterans' experiences, compared to spouses who feel exhausted or distressed by their extra work and household responsibilities, less intimate with their partners, or emotionally overtaxed from trying not to agitate their partner. Thus, to maximize our ability to help the growing population of spouses of soldiers/veterans affected by PTSD, it is important to accurately capture the type of distress they are experiencing.

Current Study

The present report aims to take a first step in this direction by carefully examining the composition of spouses' distress to determine whether it appears reflective of STS/STSD or more general psychological distress. Wives of combat veterans completed a measure of generic symptoms of distress, as well as a measure of PTSD symptoms that had no specified referent event, as is typical of the existing research in this area. We then asked follow-up questions about whether spouses attributed the symptoms they endorsed on the measure of PTSD to military-related event(s) that their husbands had experienced or to events in their own lives. An attribution that one's own symptoms are related to the partner's military experiences seems to be a necessary but not sufficient condition for STS/STSD. That is, wives who do not attribute their symptoms at all to their husbands' military experience are unlikely to have PTSD or PTSD-like symptoms that have arisen due to exposure to knowledge about a traumatizing event experienced by a significant other (i.e., STS/STSD). Thus, we analyzed the percentage of wives who related their symptoms to their husbands' military experiences versus events from their own lives. These percentages were interpreted

as reflecting the percentage of wives who appeared to be experiencing something akin to STS/STSD vs. the percentage experiencing a reaction to potentially traumatic events from their own lives.

To further examine general patterns of responding to the PTSD measure, as well as differences among wives who made differing attributions for their responses, we subsequently analyzed wives' responses to trauma-specific items versus generic symptom items on the PTSD measure. We first examined correlations of a measure of general psychological distress in spouses with their (a) total score on the PTSD measure, (b) scores for trauma-specific symptoms only, and (c) scores for generic symptoms only. Although we expected all of these correlations to be high, we hypothesized that the correlation of the general distress measure with trauma-specific symptoms on the PTSD measure would be lower than that with generic symptoms on the PTSD measure, which would support the distinctiveness of the trauma-specific symptoms on the PTSD measure.

Second, we examined overall levels of trauma-specific and generic distress symptoms in wives who made different attributions for their symptoms. If wives who attributed their symptoms to their husbands' military experiences were indeed experiencing a PTSD-like reaction (i.e., STS/STSD), we expected no differences between these wives and those who attributed their responses to events in their own lives. If, on the other hand, wives who attributed their symptoms to their husbands' military experiences were actually experiencing some form of general distress that was *not* reflective of a true PTSD-like reaction (i.e., STS/STSD), we expected that they would endorse more general distress symptoms than trauma-specific symptoms, relative to wives who attributed their symptoms to events in their own lives.

Finally, we examined whether wives' attributions for their responses on the measure of PTSD moderated the associations between their scores on the measure of general distress and their responses to the PTSD measure. Again, if wives who attributed their symptoms to their husbands' military experiences were indeed experiencing a PTSD-like reaction (i.e., STS/STSD), we expected no moderation of these associations. If, on the other hand, wives who attributed their symptoms to their husbands' military experiences were actually experiencing some form of general distress that was *not* reflective of a PTSD-like reaction (i.e., STS/STSD), we expected that attributions would moderate this association, such that it would be stronger for wives who attributed their symptoms to their husbands' military experiences (i.e., stronger overlap of responses on the PTSD measure with general distress) and weaker for wives who attributed their symptoms to events in their own lives (i.e., weaker overlap of responses on the PTSD measure with general distress).

Method

Participants

The sample used in these analyses included 190 civilian wives of male service members who had possible combat-related PTSD based on their responses to a self-report measure (i.e., above 34 on the PTSD Checklist; see Measures for further details). One hundred thirty-six service members reported having been deployed during part or all of the past year prior to participation (which took place in 2007 and 2008). Of those who reported having been deployed within the last year, average length of their total deployment was 11.31 months (*SD* = 4.04 months). Service members had returned at varying times during the past year, with an average of 6.83 (*SD* = 2.76) months since the deployment had ended.

Service members were non-Hispanic White (71.1%), Hispanic (11.1%), African-American (10.5%), and other (7.4%). Most service members had either a high school diploma (35.8%)

or GED (40.0%), with 13.7% having a technical or associate's degree, 5.8% having a bachelor's degree, and 4.3% having an advanced degree (1 participant failed to answer this question). Most (71.6%) had been deployed within the past year. Average age of service members was 27.83 (*SD* = 5.64), and average length of relationship with their wives was 4.81 years (*SD* = 4.51). Wives' racial/ethnic composition was similar to husbands, with 70.0% non-Hispanic White, 11.6% Hispanic, 10.0% African-American, and 8.3% other. Most wives also had either a high school diploma (27.4%) or GED (27.9%), with 5.8% not having completed high school, 22.1% having a technical or associate's degree, 12.1% having a bachelor's degree, and 4.7% having an advanced degree. Most wives (70.5%) were unemployed, with 15.3% working part-time and 14.2% working full-time. Average age of wives was 27.09 years old (*SD* = 5.90).

