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PTSD symptoms, disclosure, and relationship distress: Explorations of mediation and associations over time

Sarah B. Campbell[*], **Keith D. Renshaw**

Department of Psychology, George Mason University, United States

Abstract

Emotional numbing symptoms of posttraumatic stress disorder (PTSD) are negatively associated with relationship satisfaction in combat veterans and their romantic partners. Many speculate that one mechanism of this association may be decreased disclosure by veterans, but previous studies lacked appropriate data to test this hypothesis. In a sample of 224 OIF/OEF-era National Guard service members (SMs) and 214 of their romantic partners, we measured SMs' PTSD symptoms. Four to six months later, we assessed both partners' reports of SMs' emotional disclosure and both partners' relationship satisfaction (83 SMs and 91 partners completed Time 2). In a path analysis, SMs' emotional numbing was negatively associated with their later relationship satisfaction. Furthermore, SMs' emotional numbing was negatively associated with both partners' reports of SMs' emotional disclosure. Finally, SMs' emotional numbing exerted significant or nearly significant indirect effects on both partners' relationship satisfaction via decreased emotional disclosure. The findings demonstrated the importance of accounting for both partners' perceptions when studying couple functioning in the context of PTSD or treating PTSD via conjoint intervention.

Keywords

Marital relationship; Military personnel; Stress disorders; Posttraumatic; Communication

1. Introduction

Posttraumatic stress disorder (PTSD) diagnoses among Operation Iraqi Freedom/Operation Enduring Freedom (OIF/OEF) service members have risen dramatically in recent years (Seal et al., 2009). As research in this area has grown, investigators have increasingly focused on the role of interpersonal functioning, particularly the functioning of romantic relationships and marriage, in PTSD development and maintenance (e.g. DOD Task Force, 2007; Lewis, Lamson, & Leseuer, 2012). Much of this research has focused on the bidirectional effects of service members' romantic relationships on their symptoms of PTSD and vice versa. For treatment-seeking veterans, romantic relationship distress predicts persistence and intensification of PTSD symptoms over time (Evans, Cowlishaw, Forbes, Parslow, & Lewis, 2010) and weaker response to PTSD treatment (Evans, Cowlishaw, & Hopwood, 2009).

[*]Corresponding author at: Department of Psychology, George Mason University, 4400 University Drive MSN 3F5, Fairfax, VA 22030-4444, United States. Tel.: +1 917 306 5786; fax: +1 703 993 1359. scampbep@masonlive.gmu.edu (S.B. Campbell).

Compounding the problem, research also shows that romantic partners of service members with PTSD symptoms are more likely to experience relationship and psychological distress (Lambert, Engh, Hasbun, & Holzer, 2012), even when PTSD symptoms are subclinical and measured outside of a treatment context. Thus, romantic relationships and PTSD symptoms have the potential to negatively influence one another, each worsening the other over time. Consequently, research on the specific ways in which PTSD and relationship factors interact is needed to identify the best areas for intervention.

In an effort to address this need, some researchers have begun to explore the associations of PTSD symptoms and romantic relationship functioning at the symptom cluster level of PTSD (e.g. Riggs, Byrne, Weathers, & Litz, 1998; Taft, Schumm, Panuzio, & Proctor, 2008). Although the Diagnostic and Statistical Manual of Mental Disorders–Fourth Edition–Text Revision (DSM-IV-TR) identifies three types of PTSD symptoms (reexperiencing, avoidance, and hyperarousal; American Psychiatric Association, 2000), research has suggested that withdrawal/emotional numbing symptoms load onto a separate factor from trauma-specific avoidance symptoms (King, Leskin, King, & Weathers, 1998), thereby creating four symptom clusters: re-experiencing, hyperarousal, emotional numbing, and trauma-specific avoidance. Other factor analyses of PTSD symptoms have combined emotional numbing with general distress from the hyperarousal cluster to create a new cluster, referred to as dysphoria, as part of an alternate four-factor model (Simms, Watson, & Doebbeling, 2002). Most recently, a five-cluster model of PTSD symptoms has been introduced, which consists of re-experiencing, trauma-specific avoidance, emotional numbing, dysphoric arousal, and anxious arousal (Armour et al., 2012; Armour, Carragher, & Elhai, 2013; Elhai et al., 2011; Pietrzak, Tsai, Harpaz-Rotem, Whealin, & Southwick, 2012). Empirical studies of romantic relationships in the context of PTSD have consistently demonstrated that it is the emotional numbing cluster that is most frequently associated with marital distress by both veteran report (e.g. Cook, Riggs, Thompson, Coyne, & Sheikh, 2004; Lunney & Schnurr, 2007; Taft et al., 2008) and spouse report (e.g. Evans, McHugh, Hopwood, & Watt, 2003; Riggs et al., 1998), with some recent support for negative effects of the dysphoria cluster when the dysphoria model is used (Erbes, Meis, Polusny, & Compton, 2011).

There are various hypotheses as to why symptoms of emotional numbing are so consistently associated with distress in romantic relationships. One frequently discussed possibility is that increased levels of emotional numbing may be associated with decreases in emotion-focused, intimate communication (Allen, Rhoades, Stanley, & Markman, 2010; Gerlock, Grimesey, & Sayre, 2012; Hendrix, Erdman, & Briggs, 1998). In other words, service members' emotional numbing may lead to less intimate disclosure over time, thereby negatively affecting the relationship. Indeed, research and theory suggest that disclosure of self-relevant feelings and information and empathic responding of partners is the primary way in which relationship intimacy is created (Bradford, Feeney, & Campbell, 2002; Reis & Shaver, 1988). Thus, if emotionally numb service members reduce their levels of intimate disclosure to their partners over time, relationship satisfaction may decrease for both service members and their romantic partners.

This hypothesized chain of associations does have some preliminary empirical support. For instance, research has shown that Vietnam veterans with PTSD report lower levels of self-disclosure to romantic partners than Vietnam veterans without PTSD (Carroll, Reuger, Foy, & Donahue, 1985), and in a qualitative study, Dekel, Goldblatt, Kiedar, Solomon, and Polliack (2005) found that military spouses perceived levels of emotional disclosure and communication as critical to their marital adjustment. Moreover, Solomon, Dekel, and Zerach (2008) found that veterans' self-reported self-disclosure significantly mediated the association of veterans' emotional numbing with their relationship satisfaction.

Although informative, these studies were all limited by a cross-sectional approach and a reliance on self-report from only one member of the couple. Exploring the impact of emotional numbing on self-disclosure and relationship satisfaction over time would lend additional weight to the hypothesized chain by establishing temporal precedence among the variables. In addition, simultaneously capturing the perspective and experience of both partners in these relationships would account for the fact that both members of the couple are important to consider, particularly when looking at couple-level outcomes such as relationship satisfaction (Kenny, Kashy, & Cook, 2006). Indeed, one recent study (Erbes, Meis, Polusny, Compton, & Wadsworth, 2012) explored associations of service members' reports of PTSD symptoms with both partners' reports of relationship satisfaction over two time points in a small sample of military couples, and their findings revealed slightly varying effects across partners and time. Similar research that takes into account potential mediators, such as self-disclosure, would further illuminate the mechanisms by which relationship distress is perpetuated in the context of PTSD.

