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## Secondary Traumatization of Partners of War Veterans: The Role of Boundary Ambiguity

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The existing literature has shown that war veterans' posttraumatic stress disorder (PTSD) symptoms are associated with a higher level of distress in their female partners. However, less agreement exists regarding the sources of this distress and the mechanism by which this process occurs. The current study examined the consequences of Israeli war veterans' PTSD on their female partners, as manifested by the females' PTSD symptoms, mental health status, and functioning, while taking into account females' earlier traumatic events. Using the theory of ambiguous loss, it also suggested boundary ambiguity as a mediating variable by which the PTSD of the male veteran is transmitted to his female partner. Participants were 300 men who had served in the 2006 Israel-Lebanon War and their female partners. Results revealed direct associations between males' PTSD and their female partners' PTSD, functioning, and mental health. In addition, boundary ambiguity mediated the association between males' PTSD and females' adjustment. Finally, females' own earlier traumatic events were directly associated with their own PTSD symptoms. Implications of this model for intervention and research are further discussed.

*Keywords:* secondary traumatization, ambiguous loss, PTSD, marriage, veterans

Following military service and participation in combat, anywhere from 2% to 17% of veterans in the armed forces are reported to suffer from posttraumatic stress disorder (PTSD; Creamer, Wade, Fletcher, & Forbes, 2011; Richardson, Frueh, & Acerno, 2010; Solomon & Horesh, 2007). According to the *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV)*, one of three possible symptom clusters typifies PTSD: intrusion, avoidance, and hyper-arousal (American Psychiatric Association, 1994). In the recently revised *Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-V)*, the avoidance/numbing cluster has been divided into two distinct clusters: avoidance and persistent negative alterations in cognitions and mood (American Psychiatric Association, 2013).

It has been documented that PTSD has significant repercussions within the veterans' families, specifically impacting veterans' marriages and their family members' mental welfare (Renshaw, Rodrigues, & Jones, 2008; Riggs, Byrne, Weathers, & Litz, 1998). Indeed, two recent meta-analyses suggest that symptoms of PTSD

are negatively associated with outcomes for the individual's intimate partner (Lambert, Engh, Hasbun, & Holzer, 2012; Taft, Watkins, Stafford, Street, & Monson, 2011), and that spouses of war veterans with PTSD have higher levels of posttraumatic symptoms, anxiety, and depression (Beckham, Lytle, & Feldman, 1996; Calhoun, Beckham, & Bosworth, 2002; Evans, Mchugh, Hopwood, & Watt, 2003) than do spouses of war veterans without PTSD. Research has also found that spouses of veterans with PTSD demonstrate lower quality of marital relations in comparison to spouses of war veterans without PTSD (Beckham et al., 1996; Dirkzwager, Bramsen, Adèr, & van der Ploeg, 2005). Moreover, the updated diagnostic criteria of PTSD in the recently published *DSM-V* includes indirect exposure—such as learning that a close friend, relative, or spouse was exposed to trauma—as an explicit criteria of how an individual can be traumatized (American Psychiatric Association, 2013).

Several studies have examined empirical mechanisms by which distress is transmitted from the veterans to their spouses (Calhoun et al., 2002; Dekel, Goldblatt, Keidar, Solomon, & Polliack, 2005; Renshaw et al., 2011). However, there are still concerns that need to be further understood and explored regarding the effects of a veteran's PTSD on his partner. Some researchers measure the effects of a veteran's PTSD on his spouse via her specific PTSD symptoms (Figley, 1989), which measurement is in accordance with the narrower definition of secondary traumatization (ST). Others, however, use a broader term, recognizing secondary traumatization as a reflection of other distress symptoms in addition to PTSD among spouses, including indicators such as marital quality (Galovski & Lyons,

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2004). In this study, the broader definition was used, and secondary traumatization was measured via females' PTS symptoms, and by additional general measures of females' mental health and functioning. There is controversy in the literature regarding whether spouses' PTSD symptoms are the result of the direct impact of the veterans' PTSD or are related to the women's own earlier traumatic events (Renshaw et al., 2011).