Measures

PTSD Checklist (PCL; Weathers et al., 1993)—The PCL is a 17-item, self-report, Likert-type scale that assesses symptoms of PTSD based on the criteria in the DSM – Fourth Edition (American Psychiatric Association, 1994). This widely used scale has high internal consistency, test-retest reliability, and convergent and discriminant validity (Pratt, Brief, & Keane, 2006). Each item reflects one of the specific criteria for PTSD, and is answered on a scale from 1 (*not at all*) to 5 (*extremely*). Thus, in addition to deriving a total score that represents overall symptom severity, one can also obtain scores for trauma-specific symptoms (items 1 through 8) and generic symptoms (items 9 through 17). For our purposes, these scores were calculated as the average response to each item, to account for the fact that there are 8 trauma-specific symptoms and 9 generic symptoms.

The original authors suggested that scores of 3 or more on each item are considered to represent endorsement of that item as a symptom (Weathers et al., 1993). In addition, Weathers and colleagues recommended that cutoff scores of 50 and 44 be used to indicate likely presence of PTSD in military and civilian populations, respectively. However, more recent research with OEF/OIF veterans that used Receiver Operating Characteristic curves suggested that cutoff scores between 30 and 34 maximize sensitivity and specificity (Bliese et al., 2008). For the purposes of this study, service members who scored above 34 were included as having possible PTSD.

In this study, both service members and spouses completed the Civilian version of the PCL (PCL-C), which asks participants to rate the degree of problems they are having in response to "stressful life experiences." This measure evidenced excellent internal consistency in the overall sample (Cronbach's $\alpha = .94$ for service members and .93 for wives) and the specific subsample used for this study (Cronbach's $\alpha = .84$ for service members and .94 for wives). After completion of the items, participants were asked to indicate what the symptoms were related to: their own military experience, their spouse's military experience, other (non-military) stressors in their life, or other (non-military) stressors in their spouse's life.

General psychological distress—We used 12 items from the longer Mood and Anxiety Symptom Questionnaire (Watson & Clark, 1991) to assess wives' general psychological distress. We chose these 12 items based on factor analyses that indicate that they measure general psychological distress, rather than symptoms specific to anxiety or depressive disorders (Keogh & Reidy, 2000). Example items are: "during the last week, I felt dissatisfied with everything" and "during the last week, I felt tense or 'high strung.'" Unpublished work has further demonstrated the reliability and validity of these particular items in measuring psychological distress (Ronald Rogge, personal communication, 6/10/2006). Each item was measured on a 1 *(not at all)* to 5 *(extremely)* scale. This measure was scored by averaging the items. Higher scores indicate more distress. This measure

evidenced excellent internal consistency in the overall sample of wives and the specific subsample of wives used for this study (Cronbach's α = .94 for both).

Procedure

Participants were selected from a sample of 664 couples who enrolled in a longitudinal study of the effectiveness of a marriage education intervention (see Allen, Stanley, Markman, Rhoades, & Loew, in press; Stanley, Allen, Markman, Rhoades, & Prentice, 2010 for further details) conducted at two sites: Fort Campbell, KY in 2007 (*n* = 480) and Fort Benning, GA in 2008 (*n* = 184). Recruitment was conducted via brochures, media ads and stories, posters, and referrals from unit chaplains. To enroll in the study, all couples were required to be married, have at least one active duty partner, speak and read English fluently, and not have participated in a similar marriage workshop already. To participate, all couples agreed to the conditions of the study (i.e., repeated paid surveys over time on individual and relationship variables, random assignment to the workshop condition or the no-treatment control condition). The data for the current study were drawn from the baseline assessment, prior to random assignment and the intervention. Human subjects approval for the intervention phase of the study (including recruitment and pre/post assessments on site at the installations) was obtained from both the Army and University of Denver IRB. All couples completed baseline self-report measures at their respective posts under the supervision of study personnel. Spouses completed the measures separately and privately without communicating. When completed, each individual sealed their questionnaire in an envelope to be sent directly to the researchers, and were each paid $50 ($100 for the couple) for their completion of the baseline surveys.