The current study accomplishes this by examining the associations among (a) service members' PTSD symptoms, (b) service members' emotional disclosure to partners, and (c) relationship satisfaction in *both* partners within military couples over two time points. We assessed PTSD symptoms by service members' self-report at one time point, and we then assessed both partners' reports of service members' emotional disclosure and both partners' reports of their relationship satisfaction 4 to 6 months later. We included service members who had been deployed to any area overseas during the OEF/OIF era to provide a range of PTSD symptoms for our analyses, in part because some studies have shown that subclinical PTSD can result in distress and impairment on par with full PTSD (e.g. Marshall et al., 2001; Stein, Walker, Hazen, & Forde, 1997). Moreover, we wanted to be able to capture the breadth of post-deployment relationship experiences. In our analyses, we examined whether service members' baseline PTSD symptoms were associated with *both* partners' later relationship satisfaction, with the hypothesis that baseline symptoms would be associated with both partners' Time 2 satisfaction (Hypothesis 1). Subsequently, we examined the association of service members' individual symptom clusters at baseline with both partners' time 2 satisfaction, with the hypothesis that of the individual symptom clusters, emotional numbing symptoms in particular would be negatively associated with both partners' relationship satisfaction (Hypothesis 2). Finally, we examined whether reports of service members' disclosure mediated these associations, with the hypothesis that such reports would at least partially mediate any significant associations of service members' baseline symptoms with both partners' time 2 satisfaction (Hypothesis 3). In this final

analysis, we also paid particular attention to how service members' and partners' reports of disclosure independently contributed to any mediation.

2. Method

2.1. Procedure and participants

Participants for this study were drawn from a larger study of military couples. Couples were initially recruited through eight optional marriage-education workshops offered to all married or cohabiting Utah National Guard/Reserve (NG/R) members and their spouses/partners between 2007 and 2008. Workshops took place over one weekend (Friday night to Sunday) with paid lodging, and took the place of weekend Guard responsibilities for those who chose to participate in the workshops. Announcements about the data collection for the present study were made at the beginning of the workshops and attendees then chose whether or not to receive packets of measures at the end of the first workshop session. Questionnaires took between 60 and 90 min for each partner, with total compensation of $10 per couple. A total of 490 couples attended the workshops, and of those who attended, 271 service members (55% agreement) and 258 of their partners (53% agreement) elected to participate in the Time 1 data collection for the study. No data were gathered from those who chose not to participate at this initial time point, thus prohibiting any comparisons of those who participated with those who did not.

Of those who participated at Time 1, 224 service members reported at least one deployment during the OIF/OEF era, and 214 of these had partners who also provided data. Thus, these 224 service members (97.8% male) and 214 partners (98.6% female) comprise Time 1 participants for this study.

All couples were subsequently contacted via email 4 to 6 months later to participate in the second time point. Data collection was completely voluntary, with compensation of $15 per couple. Those who did and did not complete Time 2 did not differ on baseline measures of service members' relationship satisfaction ($F[1,209] = 0.23$, $p = .63$, $\eta^2 = .00$), partners' relationship satisfaction ($F[1,209] = 0.02$, $p = .89$; $\eta^2 = .02$), service members' age ($F[1,220] = 0.34$, $p = .56$, $\eta^2 = .00$), partner's age, ($F[1,220] = 0.06$, $p = .81$; $\eta^2 = .00$), service members' deployment location ($F[1,222] = 0.02$, $p = .89$; $\eta^2 = .00$), service members' PTSD ($F[1,213] = 0.96$, $p = .33$; $\eta^2 = .00$), or service members' reports of combat exposure ($F[1,202] = .00$, $p = 1.00$; $\eta^2 = .00$) or post-battle experiences ($F[1,209] = 0.39$, $p = .53$; $\eta^2 = .00$) on the Deployment Risk and Resilience Inventory (King, King, & Vogt, 2003). Those who completed both time points did have slightly longer marriages ($M = 11.74$ years, $SD = 8.7$) than those who completed only Time 1 ($M = 9.39$ years, $SD = 7.23$), ($F(1, 201) = 4.34$, $p < .05$; $\eta^2 = .02$), and did report education closer to completion of an Associate's degree, as compared to those who completed only Time 1 having primarily completed some college, ($F(1, 220) = 4.41$, $p < .05$; $\eta^2 = .02$).

Although data on PTSD symptoms and relationship satisfaction were collected at both time-points from each participant, data regarding service members' disclosure and partners' perception of disclosure were collected only at Time 2. Thus, our sample size for analyses of estimates involving Time 2 data from service members was 83 (37% of the original 224)

and from partners of service members was 91 (43% of the original 214) who experienced an OEF/OIF-era deployment *and* provided data at both Time 1 and Time 2. Of these, 68 service members and partners were part of intact couples, with an additional 15 service members and 23 partners whose spouses/partners chose not to participate at Time 2.

Service members' ages ranged from 20 to 59 years (M = 36.17, SD = 8.5), and the vast majority were White (92.5%), male (98.8%), and members of the Church of Jesus Christ of Latter Day Saints (88.6%), as is the norm for the area in which the data were collected. Of those service members with Time 2 data who gave precise data on their dates of deployment (n = 54), the average time since deployment was nearly 1 year (M = 0.95, SD = 1.30). Service members' mean score on the DRRI combat subscale was 4.23 (SD = 3.89), comparable to or greater than levels reported in the development study of the DRRI, which focused on service members deployed directly to the Gulf War (King, King, Vogt, Knight, & Samper, 2006). Service members' average experience of aftermath battle on the DRRI was similar, at 4.28 (SD = 4.15). Most of the sample had deployed to either Iraq (64.3%) or Afghanistan (20.1%), with 9.6% deployed to other locations in the Middle East (e.g. Turkey, Kuwait) and 3.6% deployed to non-Middle East locations (e.g. Philippines). Although the number of individuals deployed to areas other than Iraq and Afghanistan were low, we retained them in our sample to maximize power, given the small sample size at Time 2. The low numbers prohibited meaningful comparisons across deployment locations, but individuals in all locations reported some level of exposure to potentially traumatic events. [1]

Partners' ages ranged from 18 to 55 (M = 32.84, SD = 7.71), and the vast majority of partners were also White (93.3%) and members of the Church of Jesus Christ of Latter Day Saints (90.5%). All romantic partners in the final sample were female. Almost all participants were married to their partner (96.4%), with a mean length of marriage of 11.74 years (SD = 8.69) reported by service members, and 10.41 years (SD = 8.08) reported by partners.

2.2. Measures

2.2.1. PTSD Checklist (PCL; Weathers, Litz, Herman, Huska, & Keane, 1993)

—The PCL is a 17-item, self-report, Likert-type scale that measures the degree to which participants have been bothered by PTSD symptoms in the past month from 1 (*not at all*) to 5 (*extremely*). Each scale item is derived from a criterion symptom of PTSD as defined by the DSM-IV (American Psychiatric Association, 1994). Respondents receive an overall PTSD severity score, which is the sum total of all item responses. In addition, respondents can receive individual symptom cluster scores, which are calculated by summing the item responses for each cluster. In this study, service members completed the military version of the PCL (PCL-M), which instructs participants to respond to items with regard to "stressful military experiences." Optimal cut-off scores for estimating a clinical diagnosis of PTSD range from 30–34 for service members seen in primary care settings (Bliese et al., 2008) to 50 for large-scale military prevalence studies (Weathers et al., 1993). The scale has high internal consistency, test-retest reliability, and convergent and discriminant validity (Pratt,

[1]All analyses were re-run with those only deployed to Iraq and Afghanistan, and pattern of findings were nearly identical across samples. Results of these additional analyses are available upon request from the first author.

Brief, & Keane, 2006), and in our sample of service members, internal consistency for the PCL-M at Time 1 was excellent (Cronbach's α = .92). Previous factor analyses of competing PTSD models (i.e., DSM 3-cluster, Numbing 4-cluster, Dysphoria 4-cluster, and 5-cluster) with the full sample from this study have shown that the 5-cluster model is the best-fitting model (Rodrigues, 2012). Because this model also preserves the distinctiveness of emotional numbing while accounting for differences between dysphoric and anxious arousal, this model was used for all analyses. Internal consistency for individual cluster scores were adequate (re-experiencing α = .88, situational avoidance α = .73, emotional numbing α = .80, dysphoric arousal α = .80, and anxious arousal α = 86).