This study's first aim was to document the consequences of Israeli war veterans' PTSD on their partners, as manifested by the females' PTSD symptoms, mental health status, and functioning, while taking into account their earlier traumatic events. The second aim was to use the theory of ambiguous loss and suggest boundary ambiguity as a mediating variable through which the PTSD of the veteran is transmitted to his partner.

### The Effects of Veteran's PTSD on His Partner

As indicated earlier, many studies have already found that veterans' PTSD is associated with wives' mental distress. Spouses of war veterans with PTSD have reported having higher levels of anxiety, depression, and poorer mental health (Beckham et al., 1996; Calhoun et al., 2002; Evans et al., 2003) than spouses of war veterans without PTSD.

Violence, and violent tendencies, which have been documented among war veterans with PTSD, may also cause additional distress in veterans' wives (Beckham, Feldman, Kirby, Hertzberg, & Moore, 1997; Taft et al., 2009). Having a partner with PTSD has been shown to lead to pronounced increases in conflict, anger, and systolic blood pressure in response to conflict for both members of the couple (Caska et al., 2014). High distress and having too much responsibility can lead to sleep problems, challenges in intimacy, and additional difficulties in partners' functioning (Dirkzwager et al., 2005; Nelson Goff et al., 2006; Taft et al., 2011).

Attempts have been made to examine whether the wives in these couples suffer from PTSD specifically as a result of living with their afflicted partners. A study among former prisoners-of-war found that the more severe the husbands' PTSD, the more the wives were at risk for ST and other psychiatric symptoms (Greene, Lahav, Bronstein, & Solomon, 2014). In addition, a study of Iranian military veterans found that the severity of the PTSD in the veterans predicted the degree of traumatic stress in their wives (Ahmadi, Azampoor-Afshar, Karami, & Mokhtari, 2011). When examining partners' ratings of veterans' PTSD severity, research found a positive correlation between the veteran's self-reports and his partner's own self-reported PTSD symptoms (Gallagher, Riggs, Byrne, & Weathers, 1998).

Recently, however, some findings suggest that the source of wives' PTSD is not their veteran spouses' distress but rather their own preexisting distress. In a study examining PTSD in the wives of male service members who had elevated symptoms on measures assessing PTSD, researchers found that less than 20% of the women who had endorsed symptoms of PTSD wholly attributed their symptoms to their husbands' military experiences; rather, they presented them as stemming from their own life events (Renshaw et al., 2011). Based on this literature, the study's first aim was to document the consequences of Israeli war veterans' PTSD on their female partners, while taking into account the female partners' earlier traumatic events.

### Ambiguous Loss

According to ambiguous loss theory (Boss, 1999), ambiguous loss is a situation in which a loved one is physically absent but psychologically present, or physically present but psychologically absent (Boss & Couden, 2002). Ambiguous loss is not a clear or final loss—the way death is—where there are well-defined mourning processes, support systems, and community rituals to comfort the mourner. Rather, closure surrounding the loss is impossible, and family members are forced to live in an unending state of both absence and presence (Boss, 2006, 2010). This ambiguity can result in depression and interfamily conflict, particularly as different family members may have different perceptions as to the nature of the loss of their loved one (Boss, 1999).

PTSD among veterans has already been conceptualized as a case of ambiguous loss, in which the husband is physically present but psychologically absent (Dekel et al., 2005; Faber, Willerton, Clymer, MacDermid, & Weiss, 2008; Huebner, Mancini, Wilcox, Grass, & Grass, 2007). It has been found that the veteran's chronic PTSD, his unclear mental status, and his unstable functioning leads to a sense of boundary ambiguity within his family. Spouses have reported on not knowing what the veterans' roles were within the family system, on not being clear as to who was responsible for performing which tasks and assuming which roles, and on feeling that their ability to make decisions and life choices was put on hold. The wife feels that her life revolves around her husband's illness, and she struggles between fusing with her husband versus maintaining her independent needs; ambiguity around boundaries in the family is evident (Dekel, Goldblatt, Keidar, Solomon, & Polliack, 2005). This ambiguity can lead to depression and loneliness (Boss & Greenberg, 1984).