Of the 664 couples who participated in the larger study, 40 were dual military couples (i.e., both members were in the military), and 4 couples had at least one individual who failed to provide data regarding military status. These couples were excluded, as both individuals could have experienced direct combat exposure. Of the remaining couples, only 14 consisted of a female military member and male civilian. Thus, to preserve homogeneity and comparability with prior research, we focused on the 606 couples with military husbands and civilian wives. Of these couples, 222 men scored a 35 or higher on the PCL, indicating probable PTSD; however, 26 men indicated that their responses on the PCL were unrelated to their own military experience. In addition, despite the fact that all wives had indicated they were currently civilians, six wives reported that their responses on the PCL were related to prior military experience of their own and were, thus, excluded. The final sample consisted of 190 couples with husbands who endorsed PTSD symptom levels consistent with probable military-related PTSD and wives who had no known prior military experience.

Within this subsample, there were no differences on any of the primary variables of interest (all *p*s > .05) between wives at Ft. Campbell (*n* = 147) and wives at Ft. Benning (*n* = 43) or between wives whose husbands had or had not been deployed during the last year. Similarly, variables of interest were not associated with length of most recent deployment or time since the end of the most recent deployment (all *p*s > .05).

Results

Service members' mean score on the PCL was 50.06 (*SD* = 11.45), and wives' mean score was 34.87 (*SD* = 15.36). Twenty wives (10.5%) denied the presence of all symptoms on the PCL. Seventy-nine wives (41.6%) exceeded a score of 34 on the PCL-C, with fifty-eight (30.5%) exceeding the originally recommended cutoff of 44. Forty-five wives (23.7%) endorsed enough criteria at the moderate level of severity (i.e., score of 3 or higher) to warrant a diagnosis of PTSD based on their responses, with 41 of these 45 (21.6% of the

entire sample) also exceeding the higher cutoff score of 44. Thus, depending on the metric used, between 21.6% and 41.6% of spouses had responses on the PCL that were suggestive of a diagnosis of PTSD.

General Attributions for Responses on the PCL

Our first goal was to analyze the percentage of wives who attributed their symptoms to their husbands' military experiences versus events from their own lives, to determine the percentage of wives who appeared to be responding in a pattern that might be reflective of STS/STSD vs. the percentage responding in a way that reflected reactions to potentially traumatic events from their own lives. Of the 170 wives who reported at least some symptoms on the PCL, 106 (62.4%) indicated that their responses on this measure were completely unrelated to their husbands' military experience, 42 (24.7%) indicated that their responses on this measure were due to their husbands' military experience as well as experiences in their own lives, and 22 (12.9%) reported that their symptoms were due solely to their husbands' military experiences. There were no significant differences across these groups of wives in their own total scores on the PCL ($F[2, 167] = 1.80$, $p = .17$) or in their husbands' PCL scores ($F[2,167] = 0.70$, $p = .50$). Furthermore, the overall distribution of wives' attributions for symptoms were the same for subgroups of wives with scores of 35 or higher and with scores of 44 or higher on the PCL (53.2% and 56.1% of each respective group indicated that their responses were completely unrelated to their husbands' military experiences, whereas 12.7% and 15.5% of each respective group reported that their symptoms were solely due to their husbands' military experiences). Thus, regardless of the severity of spouses' symptoms, most wives attributed their symptoms to events other than their husbands' military experience, with only 12.7% to 15.5% attributing their symptoms solely to their husbands' military experience. These results suggested that a minority of wives responded to the PCL in a way that might reflect STS/STSD.

Responses to Trauma-Specific vs. Generic Items on the PCL

Our next goal was to examine the distinctiveness of wives' responses on the PCL by examining the correlation of their PCL scores with a measure of generic psychological distress (the 12 items from the MASQ). We hypothesized that the correlation of the MASQ items with trauma-specific items from the PCL would be lower than the correlation of the MASQ items with generic items from the PCL. Wives' responses on the MASQ were significantly and positively correlated with their overall scores on the PCL ($r = .70$), generic symptoms on the PCL ($r = .71$), and trauma-specific symptoms on the PCL ($r = .57$). In support of our hypothesis, the correlation of the MASQ with trauma-specific items on the PCL was significantly lower than the correlations of the MASQ with both generic symptoms ($t[163] = -3.20$, $p < .01$) and the total score ($t[165] = -5.65$, $p < .001$) (see Steiger, 1980 for formulas to compare correlation magnitudes). Thus, it appears that the generic symptom items on the PCL are indeed more reflective of general psychological distress than are the trauma-specific items on the PCL.