2.2.2. Likelihood of Disclosure Scale (LDS; Hoyt et al., 2010)—The LDS is a 10-item Likert-type questionnaire that asks respondents "How likely would you be to discuss the following situations from your deployment with your Spouse/Significant Other?" Respondents then rate items such as "Times when you felt depressed" and "Times when you felt angry" on a scale of 1 (*not at all*) to 5 (*definitely*). Service members completed the standard form of the LDS, and partners completed a partner-report version of their perceptions of service-members' emotional disclosure (e.g. "How likely do you think your spouse or significant other would be to discuss the following situations from his deployment with you?"). The LDS was found to have good convergent and discriminant validity in a previous study with multiple samples including military service members (Hoyt et al., 2010). The self-report and partner-report versions of the LDS showed excellent internal consistency in the current sample of service members (α = .95) and partners (α = .97).

2.2.3. Relationship Assessment Scale (RAS; Hendrick, 1988)—The RAS is a 7-item, Likert-type, self-report measure that assesses relationship satisfaction on a scale of 1 (*not satisfied*) to 5 (*very satisfied*). The scale correlates highly with other commonly used measures of marital satisfaction, and demonstrates good internal consistency and test-retest reliability (Hendrick, 1988; Hendrick, Dicke, & Hendrick, 1998; Renshaw, McKnight, Caska, & Blais, 2011). Hendrick et al. (1998) reported that scores between 3.0 and 3.5 or lower were likely indicative of relationship distress. Both service members and partners completed the RAS, and in this sample, internal consistency was .90 for service members and .93 for partners.

2.3. Analytic plan

Initial bivariate correlations were conducted to explore the basic associations among service members' PTSD symptoms at Time 1, service member and partner report of disclosure at Time 2, and service members' and partners' relationship satisfaction at Time 2. Next, we explored the associations of service members' Time 1 PTSD symptoms with both partners' Time 2 relationship satisfaction simultaneously. To test Hypothesis 1, we conducted an initial path analysis with direct paths from service member total PTSD symptoms at Time 1 to both service member and partner relationship satisfaction at Time 2, modeled as covarying outcomes (see Fig. 1). To test Hypothesis 2 (that emotional numbing would be the individual cluster most strongly associated with relationship satisfaction for both partners), we then conducted a second path analysis exploring the unique contributions of individual PTSD symptom clusters at Time 1 to relationship satisfaction of both partners at Time 2.

Direct paths from each symptom cluster to service members' relationship satisfaction and partners' relationship satisfaction were all specified, creating ten structural paths in total. All relevant covariances were specified (see Fig. 2). Although both of these path models were fully saturated (which prevented the generation of model fit indices), they allowed us to examine path estimates for all relevant paths, which enabled us to address our research questions.

Finally, to test Hypothesis 3 (that service members' emotional disclosure at Time 2 would mediate the associations of service members' Time 1 PTSD symptoms with both partners' Time 2 relationship satisfaction), we followed the general approach recommended by Preacher and Hayes (2004, 2008) by focusing on direct and indirect effects. However, we conducted our analyses with path analysis, rather than regression macros, to accommodate the multivariate outcomes and multiple mediators. Specifically, we estimated direct paths from PTSD symptoms to both service members' and partners' reports of relationship satisfaction, and indirect paths from PTSD symptoms to relationship satisfaction via service members' and partners' reports of disclosure (see Fig. 3). Again, all relevant covariances were specified. To account for our low sample size, we evaluated mediation for each cluster in a separate path model, to limit the number of parameters estimated, with our primary focus on the hypothesized indirect path from emotional numbing symptoms to lower relationship satisfaction via reduced emotional disclosure.

In interpreting any fit indices that were generated, we examined the root mean square error of approximation (RMSEA), standardized root mean square residual (SRMR), Tucker-Lewis index (TLI) and comparative fit index (CFI). Various authors have recommended RMSEA values of .08, .06, or .05 and lower, SRMR values of .05 and lower, TLI values of .95 and higher, and CFI values of .90 or .95 and higher, as indicative of good fit (e.g., Hu & Bentler, 1999; Marsh, Hau, & Wen, 2004). All path analyses were conducted in Amos 18.0. Given the overall lack of differences between those who completed both time points versus those who completed only Time 1, data are likely missing at random. Thus, we used full information maximum likelihood (FIML) to handle missing data.

In addition, given the non-clinical nature of the sample, many of the variables were skewed toward low levels of symptoms and high levels of relationship satisfaction and disclosure. Thus, we utilized the nonparametric Spearman's correlation coefficient when analyzing initial bivariate correlations, and when testing Hypothesis 3, we followed up the initial FIML analyses of direct and indirect effects with a series of bootstrapped analyses. Bollen and Stine (1993) recommend the use of bootstrapping to test both model fit and the significance of individual paths in path analysis with non-normal data. We thus calculated the Bollen-Stine bootstrap *p*-value as an additional fit index and checked all estimates to ensure consistency with the FIML analyses. Bootstrapping utilizes a procedure similar to listwise deletion in regression; thus, only couples with no missing data could be included in these analyses. Because the number of intact couples at Time 2 was even smaller than the total number of individual participants at Time 2, we report results of both the FIML analyses and the bootstrapping analyses.

3. Results

Means and standard deviations of relevant variables are shown in Table 1. The mean score on the PCL-M was at the cut-off score recommended by Bliese et al. (2008) for potential diagnosis of PTSD. Furthermore, 4.5% of our sample of service members had scores at or above 50, the score recommended by Weathers et al. (1993) for estimating prevalence of PTSD. Thus, our sample overall represented a mildly to moderately symptomatic group. Service members and partners generally demonstrated high relationship satisfaction, although 19.7% of service members and 24.4% of partners had scores lower than 3.5 on the RAS, indicating possible relationship distress.

As shown in Table 1, most of the bivariate associations of service members' PTSD symptoms at Time 1 with reports of emotional disclosure and relationship satisfaction from both partners at Time 2 were negative but nonsignificant. Although this general lack of significance may be due, in part, to the low sample size at Time 2, it should be noted that all of the effect sizes were small. However, service members' reports of disclosure were significantly, positively associated with their Time 2 relationship satisfaction and nearly significantly, positively associated with partners' Time 2 relationship satisfaction ($p = .06$). Moreover, partners' reports of service members' disclosure were significantly, positively associated with both partners' Time 2 relationship satisfaction. Notably, service members' and partners' reports of disclosure were not significantly associated ($p = .32$), with a small effect size.

3.1. Path analyses

3.1.1. Total PTSD (Hypothesis 1)—The initial path analysis of Time 1 PTSD to service members' and partners' Time 2 relationship satisfaction was a fully saturated model (3 indicator variables with 6 parameters estimated); thus, no fit indices were generated. Service members' total Time 1 PCL-M score was significantly negatively associated with both service members' and partners' Time 2 relationship satisfaction, with nearly identical effect sizes (see Fig. 1). The covariance between the error terms of both members' relationship satisfaction was also significant.

3.1.2. PTSD clusters (Hypothesis 2)—Once again, the model was fully saturated (7 indicator variables with 28 parameters estimated), and consequently no fit indices were generated. As expected, emotional numbing at Time 1 was significantly negatively associated with service members' Time 2 relationship satisfaction. Contrary to expectations, the negative association with partners' Time 2 relationship satisfaction was not significant in our sample, with $p = .21$ (see Fig. 2). Moreover, the magnitude of the association was similar to those of re-experiencing and dysphoric arousal with partners' relationship satisfaction. Considering the small sample size, the pattern of similar small effects for multiple symptom clusters suggests that a broader range of symptom clusters are associated with more distress in partners. All covariances were significant and large in size.