In the current study model (see Figure 1), we suggest examining boundary ambiguity quantitatively as a mechanism by which the PTSD of the veteran is transmitted to his partner. Based on existing theory, we suggest that there will be an indirect contribution of males' PTSD to females' PTSD—as well as to their functioning and mental health—via the females' ambiguous loss. We hypothesize that veteran's higher PTSD will be associated with higher boundary ambiguity, thus resulting in the partner's higher PTSD symptoms, lower mental health, and lower functioning.

### Method

Three hundred male war veterans and their female wives or partners participated in the study. In order to track those soldiers most likely to experience distress/PTSD symptoms as a consequence of their active service in the war, the study group included all male soldiers who contacted the Israel Defense Force's (IDF's) mental health services due to their service. The 2006 Lebanon War was a 33-day military conflict between Hezbollah paramilitary forces in Lebanon and the IDF. However, since veterans who request mental help services might differ in background variables (Pietrzak, Johnson, Goldstein, Malley, & Southwick, 2009) as well as in distress (Brown, Creel, Engel, Herrell, & Hoge, 2011; Erbes, Westermeyer, Engdahl, & Johnsen, 2007) from veterans who do not request help, we doubled the sample with an additional matched group of veterans who served in the war but did not request mental health services. Indeed, as reflected in the administered questionnaires, the level of PTSD symptoms of the study group was significantly higher ( $M = 2.23$ ,  $SD = .82$ ) than that of

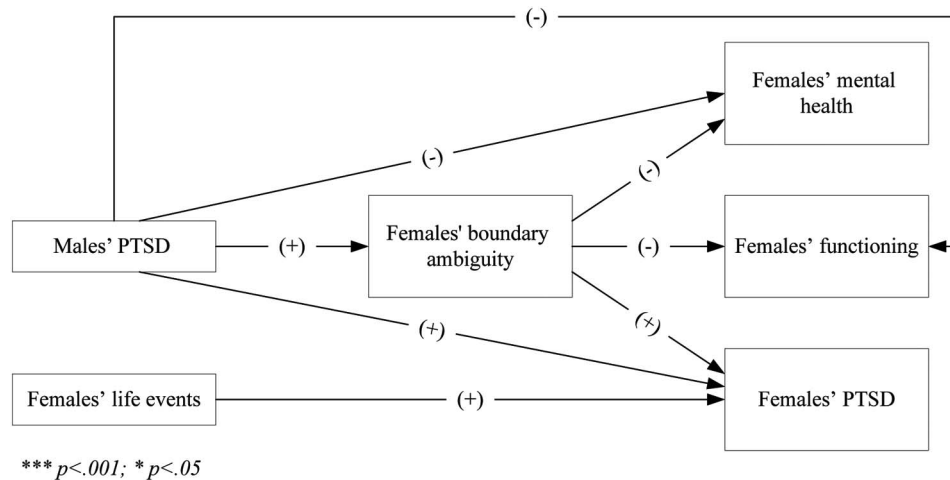


Figure 1. Structural hypothesized equation model of associations among males' PTSD, females' life events, ambiguous loss, mental health, functioning, and PTSD. PTSD = posttraumatic stress disorder.

the control group ( $M = 1.28$ ,  $SD = .38$ ,  $t(298) = 12.81$ ,  $p < .001$ ). Comparing the sociodemographic information of the veterans in the two groups revealed that there were no differences between them in terms of country of birth, education, rank, and military role (combat vs. noncombat), thus allowing us to combine the two groups into one.

The wives or female partners of the veterans also did not differ from one another in terms of age or level of education. Likewise, the study and control groups had no significant differences between them in terms of marital status, length of relationship, and number of children. The average age of the male veterans was 35.53 years old (ranging from 27 to 61 years,  $SD = 5.45$ ), and the average age of their partners was 33.8 years (ranging from 24 to 62 years,  $SD = 5.57$ ). The majority of male veterans and their partners were born in Israel (87% and 85.8%, respectively). The average number of years of education among males was 14.89 (ranging from 10 to 25 years,  $SD = 2.83$ ), and 15.21 (ranging from 11 to 22 years,  $SD = 2.44$ ) among females.