Subsequently, we examined whether wives endorsed different levels of trauma-specific versus generic symptoms depending on their attributions for their symptoms. If wives who attributed their symptoms to their husbands' military experiences were indeed experiencing a PTSD-like reaction (i.e., STS/STSD), we expected no differences across groups. If, on the other hand, wives who attributed their symptoms to their husbands' military experiences were actually experiencing some form of general distress that was *not* reflective of a true PTSD-like reaction (i.e., STS/STSD), we expected that they would endorse more general distress symptoms than trauma-specific symptoms, relative to wives who attributed their symptoms to events in their own lives. To examine this question, we conducted a two-way ANOVA with type of PTSD symptom (trauma-specific vs. generic) as a within-subjects

factor and attribution for symptoms as a between-subjects factor, comparing those who attributed their symptoms solely to events in their own lives with those who attributed their symptoms partially or completely to their husbands' military experience. There were no significant main effects for type of symptom (F[1,164] = 0.76, p = .38) or attribution (F[1, 164] = 3.14, p = .08). Although the interaction between attribution and type of symptom was nearly significant (F[1, 164] = 3.68, p < .06), visual inspection of group means revealed that this result was largely due to the group of wives who attributed their symptoms in part to events in their own lives and in part to their husbands' military experiences. These wives reported greater levels of generic symptoms (M = 2.51, SD = 0.97) than trauma-specific symptoms (M = 2.22, SD = 0.96), whereas wives who attributed their symptoms solely to events in their own lives or solely to their husbands' military experience reported similar levels of trauma-specific (M = 2.12, SD = 0.98 and M = 2.31, SD = 1.06, respectively) and generic (M = 2.05, SD = 0.89 and M = 2.24, SD = 1.04, respectively) symptoms. Overall, then, these results were consistent with the notion that wives who attributed symptoms solely to husbands' military experiences might be experiencing some form of STS/STSD.

To provide more detailed information with regard to wives' responses to items on the PCL, the average response to each item on the PCL is provided in Table 1, separated by whether wives attributed their symptoms fully, partially, or not at all to their husbands' military experience. With the understanding that the number of comparisons resulted in inflated chances of Type I error, one-way ANOVAs comparing the mean response on each item revealed no differences among groups for any of the eight trauma-specific items. In contrast, five out of nine generic symptom items demonstrated significant differences across the groups. In each of these instances, the only significant differences involved higher levels of symptoms in wives who attributed their symptoms to both events in their own lives and their husbands' military experiences. There were no differences in responses to any item between wives who attributed their symptoms to events in their own lives alone and wives who attributed their symptoms to their husbands' military experiences alone, which was again consistent with the notion that wives who attributed symptoms solely to husbands' military experiences might be experiencing some form of STS/STSD.

Our final set of analyses focused on whether the associations of wives' responses on the PCL with their responses to the MASQ items differed depending on the attributions wives made for their responses on the PCL. If wives who attributed their symptoms to their husbands' military experiences were actually experiencing some form of general distress that was *not* reflective of a PTSD-like reaction (i.e., STS/STSD), we expected that attributions would moderate this association, such that it would be stronger for wives who attributed their symptoms to their husbands' military experiences (i.e., stronger overlap of responses on the PTSD measure with general distress) and weaker for wives who attributed their symptoms to events in their own lives (i.e., weaker overlap of responses on the PTSD measure with general distress).We again compared wives who attributed their PCL responses solely to events in their own lives with who attributed their responses either partially or completely to husbands' military experiences. We centered the MASQ variable and created an interaction between this centered variable and the dichotomized attribution group variable, and then regressed PCL scores onto the centered version of the MASQ, the dichotomous attribution variable, and their interaction, with three separate regressions for (1) the PCL total score, (2) the PCL trauma-specific item score, and (3) the PCL generic item score. All regressions were significant (ps < .001), but the interaction was significant ($\beta = -.15$, p < .05) only in the regression of the generic PCL item score. A probe of this interaction indicated that the generic items on the PCL were more strongly associated with MASQ items in spouses who attributed symptoms partially or completely to their husbands' military experiences (β = .77, p < .001) than in spouses who attributed symptoms only to events in their own lives (β = .62, p < .001).1 Thus, responses to generic symptom items on

the PCL were more overlapping with general psychological distress scores in wives who attributed their symptoms either partially or completely to their husbands' military experiences, when compared to wives who attributed their symptoms only to events in their own lives.