3.1.3. Mediation by disclosure (Hypothesis 3)—We first examined indirect effects of the emotional numbing cluster (the only cluster with any significant association with relationship satisfaction, and the cluster that was the focus of our a priori hypotheses)

via disclosure, with direct paths still included for all other symptom clusters. In this analysis, service members' self-report of disclosure and partners' report of service members' disclosure were analyzed simultaneously as mediators of the association between service members' Time 1 emotional numbing and service members' and partners' Time 2 relationship satisfaction. The model, shown in Fig. 3, provided an excellent fit for the data (χ^2 [8] = 5.02, p = .76; RMSEA = .00; SRMR = 04; TLI = 1.00; CFI = 1.00). The total effect of Time 1 emotional numbing on service members' Time 2 relationship satisfaction was closely divided among direct effects (λ = −.13) and indirect effects via disclosure (λ = −.18). In addition, despite the lack of a significant association with partners' relationship satisfaction in the initial model that did not include disclosure, there was a notable indirect effect of emotional numbing on partners' relationship satisfaction via disclosure (λ = −.15), with a near-zero direct effect (λ = −.01).

Subsequently, we conducted this same path analysis using bootstrapping with 5000 resamples in the subset of couples with complete data (n = 57). Results were similar to those from the model using the full sample, with the Bollen-Stine bootstrap p = .79, indicating good fit to the data. Moreover, the confidence intervals allowed us to establish that the indirect effect of emotional numbing on service members' relationship satisfaction via disclosure was significant (p < .05), while the indirect effect of numbing on partners' relationship satisfaction via disclosure was nearly significant (p = .07). As expected, the indirect effect of emotional numbing on partners' relationship satisfaction was primarily via partners' report of disclosure (73% of the overall indirect effect). However, the indirect effect of emotional numbing on service members' relationship satisfaction was fairly evenly divided between partner report (44%) and service member self-report (56%) of disclosure. Of note, in this analysis there was also a nearly significant direct path from dysphoric arousal to partners' relationship satisfaction (λ = −.24, p = .06), suggesting that dysphoric arousal is still associated with partners' relationship satisfaction, even after accounting for the influence of other symptom clusters.

Finally, to examine whether these indirect effects were specific to the emotional numbing cluster, we tested models with the two disclosure variables mediating the path from each separate symptom cluster to relationship satisfaction (with direct paths from other symptom clusters to both partners' relationship satisfaction included in the model). These analyses were conducted in order to rule out alternate models, given our small sample and potentially limited power to detect effects. We examined these using both FIML with all participants, and using bootstrapping with 5000 resamples in the subset of couples with full data. In no case was a significant indirect effect detected for any other cluster.

4. Discussion

Consistent with previous literature (e.g., Carroll et al., 1985; Erbes et al., 2012; Evans et al., 2003; Renshaw & Campbell, 2011), we found that overall PTSD symptom severity in service members was significantly negatively associated with both service members' and partners' relationship satisfaction measured 4 to 6 months later. Moreover, using the five-cluster model of PTSD symptoms, only emotional numbing at baseline had a significant negative association with subsequent relationship satisfaction for service

members when examining clusters simultaneously. In addition to supporting the multitude of prior studies that have found cross-sectional links between emotional numbing and relationship satisfaction in either service members or their partners (e.g., Cook et al., 2004; Riggs et al., 1998), our results are also somewhat consistent with those of Erbes et al. (2012), who recently found significant associations of PTSD symptoms with relationship adjustment in both partners in military couples over two time points. Though the dysphoria model used by Erbes et al. (2012) does not differentiate between emotional numbing and dysphoric arousal, the results from our use of the five-cluster model suggest that it may be emotional numbing in particular that has a lasting negative effect on service members' relationship satisfaction.

At the same time, a broader array of PTSD symptoms (re-experiencing, emotional numbing, and dysphoric arousal) appeared to be associated with *romantic partners'* subsequent relationship satisfaction, though no specific cluster reached significance in our sample. The nearly equivalent estimates in the negative association of emotional numbing and dysphoric arousal symptoms with romantic partners' relationship satisfaction are consistent with prior research suggesting that these symptoms are particularly problematic for partners (e.g., Erbes et al., 2012). Further longitudinal research with larger samples is needed to better understand these potential differences. However, the combination of our results with the recent findings of Erbes et al. (2012) suggests that service members' PTSD symptoms may differentially affect service members and their romantic partners in terms of their relationship satisfaction.

To our knowledge, the current study was the first to explore the role of emotional disclosure in mediating the association of PTSD symptoms, particularly emotional numbing, with relationship satisfaction in military couples over time. This examination yielded a more complex and informative picture. Our results revealed negative indirect effects of emotional numbing on *both* partners' relationship satisfaction (significant for service members and nearly significant for partners) via lower levels of emotional disclosure in service members. Indeed, more than half of the overall variance in the association of emotional numbing with service members' satisfaction and nearly all of the overall variance in the association between emotional numbing and relationship satisfaction for partners was indirect, via reports of service members' emotional disclosure. These results replicate prior findings using cross-sectional data from service members only (Solomon, Dekel, & Zerach, 2008), and they extend them by demonstrating that the effects hold up over time, for both partners in the couple (though more clearly so for service members than for partners in our sample). Thus, service members' emotional numbing symptoms impact their subsequent emotional disclosure to their partners, which is in turn associated with both partners' reported relationship satisfaction. Because emotional disclosure and relationship satisfaction were measured at the same time, it is impossible to determine whether change in one preceded the other. Thus, although the results are consistent with our a priori hypotheses and speculation in prior literature about the likely mechanisms by which emotional numbing affects relationship quality, it is also plausible that emotional numbing leads to poorer relationship satisfaction, which in turn reduces the level of emotional disclosure. Future prospective research is needed to examine the temporality of these effects.

Of note, this indirect effect via disclosure was specific to the emotional numbing cluster, suggesting that, although a broader array of symptoms may lead to relationship difficulties for partners, the mechanisms of such effects may differ across symptoms. Such a notion is consistent with prior research demonstrating that PTSD-related hyperarousal symptoms may be associated with relationship distress primarily via an association with increased aggression or substance use (Evans et al., 2003; Savarese, Suvak, King, & King, 2001; Solomon et al., 2008;). With this in mind, the differentiation provided by the 5-cluster model of PTSD symptoms may prove beneficial with regard to studying the mechanisms of negative effects of PTSD on relationships.

It is important to highlight that our inclusion of partners' reports of service members' disclosure added substantively to our findings. Without including partners' report of disclosure in our model, our results would have suggested a smaller mediating effect for service members and almost no mediating effect for partners. Moreover, service member and partner reports of service members' emotional disclosure were not significantly correlated in our sample, suggesting that partners in the same couple may perceive deployment-related emotional disclosure quite differently. It is possible that, in part, this difference reflects the distorted perceptions of emotional disclosure by service members who are more emotionally numb. However, given the nearly total female partner/male service member composition of our sample, it is also possible that partners' perceptions of disclosure were confounded by gender. Previous research has demonstrated that women tend to be more negatively affected by communication avoidance and more likely to value open communication than men (Afifi, Joseph, & Aldeis, 2012; Afifi, McManus, Steuber, & Coho, 2009). Thus, our entirely female partner sample may have been more likely to notice and report declines in disclosure in their symptomatic husbands. Other interpretations of these findings are also plausible. Because these analyses are preliminary, the conclusions are tentative and in need of replication with additional research. Nonetheless, the importance of partners' perceptions demonstrated here is also in line with previous research showing that partners' perceptions of PTSD symptoms and related behaviors are uniquely important factors in predicting romantic relationship dysfunction (e.g. Renshaw, Rodebaugh, & Rodrigues, 2010; Renshaw, Rodrigues, & Jones, 2008). This growing pattern of findings reinforces the importance of considering the perspective of partners when examining the relationships of service members with high levels of emotional numbing.