The majority of both males and females were employed (68% and 67%, respectively); around 15% of the veterans and 18% of the wives/partners were students. The majority of couples reported that they were married (79%), while the remainder reported cohabiting (21%). On average, couples reported having been in a relationship with each other for 6.5 years (ranging from 1 to 37 years,  $SD = 5.34$ ) and had an average of 1.57 children (ranging from 0 to 10 children,  $SD = 1.65$ ). The majority of veterans (61.1%) reported that their income was above average, while the rest (38.9%) reported their income as average or below. Most of the veterans (89.3%) held combat positions; the rest (10.7%) held noncombat positions. Their military ranks included officers (14%) and enlisted men (86%).

## Procedures

Participant recruitment began from an IDF-provided list of veterans who had requested mental health services from the IDF in the aftermath of the second Israel-Lebanon war. Research assistants telephoned all potential participants and asked whether they

were in a heterosexual relationship that had been in existence for at least 1 year. Of these veterans, 369 males fulfilled this criterion. The aims of the study were explained to them, and their consent to participate and to recruit their wives/partners into the study was obtained. The couples were sent questionnaires via the Internet or by mail. Of the 369 couples, 150 completed the surveys, leading to a 40% response rate.

The control group was comprised of randomly selected individuals—obtained from another IDF-provided list of 5,000 soldiers who participated in the Second Lebanon War—who were from the same military units as the study group but had not asked for mental health assistance. Every fifth soldier on this list was contacted at random and invited to participate in the study. Collection ceased when the researchers had gathered 150 couples. Approximately 30% of the couples who were contacted agreed to participate in the study. Males were matched in age and rank. All 300 couples were compensated, with each couple receiving \$25 in total for their participation. In instances where a participating veteran or his partner displayed emotional or marital distress, the research team referred the individual to a treatment facility. The Helsinki Committee of the Medical Corps of the IDF approved the proposal for this study.

## Measures

*Sociodemographic variables* were collected for all participants for the following variables: age, gender, country of birth, education, religiosity, income, length of relationship with partner, number of children, rank, and military role of the veteran.

**The Traumatic Life Events Questionnaire.** The occurrence of earlier traumatic events was measured using the Traumatic Life Events Questionnaire (Solomon, 1995), which provides a standard list of 13 traumatic life events (e.g., car accidents, etc.). For each item, the women were asked whether she had experienced the event at some point in their lives and, if so, when. The total score of the mean number of traumatic events the women had experienced was calculated. This questionnaire has been used exten-

sively to measure the occurrence of earlier traumatic events in various studies (Dekel & Hobfoll, 2007).

**The PTSD Inventory.** PTSD was measured using the PTSD Inventory (Solomon et al., 1993), a 17-item, self-reported symptom scale that corresponds to the *DSM-IV* (American Psychiatric Association, 1994) symptom clusters. Male participants were asked to indicate the frequency with which they had experienced each symptom in relation to their wartime service during the preceding month, using a four-point scale ranging from *never* (1) to *very often* (4). Women's secondary traumatic stress was measured using a similar questionnaire, and they were asked about experiencing each symptom in relation to their partners' wartime service. The total score of the PTSD was calculated as the mean score of the 17 items of this questionnaire. This scale has been used widely with Israeli populations and found to be highly valid and reliable. Cronbach's alpha reliability estimates for the current study were strong, with values of .96 and .90 for PTSD symptom total scores for males and females, respectively.

**The Life Functioning Scale.** The level of females' daily functioning was assessed by the Life Functioning Scale, derived from the Psychotherapy Outcome Assessment and Monitoring System—Trauma Version (POAMS-TV; Green, Lowry, & Kopta, 2003). Respondents were asked to rate the level of functioning in each of 11 areas related to their daily life (e.g., work, social relationships, and physical health), over the previous 2 weeks, on a five-point Likert-scale ranging from *barely functioning* to *functioning very well*. The scores of the level of females' daily functioning were calculated as the mean score of the 11 items of this questionnaire: The higher the score, the greater the level of females' daily functioning. In this study, Cronbach's alpha reliability estimate was .90.