Discussion

As the evidence of elevated distress in spouses of military service members/veterans with combat-related PTSD grows, it is becoming increasingly important to better characterize the nature of this distress. An understanding of the type of distress experienced is of critical importance in developing appropriate interventions for this vulnerable population. One theory that stands apart from the others in terms of its treatment implications is the notion that these spouses are experiencing STS/STSD, or a PTSD-like set of symptoms that arises abruptly, due to empathetic or other emotional responding to their knowledge of their partners' traumatic experiences (Figley, 1995). Several researchers have interpreted high scores on measures of general distress and on measures of PTSD symptoms as supportive of the presence of STS/STSD (Dekel, 2007; Dekel et al., 2005; Dirkzwager et al., 2005; Mikulincer et al., 1995; Nelson Goff et al., 2009; Solomon et al., 1992). However, it is unclear that spouses' responses on such measures are actually reflective of a process like STS/STSD. Even measures of PTSD symptoms in spouses may not clearly relate to STS/STSD, given that these measures are typically administered without any specified referent event and that many symptoms on these measures may, in fact, reflect general distress (e.g., difficulty sleeping). Thus, in this study, we examined responses on a generic measure of PTSD symptoms (the PTSD Checklist; Weathers et al., 1993) that was administered to wives of male service members reporting significant symptoms of PTSD, as well as spouses' reported attributions for the symptoms they endorsed on this measure.

Most wives reported at least some symptoms on this measure, with between 21.6% and 41.6% of wives reporting severity levels that met or exceeded a cutoff suggestive of the presence of PTSD. However, when we asked about the underlying events that were related to their responses on this measure, more than half of the wives attributed their symptoms to events in their own lives, rather than their husbands' military experience. Fewer than 20% of spouses reported that their symptoms were solely due to husbands' military experiences. Moreover, it is unclear how many spouses in this subset were attributing their symptoms specifically to their knowledge about their husbands' experiences, versus to their own experience of living with his reactions to those experiences (e.g., feeling jumpy because of their husbands' short temper). Thus, unless one argues that these wives are wholly unaware of the potential underlying reasons for their symptoms, it would appear that STS/STSD would be an inaccurate descriptor for the distress experienced by the majority of wives in this sample. Rather, most of these wives are reporting symptoms of general psychological distress that are related either to events in their own lives or, perhaps, to the difficulties of living with their husbands' symptoms resulting from trauma exposure.

In further support of this interpretation, our exploratory analyses of wives' responses to specific items on the PTSD Checklist suggest that wives' responses on this measure may not uniformly reflect a PTSD-like reaction. Of the 17 items on the PCL, nine refer to fairly general forms of distress, and as expected, wives' responses on these items were more strongly overlapping with a measure of general psychological distress than were the eight

[1]The same general pattern was obtained when comparing wives who attributed symptoms solely to events in their own lives with only wives who attributed symptoms solely to husbands' military experiences, and when comparing wives who attributed symptoms solely to events in their own lives with only wives who attributed symptoms partially to husbands' military experiences and partially to events in their own lives. Results are available from the first author upon request.

trauma-specific items. Moreover, there was some evidence to suggest the association of the generic items with general psychological distress was significantly stronger in wives who attributed their symptoms partially or completely to their husbands' military experiences, relative to wives who attributed their symptoms solely to events in their own lives. However, given that a similar finding was not obtained for trauma-specific or overall scores on the PCL, this result should be viewed tentatively. Future research addressing the potential overlap of the PCL items with generic distress in this population is needed.

It should be stressed that these results do not imply that no spouses suffer from STS/STSD. Indeed, a subset of our sample did attribute their responses to their husbands' military experiences, and some of the results suggest that these individuals may indeed have been experiencing a PTSD-like reaction that would be consistent with STS/STSD. However, our results highlight the drawbacks of interpreting global distress expressed by spouses of those with PTSD as an STS/STSD reaction, as the majority of wives appeared to be experiencing something different. One of the primary conclusions that can be drawn from our results is that the construct of STS/STSD appears to require more rigorous assessment than has been used to date. Our findings suggest that researchers and clinicians who are interested in the STS/STSD construct may need to utilize more focused measures that direct spouses to respond specifically about PTSD-like symptoms that are clearly related to their knowledge of service members' military experiences. Even PTSD-specific measures like the one used in this study appear to pick up a wide range of distress when there is no specified referent event. It may be that, as with PTSD, the gold standard for assessing STS/STSD in a research paradigm should be an interview to establish that the reactions being discussed fit a PTSD-like symptom pattern this is clearly linked with knowledge of another individual's trauma, such as an adaptation of the Clinician Administered PTSD Scale (Blake et al., 2000). Further research is also needed to determine the stability of STS/STSD over time, the impact of STS/STSD on spouses' functioning, and the responsiveness of STS/STSD to various forms of treatment.