It is also important to note that the measure of disclosure used for the present study focused on emotional disclosure specifically about deployment. When considering deployment-specific communication, research and theory are mixed on the benefits for service members and their romantic partners in the context of PTSD. Several studies have found that disclosure of deployment-related traumatic events benefits the traumatized individuals themselves, particularly if they receive positive reactions to disclosures (e.g., Bolton, Glenn, Orsillo, Roemer, & Litz, 2003; Koenen, Stellman, Stellman, & Sommer, 2003; Pennebaker & Susman, 1988), whereas the effects of disclosure about deployment-related traumatic events on romantic partners of trauma-survivors may depend on the nature and extent of the disclosure (Campbell & Renshaw, 2012; Erbes, Polusny, MacDermid, & Compton, 2008; Fredman, Monson, & Adair, 2011; Lev-Wiesel & Amir, 2001; Monson, Schnurr, Stevens, & Guthrie, 2004). The focus in our sample on disclosure of emotions, rather than actual events,

may help explain the fairly strong, positive associations of disclosure and relationship satisfaction. These associations mirror findings about emotional disclosure in relationships more generally (Laurenceau, Barrett, & Rovine, 2005), and it is possible that a broader measure of emotional disclosure that is not specific to deployment would yield even stronger findings. Future research of this type would help illuminate the role of emotion disclosure in couples where one member suffers from PTSD symptoms.

Our results may have important clinical implications. Research has documented the breakdown in effective communication that can occur in military couples during and following deployments in more recent operations (Gottman, Gottman, & Atkins, 2011). In addition, couples-based treatments for PTSD tend to focus on repairing and enhancing communication skills (e.g. Fredman et al., 2011), and a recent report of pilot data supporting a promising couples intervention for deployed soldiers (e.g. Gottman et al., 2011) in part emphasizes emotional disclosure and responding from both members of the couple, and stresses the necessity of a dyadic view of communication interactions in couples. The results of the current study support such couples interventions for PTSD and further demonstrate that partners' perspectives of relationship behaviors such as intimate disclosure about major life experiences such as deployment may add valuable information to clinicians' understanding of the day-to-day lives of symptomatic soldiers. In general, additional time spent learning how to disclose to and communicate with a romantic partner only strengthens symptomatic soldiers' primary support network. These skills may then generalize to relationship strength beyond PTSD treatment, setting the stage for stronger military couples even during future stressors.

4.1. Limitations

This study has limitations that are important to consider in interpreting findings. Disclosure was only measured at Time 2, thereby preventing analyses of change in estimates of disclosure from Time 1 to Time 2. Similarly, our analyses focused only on prediction of relationship satisfaction at Time 2, rather than change in relationship satisfaction from Time 1 to Time 2. Furthermore, attrition from Time 1 to Time 2 limited our sample size, and, consequently, our power to find effects. This attrition was likely due primarily to our methods of collecting Time 2 data, which included simple email invitations with minimal compensation provided after service members and spouses completed fairly lengthy questionnaires. The Time 1 data collection, in contrast, occurred during a weekend-long workshop, giving participants ample time to complete the questionnaires while on site. An additional limitation was that the sample was almost entirely composed of male service member-female partner couples (with only female partners at Time 2), thus prohibiting explorations of gender effects that are not already defined by service member/partner status. Moreover, the sample is racially and religiously homogenous, limiting the general-izability of the findings. In addition, our study was conducted using a sample composed entirely of National Guard/Reserve service members. On the one hand, this population is in great need of research attention and clinical support. Nonetheless, our findings may therefore not generalize to active duty service members, who may have different experiences in their romantic relationships. Finally, as noted, the disclosure measure only addressed deployment-related emotional disclosure, which may or may not be reflective of overall emotional

disclosure. Thus, future research should investigate the role of deployment-related versus general emotional disclosure in romantic relationships of service members.

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References

Afifi TD, Joseph A, & Aldeis D (2012). The standards for openness hypothesis: Why women find (conflict) avoidance more dissatisfying than men. Journal of Social and Personal Relationships, 29(1), 102–125. 10.1177/0265407511420193

Afifi TD, McManus T, Steuber K, & Coho A (2009). Verbal avoidance and dissatisfaction in intimate conflict situations. Human Communication Research, 35(3), 357–383. 10.1111/j.1468-2958.2009.01355.x

Allen ES, Rhoades GK, Stanley SM, & Markman HJ (2010). Hitting home: Relationships between recent deployment, posttraumatic stress symptoms, and marital functioning for Army couples. Journal of Family Psychology, 24(3), 280–288. 10.1037/a0019405 [PubMed: 20545401]

American Psychiatric Association, (1994). Diagnostic and statistical manual of mental disorders: DSM-IV (4th ed.). Washington, DC: Author.

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

Armour C, Carragher N, & Elhai JD (2013). Assessing the fit of the dysphoric arousal model across two nationally representative epidemiological surveys: The Australian NSMHWB and the United States NESARC. Journal of Anxiety Disorders, 27(1), 109–115. 10.1016/j.janxdis.2012.10.006 [PubMed: 23254262]

Armour C, Elhai JD, Richardson D, Ractliffe K, Wang L, & Elklit A (2012). Assessing a five factor model of PTSD: Is dysphoric arousal a unique PTSD construct showing differential relationships with anxiety and depression? Journal of Anxiety Disorders, 26(2), 368–376. 10.1016/j.janxdis.2011.12.002 [PubMed: 22204787]

Bliese PD, Wright KM, Adler AB, Cabrera O, Castro CA, & Hoge CW (2008). 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, 76(2), 272–281. 10.1037/0022-006X.76.2.272 [PubMed: 18377123]

Bollen KA, & Stine RA (1993). Bootstrapping goodness-of-fit measures in structural equation models. In: Bollen KA, & Long JS (Eds.), Testing Structural Equation Models (pp. 111–135). Newberry Park, CA: Sage.

Bolton EE, Glenn DM, Orsillo S, Roemer L, & Litz BT (2003). The relationship between self-disclosure and symptoms of posttraumatic stress disorder in peacekeepers deployed to Somalia. Journal of Traumatic Stress, 16(3), 203–210. 10.1023/A:1023754820991 [PubMed: 12816331]

Bradford SA, Feeney JA, & Campbell L (2002). Links between attachment orientations and dispositional and diary – based measures of disclosure in dating couples: A study of actor and partner effects. Personal Relationships, 9(4), 491–506. 10.1111/1475-6811.00031

Campbell SB, & Renshaw KD (2012). Distress in spouses of Vietnam veterans: Associations with communication about deployment experiences. Journal of Family Psychology, 26(1), 18–25. 10.1037/a0026680 [PubMed: 22182339]

Carroll EM, Rueger DB, Foy DW, & Donahoe CP (1985). Vietnam combat veterans with posttraumatic stress disorder: Analysis of marital and cohabitating adjustment. Journal of Abnormal Psychology, 94(3), 329–337. 10.1037/0021-843X.94.3.329 [PubMed: 4031230]

Cook JM, Riggs DS, Thompson R, Coyne JC, & Sheikh JI (2004). Posttraumatic stress disorder and current relationship functioning among World War II ex-prisoners of war. Journal of Family Psychology, 18(1), 36–45. 10.1037/0893-3200.18.1.36 [PubMed: 14992608]

Dekel R, Goldblatt H, Keidar M, Solomon Z, & Polliack M (2005). Being a wife of a veteran with posttraumatic stress disorder. Family Relations, 54(1), 24–36. 10.1111/j.0197-6664.2005.00003.x

DOD Task Force on Mental Health. (2007). An achievable vision: Report of the DoD task force on mental health. Falls Church, VA: Defense Health Board.