Several researchers appear to use STS/STSD somewhat loosely, without intending to connote the full gamut of symptoms and mechanisms specified within this framework (e.g., Mikulincer et al., 1995). However, the distinction is important, as spouses with STS/STSD will likely have very different treatment needs than spouses who are experiencing other forms of distress. For example, based on our current understanding of effective treatments for PTSD (review by Ponniah & Hollon, 2009), spouses with true PTSD-like reactions (i.e., STS/STSD) should likely undergo some form of exposure-based or cognitive therapy focused on their knowledge of the veterans' combat experiences. In contrast, spouses with more general distress may need couples, individual, or group work focused on the source of that distress, be it caregiver burden, the stress of living with a partner with PTSD, changes in the marital relationship, or other variables. In fact, the mechanisms of distress posited from the STS/STSD framework could even be taken to suggest that couples-oriented approaches like Cognitive Behavioral Conjoint Therapy for PTSD (Monson, Stevens, & Schnur, 2004) are contraindicated, due to the possibility of further secondary traumatization of the partner. Thus, these distinctions have clear ramifications for treatment, and it is our recommendation that researchers and clinicians take care to utilize terminology carefully. Just as one would not assume that any distress in combat veterans is, by default, reflective of PTSD, we should avoid analogous assumptions about spouses of combat veterans.

More research is clearly needed to elucidate the various mechanisms by which spouses of combat veterans with PTSD may develop distress. In particular, longitudinal research that examines the transactional progression of service members' symptoms, spouses' psychological distress, and overall relationship distress and functioning, is needed to address the needs of service members and their spouses. It is likely that many of the proposed

mechanisms are at play to varying degrees for different spouses; thus, a variety of approaches may be needed in interventions for spouses, depending on their specific circumstance. In addition, explicit assessment of spouses' general functioning is largely lacking in this literature. To gain a more comprehensive picture of the potential interpersonal effects of combat-related PTSD, knowledge regarding the impact on spouses' day-to-day lives and functioning is needed.

There are, of course, multiple limitations to the current findings presented above. All measures were self-report, raising the possibility of biased responding. Also, presence of PTSD in service members was not confirmed by diagnostic interview, although it is important to note that research has shown even subclinical symptoms of PTSD are linked with elevated distress in spouses (see review by Renshaw et al., 2011). Another limitation to the current findings is the fact that all spouses were female civilian wives of male service members. Although this is typical of research with military populations, further research with female service members and particularly their male spouses is needed. In addition, all couples were enrolling in research which had an intervention focus (50/50 chance of marital education), which may limit the generalizability of results. Furthermore, the cross-sectional nature of the sample limits causal inferences. It would be ideal to have longitudinal samples wherein spouses' symptoms were assessed before any deployments or combat exposure and after. Finally, it should be noted that the sample consisted of wives of service members who were still in active duty. Similar research with spouses of military veterans is needed to determine whether findings replicate in veteran samples.

These limitations notwithstanding, the current set of results represents a first step in broadening our understanding of the types of distress experienced by spouses of combat veterans with PTSD symptoms. It should not be surprising that spouses might vary in their reactions to living with a combat veteran with PTSD, just as combat veterans themselves vary in their reactions to the combat trauma they experience. It is our hope that these results will focus both clinicians and researchers on the importance of assessing multiple sources of distress and the precise nature of distress experienced by this vulnerable group of spouses of combat veterans with PTSD. Such knowledge will help further our understanding of their needs, which can enable us to develop interventions that can reduce their distress. Not only could such interventions improve the quality of life for these spouses, but they could also, in turn, increase spouses' ability to provide support to their combat veteran spouses as they deal with their own PTSD and associated problems.

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References

Allen ES, Stanley S, Markman H, Rhoades G, Loew B. Marriage education in the Army: Results of a randomized clinical trial. Journal of Couple and Relationship Therapy. (in press).

American Psychiatric Association. Diagnostic and statistical manual of mental disorders. 4. Washington, DC: Author; 1994.

Antony MM, Bieling PJ, Cox BJ, Enns MW, Swinson RP. Psychometric properties of the 42-item and 21-item versions of the Depression Anxiety Stress Scales in clinical groups and a community sample. Psychological Assessment. 1998; 10:176–181.10.1037/1040-3590.10.2.176

Beckham JC, Lytle BL, Feldman ME. Caregiver burden in partners of Vietnam War veterans with posttraumatic stress disorder. Journal of Consulting and Clinical Psychology. 1996; 64:1068–1072.10.1037/0022-006X.64.5.1068 [PubMed: 8916637]

Blake, D.; Weathers, F.; Nagy, L.; Kaloupek, D.; Klauminzer, G.; Chamey, D.; Keane, T.; Buckley, TC. Instruction manual: Clinician administered PTSD scale (CAPS). Boston: National Center for PTSD – Behavioral Sciences Division; 2000.

Bliese PD, Wright KM, Adler AB, Cabrera O, Castro CA, Hoge CW. Validating the Primary Care Posttraumatic Stress Disorder Screen and the Posttraumatic Stress Disorder Checklist with soldiers returning from combat. Journal of Consulting and Clinical Psychology. 2008; 76:272–281.10.1037/0022-006X.76.2.272 [PubMed: 18377123]

Calhoun PS, Beckham JC, Bosworth HB. Caregiver burden and psychological distress in partners of veterans with chronic posttraumatic stress disorder. Journal of Traumatic Stress. 2002; 15:205–212.10.1023/A:1015251210928 [PubMed: 12092912]

Caska CM, Renshaw KD. Caregiver burden in spouses of National Guard/Reserve service members deployed during Operations Enduring Freedom and Iraqi Freedom. Journal of Anxiety Disorders. 2011; 25:346–351.10.1016/j.janxdis.2010.10.008 [PubMed: 21112182]

Dekel R. Posttraumatic distress and growth among wives of prisoners of war: The contribution of husbands' posttraumatic stress disorder and wives' own attachment. American Journal of Orthopsychiatry. 2007; 77:419–426.10.1037/0002-9432.77.3.419 [PubMed: 17696670]

Dekel R, Solomon Z, Bleich A. Emotional distress and marital adjustment of caregivers: Contribution of level of impairment and appraised burden. Anxiety, Stress, and Coping. 2005; 18:71–82.10.1080/10615800412336427

Dirkzwager AJE, Bramsen I, Ader H, van der Ploeg HM. Secondary traumatization in partners and parents of Dutch peacekeeping soldiers. Journal of Family Psychology. 2005; 19:217–226.10.1037/0893-3200.19.2.217 [PubMed: 15982097]

Figley, CR. Compassion fatigue as secondary traumatic stress disorder: An overview. In: Figley, CR., editor. Compassion fatigue. New York: Brunner-Mazel; 1995. p. 1-20.

Fredman SJ, Monson CM, Adair KC. Implementing cognitive-behavioral conjoint therapy for PTSD with the newest generation of veterans and their partners. Cognitive and Behavioral Practice. 2011; 18:120–130.10.1016/j.cbpra.2009.06.007

Jordan BK, Marmar CR, Fairbank JA, Schlenger WE, Kulka RA, Hough RL, Weiss DS. Problems in families of male Vietnam veterans with posttraumatic stress disorder. Journal of Consulting and Clinical Psychology. 1992; 60:916–926.10.1037/0022-006X.60.6.916 [PubMed: 1460153]

Keogh E, Reidy J. Exploring the factor structure of the Mood and Anxiety Symptom Questionnaire (MASQ). Journal of Personality Assessment. 2000; 74:106–125.10.1207/S15327752JPA740108 [PubMed: 10779936]

Lovibond, SH.; Lovibond, PF. Manual for the Depression Anxiety Stress Scales. 2. Sydney: Psychology Foundation; 1995a.

Lovibond PF, Lovibond SH. The structure of negative emotional states: Comparison of the Depression Anxiety Stress Scales (DASS) with the Beck Depression and Anxiety Inventories. Behaviour Research and Therapy. 1995b; 33:335–343.10.1016/0005-7967(94)00075-U [PubMed: 7726811]

Manguno-Mire G, Sautter F, Lyons J, Perry D, Glynn S, Sullivan G, Sherman M, Myers L. Psychological distress and burden among female partners of combat veterans with PTSD. Journal of Nervous and Mental Disease. 2007; 195:144–151.10.1097/01.nmd.0000254755.53549.69 [PubMed: 17299302]

Maslach, C. Burnout The cost of caring. Englewood Cliffs, NJ: Prentice Hall; 1982.

Mikulincer M, Florian V, Solomon Z. Marital intimacy, family support, and secondary traumatization: A study of wives of veterans with combat stress reaction. Anxiety, Stress, and Coping. 1995; 8:203–213.10.1080/10615809508249373

Monson, CM.; Stevens, SP.; Schnurr, PP. Cognitive-behavioral couple's treatment for posttraumatic stress disorder. In: Corales, TA., editor. Focus on posttraumatic stress disorder research. Hauppage, NY: Nova Science; 2004. p. 251-280.

Moore, DS.; McCabe, GP. Introduction to the practice of statistics. 5. New York: Freeman; 2005.

Nelson Goff BS, Crow JR, Reisbig AMJ, Hamilton S. The impact of soldiers' deployment to Iraq and Afghanistan: Secondary traumatic stress in female partners. Journal of Couple & Relationship Therapy. 2009; 8:291–305.10.1080/15332690903246085

Ponniah K, Hollon SD. Empirically supported psychological treatments for adult acute stress disorder and posttraumatic stress disorder: A review. Depression and Anxiety. 2009; 26:1086–1109.10.1002/da.20635 [PubMed: 19957280]

Pratt, EM.; Brief, DJ.; Keane, TM. Recent advances in psychological assessment of adults with posttraumatic stress disorder. In: Follette, VM.; Ruzek, JI., editors. Cognitive-behavioral therapies for trauma. 2. New York: Guilford; 2006. p. 34-61.