Elhai JD, Biehn TL, Armour C, Klopper JJ, Frueh B, & Palmieri PA (2011). Evidence for a unique PTSD construct represented by PTSD's D1–D3 symptoms. Journal of Anxiety Disorders, 25(3), 340–345. 10.1016/j.janxdis.2010.10.007 [PubMed: 21094021]

Erbes CR, Meis LA, Polusny MA, & Compton JS (2011). Couple adjustment and posttraumatic stress disorder symptoms in National Guard veterans of the Iraq war. Journal of Family Psychology, 25(4), 479–487. 10.1037/a0024007 [PubMed: 21639633]

Erbes CR, Meis LA, Polusny MA, Compton JS, & Wadsworth SM (2012). An examination of PTSD symptoms and relationship functioning in U.S. soldiers of the Iraq war over time. Journal of Traumatic Stress, 25(2), 187–190. 10.1002/jts.21689 [PubMed: 22522733]

Erbes CR, Polusny MA, MacDermid S, & Compton JS (2008). Couple therapy with combat veterans and their partners. Journal of Clinical Psychology, 64(8), 972–983. 10.1002/jclp.20521 [PubMed: 18615593]

Evans L, Cowlishaw S, Forbes D, Parslow R, & Lewis V (2010). Longitudinal analyses of family functioning in veterans and their partners across treatment. Journal of Consulting and Clinical Psychology, 78(5), 611–622. 10.1037/a0020457 [PubMed: 20873897]

Evans L, Cowlishaw S, & Hopwood M (2009). Family functioning predicts outcomes for veterans in treatment for chronic posttraumatic stress disorder. Journal of Family Psychology, 23(4), 531–539. 10.1037/a0015877 [PubMed: 19685988]

Evans L, McHugh T, Hopwood M, & Watt C (2003). Chronic posttraumatic stress disorder and family functioning of Vietnam veterans and their partners. Australian and New Zealand Journal of Psychiatry, 37(6), 765–772. 10.1080/j.1440-1614.2003.01267.x

Fredman SJ, Monson CM, & Adair KC (2011). Implementing cognitive-behavioral conjoint therapy for PTSD with the newest generation of veterans and their partners. Cognitive and Behavioral Practice, 18(1), 120–130. 10.1016/j.cbpra.2009.06.007

Gerlock A, Grimesey J, & Sayre G (2012). Caregiver, IPV victim, or both: The complex dynamics of intimate relationships for treatment-seeking veterans with posttraumatic stress disorder. Veterans, PTSD, and building community/VA partnerships to support women and couples experiencing IPV. Presented at the National Conference on Health and Domestic VIolence, San Francisco, CA.

Gottman JM, Gottman JS, & Atkins CL (2011). The Comprehensive Soldier Fitness Program: Family skills component. American Psychologist, 66(1), 52–57. 10.1037/a0021706

Hendrick SS (1988). A generic measure of relationship satisfaction. Journal of Marriage and Family, 50(1), 93–98. 10.2307/352430

Hendrick SS, Dicke A, & Hendrick C (1998). The Relationship Assessment Scale. Journal of Social and Personal Relationships, 15(1), 137–142. 10.1177/0265407598151009

Hendrix CC, Erdmann MA, & Briggs K (1998). Impact of Vietnam veterans' arousal and avoidance on spouses' perceptions of family life. American Journal of Family Therapy, 26(2), 115–128.

Hoyt T, Pasupathi M, Smith BW, Yeater EA, Kay VS, & Tooley E (2010). Disclosure of emotional events in groups at risk for posttraumatic stress disorder. International Journal of Stress Management, 17(1), 78–95. 10.1037/a0017453

Hu L, & Bentler PM (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. Structural Equation Modeling: A Multidisciplinary Journal, 6(1), 1–55. 10.1080/10705519909540118

Kenny DA, Kashy DA, & Cook WL (2006). Dyadic Data Analysis (1st ed.). The Guilford Press.

King DW, King LA, & Vogt DS (2003). Manual for the Deployment Risk and Resilience Inventory (DRRI): A collection of measures for studying deployment-related experiences of military veterans. Boston: National Center for PTSD.

King LA, King DW, Vogt DS, Knight J, & Samper RE (2006). Deployment Risk and Resilience Inventory: A collection of measures for studying deployment-related experiences of military personnel and veterans. Military Psychology, 18(2), 89–120.

King DW, Leskin GA, King LA, & Weathers FW (1998). Confirmatory factor analysis of the clinician-administered PTSD Scale: Evidence for the dimensionality of posttraumatic stress disorder. Psychological Assessment, 10(2), 90–96. 10.1037/1040-3590.10.2.90

Koenen KC, Stellman JM, Stellman SD, & Sommer JF Jr. (2003). Risk factors for course of posttraumtic stress disorder among Vietnam veterans: A 14-year follow up of American legionnaires. Journal of Consulting and Clinical Psychology, 71(6), 980–986. 10.1037/0022-006X.71.6.980 [PubMed: 14622073]

Lambert JE, Engh R, Hasbun A, & Holzer J (2012). Impact of posttraumatic stress disorder on the relationship quality and psychological distress of intimate partners: A meta-analytic review. Journal of Family Psychology, 26, 729–737. [PubMed: 22924422]

Laurenceau J-P, Barrett LF, & Rovine MJ (2005). The interpersonal process model of intimacy in marriage: A daily-diary and multilevel modeling approach. Journal of Family Psychology, 19(2), 314–323. 10.1037/0893-3200.19.2.314 [PubMed: 15982109]

Lev-Wiesel R, & Amir M (2001). Secondary traumatic stress, psychological distress, sharing of traumatic reminisces, and marital quality among spouses of Holocaust child survivors. Journal of Marital and Family Therapy, 27(4), 433–444. 10.1111/j.1752-0606.2001.tb00338.x [PubMed: 11594012]

Lewis M, Lamson A, & Leseuer B (2012). Health dynamics of military and veteran couples: A biopsychorelational overview. Contemporary Family Therapy, 1–18. 10.1007/s10591-012-9193-7

Lunney CA, & Schnurr PP (2007). Domains of quality of life and symptoms in male veterans treated for posttraumatic stress disorder. Journal of Traumatic Stress, 20(6), 955–964. 10.1002/jts.20269 [PubMed: 18157892]

Marsh HW, Hau K-T, & Wen Z (2004). In search of golden rules: Comment on hypothesis-testing approaches to setting cutoff values for fit indexes and dangers in overgeneralizing Hu and Bentler's (1999) findings. Structural Equation Modeling: A Multidisciplinary Journal, 11(3), 320–341. 10.1207/s15328007sem1103_2

Marshall RD, Olfson M, Hellman F, Blanco C, Guardino M, & Streuning EL (2001). Comorbidity, impairment, and suicidality in subthreshold PTSD. The American Journal of Psychiatry, 158, 1467–1473. [PubMed: 11532733]

Monson CM, Schnurr PP, Stevens SP, & Guthrie KA (2004). Cognitive – behavioral couple's treatment for posttraumatic stress disorder: Initial findings. Journal of Traumatic Stress, 17(4), 341–344. 10.1023/B:JOTS.0000038483.69570.5b [PubMed: 15462542]

Pennebaker JW, & Susman JR (1988). Disclosure of traumas and psychosomatic processes. Social Science & Medicine, 26(3), 327–332, doi:16/0277–9536(88)90397–8. [PubMed: 3279521]

Pratt EM, Brief DJ, & Keane TM (2006). Recent advances in psychological assessment of adults with posttraumatic stress disorder. In: Follette VM, & Ruzek JI (Eds.), Cognitive-behavioral therapies for trauma (2nd ed., pp. 34–61). New York, NY: Guilford Press.