Renshaw, KD.; Blais, RK.; Caska, CM. Distress in spouses of combat veterans: The importance of interpersonally based cognitions and behaviors. In: MacDermid Wadsworth, S.; Riggs, D., editors. Risk and resilience in US military families. Springer; New York: 2011. p. 69-84.

Renshaw KD, Rodrigues CS, Jones DH. Psychological symptoms and marital satisfaction in spouses of Operation Iraqi Freedom veterans: Relationships with spouses' perceptions of veterans' experiences and symptoms. Journal of Family Psychology. 2008; 22:586–594.10.1037/0893-3200.22.3.586 [PubMed: 18729672]

Schulz R, O'Brien AT, Bookwala J, Fleissner K. Psychiatric and physical morbidity effects of dementia caregiving: Prevalence, correlates and causes. Gerontologist. 1995; 35:771–791. [PubMed: 8557205]

Solomon Z, Dekel R, Zerach G. The relationships between posttraumatic stress symptom clusters and marital intimacy among war veterans. Journal of Family Psychology. 2008; 22:659–666.10.1037/a0013596 [PubMed: 18855502]

Solomon Z, Waysman M, Levy G, Fried B, Mikulincer M, Benbenishty R, Florian V, Bleich A. From front line to home front: A study of secondary traumatization. Family Process. 1992; 31:289–302.10.1111/j.1545-5300.1992.00289.x [PubMed: 1451774]

Stanley SM, Allen ES, Markman HJ, Rhoades GK, Prentice D. Decreasing divorce in Army couples: Results from a randomized clinical trial of PREP for Strong Bonds. Journal of Couple and Relationship Therapy. 2010; 9:149–160.10.1080/15332691003694901 [PubMed: 20634994]

Steiger JH. Tests for comparing elements of a correlation matrix. Psychological Bulletin. 1980; 87:245–251.10.1037/0033-2909.87.2.245

Watson, D.; Clark, LA. Unpublished instrument. 1991. The Mood and Anxiety Symptom Questionnaire.

Weathers, FW.; Litz, BT.; Herman, DS.; Huska, JA.; Keane, TM. The PTSD Checklist (PCL): Reliability, validity, and diagnostic utility. Paper presented at the meeting of the International Society for Traumatic Stress Studies; San Antonio, TX. 1993 October.

Table 1

Means and Standard Deviations of Wives' Responses on Each Item on the PTSD Checklist, Based on Whether They Attribute Symptoms to their Husbands' Military Experience

	Symptoms Attributed to Husband's Military Experience		
	Fully	**Partially**	**Not at all**
Trauma-Specific Symptoms			
Intrusive memories, thoughts, images	2.77 (1.60)	2.24 (1.26)	2.29 (1.25)
Nightmares/dreams	2.41 (1.53)	1.95 (1.15)	1.99 (1.22)
Reliving	1.86 (1.25)	1.88 (1.19)	1.94 (1.26)
Becoming very upset when reminded	2.73 (1.45)	2.76 (1.28)	2.49 (1.37)
Physical reaction when reminded	2.14 (1.53)	2.14 (1.26)	2.05 (1.28)
Avoided thinking, talking, or having feelings about	2.32 (1.43)	2.74 (1.45)	2.25 (1.26)
Avoided related activities and situations	2.00 (1.45)	2.19 (1.42)	2.12 (1.42)
Trouble remembering aspects	1.82 (1.18)	1.76 (1.21)	1.77 (1.11)
Generic Symptoms			
Loss of interest in activities	2.05[a] (1.29)	2.79[b] (1.49)	2.14[a] (1.39)
Feeling distant, cut off	2.18 (1.26)	2.81[a] (1.35)	2.19[b] (1.30)
Emotional numbing	1.82 (1.30)	2.17 (1.38)	1.73 (1.20)
Foreshortened future	2.05 (1.46)	2.02[a] (1.35)	1.56[b] (0.99)
Difficulty sleeping	3.05 (1.50)	3.10 (1.34)	2.89 (1.50)
Irritable, angry outbursts	2.64 (1.56)	2.95[a] (1.25)	2.25[b] (1.25)
Difficulty concentrating	2.36 (1.26)	2.95[a] (1.50)	2.21[b] (1.22)
Hypervigilance	2.09 (1.38)	1.95 (1.25)	1.74 (1.04)
Easily startled	1.73 (1.24)	2.05 (1.27)	1.79 (1.18)

Note. Means with different superscripts were significantly different, based on omnibus ANOVA and follow-up contrasts. All responses scored from 1 (*not at all*) to 5 (*extremely*).