Pietrzak RH, Tsai J, Harpaz-Rotem I, Whealin JM, & Southwick SM (2012). Support for a novel five-factor model of posttraumatic stress symptoms in three independent samples of Iraq/Afghanistan veterans: A confirmatory factor analytic study. Journal of Psychiatric Research, 46(3), 317–322. 10.1016/j.jpsychires.2011.11.013 [PubMed: 22154134]

Preacher K, & Hayes A (2004). SPSS and SAS procedures for estimating indirect effects in simple mediation models. Behavior Research Methods, 36(4), 717–731. 10.3758/BF03206553

Preacher K, & Hayes A (2008). Asymptotic and resampling strategies for assessing and comparing indirect effects in multiple mediator models. Behavior Research Methods, 40(3), 879–891. 10.3758/BRM.40.3.879 [PubMed: 18697684]

Reis HT, & Shaver P (1988). Intimacy as an interpersonal process. In: Duck S, Hay DF, Hobfoll SE, Ickes W, & Montgomery BM (Eds.), Handbook of personal relationships: Theory, research, and interventions (pp. 367–389). Oxford, England: John Wiley and Sons.

Renshaw KD, & Campbell SB (2011). Combat veterans' symptoms of PTSD and partners' distress: The role of partners' perceptions of veterans' deployment experiences. Journal of Family Psychology, 25(6), 953–962. 10.1037/a0025871 [PubMed: 21988078]

Renshaw KD, McKnight P, Caska CM, & Blais RK (2011). The utility of the relationship assessment scale in multiple types of relationships. Journal of Social and Personal Relationships, 28(4), 435–447. 10.1177/0265407510377850

Renshaw KD, Rodebaugh TL, & Rodrigues CS (2010). Psychological and marital distress in spouses of Vietnam veterans: Importance of spouses' perceptions. Journal of Anxiety Disorders, 24(7), 743–750. 10.1016/j.janxdis.2010.05.007 [PubMed: 20541905]

Renshaw KD, Rodrigues CS, & Jones DH (2008). 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, 22(4), 586–594. 10.1037/0893-3200.22.3.586 [PubMed: 18729672]

Riggs DS, Byrne CA, Weathers FW, & Litz BT (1998). The quality of the intimate relationships of male Vietnam veterans: Problems associated with posttraumatic stress disorder. Journal of Traumatic Stress, 11(1), 87–101. 10.1023/A:1024409200155 [PubMed: 9479678]

Rodrigues CS (2012). Dyadic examination of posttraumatic stress symptoms, relationship satisfaction, and potential mediators in military couples. Unpublished doctoral dissertation. Salt Lake City, Utah: Department of Psychology, University of Utah.

Savarese VW, Suvak MK, King LA, & King DW (2001). Relationships among alcohol use, hyperarousal, and marital abuse and violence in Vietnam veterans. Journal of Traumatic Stress, 14, 717–732. 10.1023/A:1013038021175 [PubMed: 11776419]

Seal KH, Metzler TJ, Gima KS, Bertenthal D, Maguen S, & Marmar CR (2009). Trends and risk factors for mental health diagnoses among Iraq and Afghanistan veterans using Department of Veterans Affairs Health Care, 2002–2008. American Journal of Public Health, 99(9), 1651–1658. 10.2105/AJPH.2008.150284 [PubMed: 19608954]

Simms LJ, Watson D, & Doebbelling BN (2002). Confirmatory factor analyses of posttraumatic stress symptoms in deployed and nondeployed veterans of the Gulf War. Journal of Abnormal Psychology, 111(4), 637–647. 10.1037/0021-843X.111.4.637 [PubMed: 12428777]

Solomon Z, Dekel R, & Zerach G (2008). The relationships between posttraumatic stress symptom clusters and marital intimacy among war veterans. Journal of Family Psychology, 22(5), 659–666. 10.1037/a0013596 [PubMed: 18855502]

Stein MB, Walker JR, Hazen AL, & Forde DR (1997). Full and partial posttraumatic stress disorder: Findings from a community survey. The American Journal of Psychiatry, 154, 1114–1119. [PubMed: 9247398]

Taft CT, Schumm JA, Panuzio J, & Proctor SP (2008). An examination of family adjustment among Operation Desert Storm veterans. Journal of Consulting and Clinical Psychology, 76(4), 648–656. 10.1037/a0012576 [PubMed: 18665692]

Weathers FW, Litz BT, Herman DS, Huska JA, & Keane TM (1993). The PTSD checklist (PCL): Reliability, validity, and diagnostic utility. In Presented at the annual meeting of the International Society for Traumatic Stress Studies San Antonio, TX.

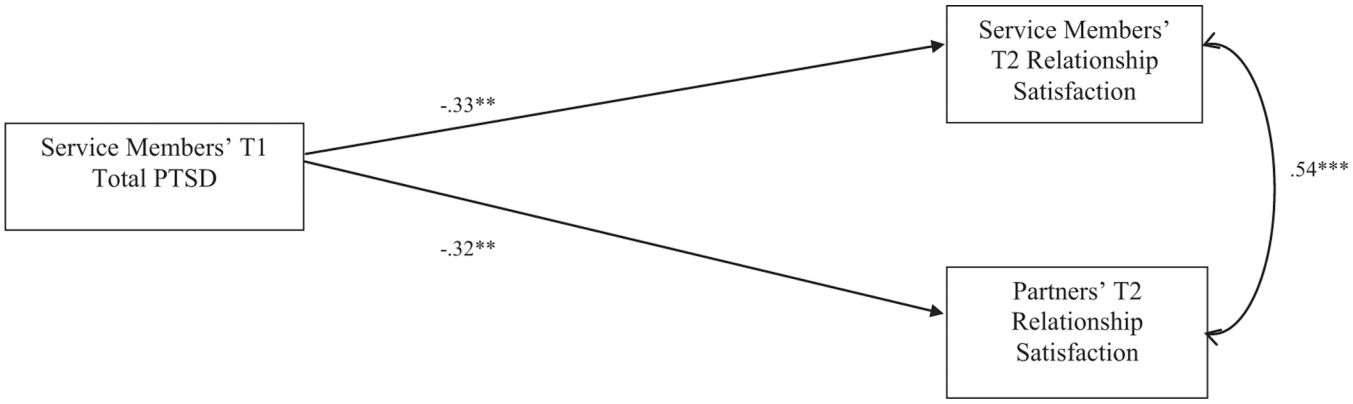

Fig. 1.

Path model examining associations of service members' Time 1 total PTSD symptom severity with service members' and partners' Time 2 relationship satisfaction. Standardized path estimates are shown. *$p < .05$. **$p < .01$. ***$p < .001$.

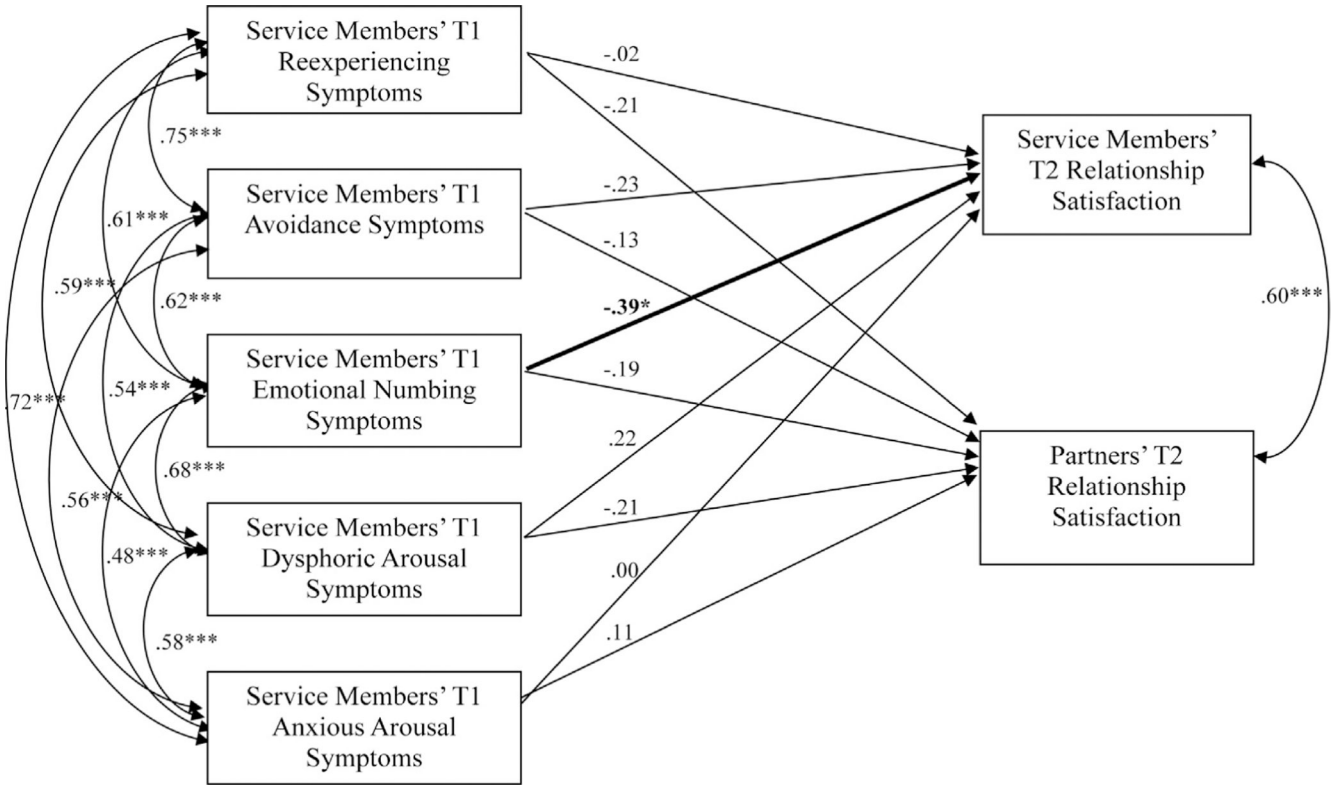

Fig. 2.

Path model examining associations of service members' Time 1 PTSD symptom cluster severity with service members' and partners' Time 2 relationship satisfaction. Standardized path estimates are shown. *$p < .05$. **$p < .01$. ***$p < .001$.

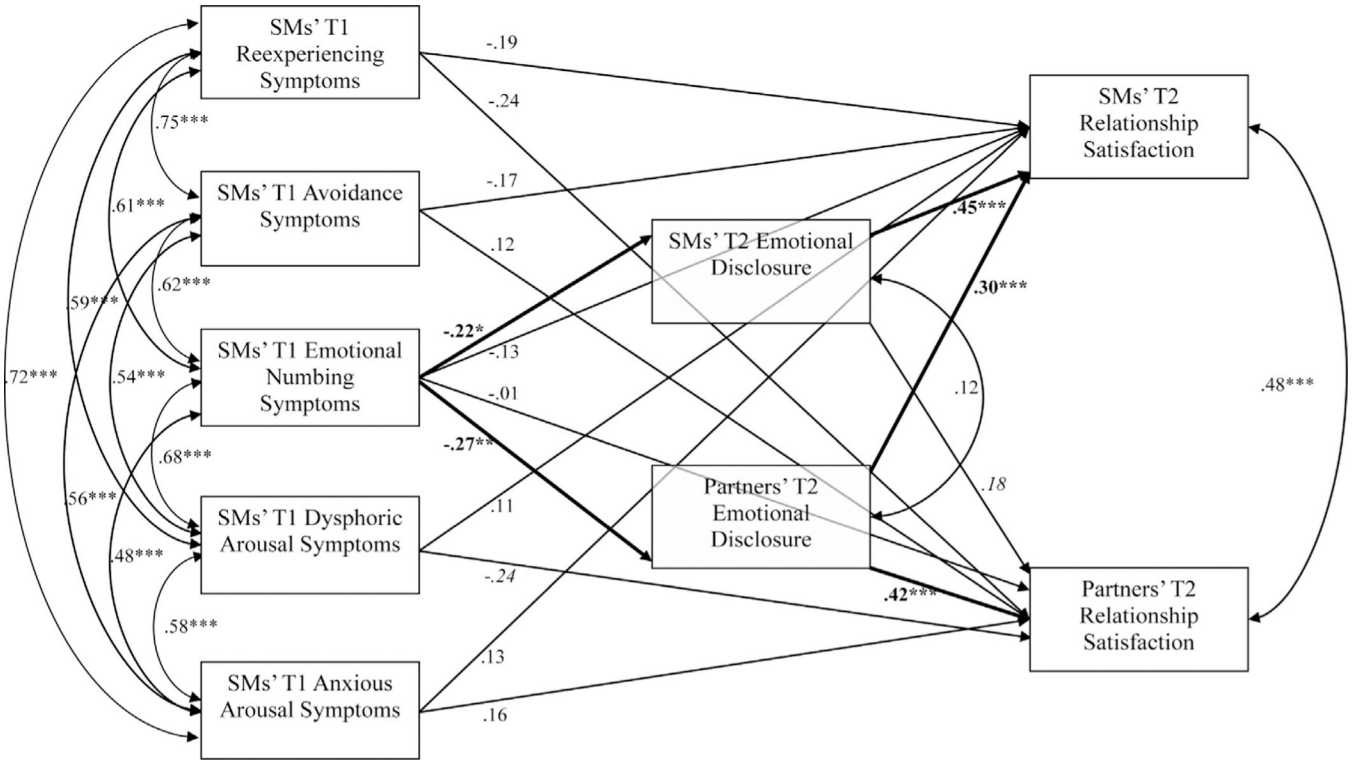

Fig. 3.

Path model examining service members' report of and partners' perceptions of service members' Time 2 deployment-related emotional disclosure as mediators of the associations of service members' Time 1 emotional numbing with service members' and partners' Time 2 relationship satisfaction. Standardized path estimates are shown. *$p < .05$. **$p < .01$. ***$p < .001$.

Table 1

Means, standard deviations, and bivariate correlations.

	Mean	SD	1	2	3	4	5	6	7	8	9
1. Service member PCL-M total score	29.48	10.60									
2. Service member reexperiencing	8.23	3.59	.80***								
3. Service member avoidance	3.04	1.50	.71***	.66***							
4. Service member emotional numbing	7.72	3.34	.68***	.28*	.45***						
5. Service member dysphoric arousal	6.32	2.87	.80***	.45***	.42***	.64***					
6. Service member anxious arousal	4.17	2.04	.66***	.65***	.39***	.21^	.39***				
7. Service member emotional disclosure	34.99	9.43	−.03	.05	−.01	−.20	−.04	−.11			
8. Partner report of service member emotional disclosure	36.74	11.94	−.11	−.04	.03	−.10	−.17	−.15	.13		
9. Service member relationship satisfaction	4.18	.73	−.19	−.20	−.23*	−.20	−.08	−.15	.52***	.32*	
10. Partner relationship satisfaction	4.23	.82	−.14	−.08	−.02	−.13	−.23	−.08	.24^	.55***	.52***

Note. PCL-M, PTSD checklist – Military version.

^ $p \leq .06$,

* $p < .05$,

*** $p < .001$.

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