**The Mental Health Inventory.** The women's mental health was assessed using the brief version of the Mental Health Inventory (Veit & Ware, 1983). The original inventory consists of 38 items, while the brief version includes 15 items (Florian & Drori, 1990). In this study, respondents were asked to respond to each item by rating on a six-point frequency or intensity scale how they had been feeling during the past month. An example of a positive affect item was: "How much of the time, during the past month, have you felt calm and peaceful?" An example of a negative item was: "How often did you feel lonely?" Possible answers included 1 = *all of the time*, 2 = *most of the time*, 3 = *a good bit of the time*, 4 = *some of the time*, 5 = *a little of the time*, 6 = *none of the time*. The scores of the positive affect items (1–3, 7, 8, 11, 13) were reverse scored. The scores of the women's mental health were calculated as the mean score of the 15 items of this questionnaire: The higher the score, the better the mental health. In the current study, Cronbach's alpha reliability estimate was .94.

**The Boundary Ambiguity Scale.** Boundary ambiguity was measured with the Boundary Ambiguity Scale (BAS). The questionnaire was originally developed by Boss and colleagues (1990) and adapted by Kaplan and Boss (1993). This questionnaire has six different versions, the one selected being in accordance with the type of study population being examined. In the present study, boundary ambiguity was assessed via use of the Boundary Ambiguity Scale #6: For caregivers of patients with dementia, the version that was found most appropriate for this study (Items 1–13; e.g., "I feel like I have no time to myself"; Boss, Greenberg, & Pearce-McCall, 1990). Items 14–17 were taken from the version

designed for spouses of veterans missing in action ("I worry whether my partner obeys doctors' orders"; "I fully understand the situation of my partner"). Items 18–19 were taken from the version designed for widows ("I think that if I were not nearby, my partner would not obey doctors' orders," and "I believe that I know what is good for my partner"). Women were asked to rate on a 5-point Likert scale their boundary ambiguity, using responses ranging from 1 (*not at all*) to 5 (*totally agree*). The total score of boundary ambiguity was calculated as the mean score of the 19 items on this questionnaire: The higher the score, the greater the boundary ambiguity. Cronbach's alpha reliability estimate was .89.

## Data Analysis: Missing Data

Preliminary analyses of the participants revealed that 84% of the variables and 87% of the cases contained incomplete data (ranging from <1% to 15% across variables). We therefore performed Little's Missing Completely At Random (MCAR) test that revealed that the data were not missing completely at random. We then employed multiple imputation (MI), which is the preferred technique for handling missing data. MI involves the generation of multiple "complete" datasets by imputing possible values for missing values and then provides pooled estimates based on combining results across the complete datasets. After analyzing the pattern of missingness, the Markov chain Monte Carlo (MCMC) method of the MI procedure of Statistical Package for the Social Sciences (SPSS) was applied to create 50 imputed datasets concerning the respondents. The resultant sample size for the final analyses was  $N = 300$ .

The variables in the imputation model were males' PTSD, and females' life events, boundary ambiguity, mental health, functioning, and PTSD. Bivariate associations were examined using pooled data from cross-tabulations, and  $\chi^2$  statistics were computed using an online interactive calculation tool (Preacher, 2001). Multivariable analysis of pooled data used generalized linear modeling, specifying a main effects only model with robust covariance matrix estimation. We used a hybrid method for parameter estimation, where Fisher scoring iterations were performed prior to using the Newton-Raphson method, and maximum iterations were set to 100. The use of pooled data produced a similar pattern of results to which was found when analyzing the original data, so only the pooled data are presented here.

All hypotheses and research questions were treated via structural equation modeling (SEM) using the IBM SPSS Amos 22.0.0 for Windows software package. Two main advantages of SEM are comprehensive assessment of an a priori specified model, which is clearly advantageous for the model specified in our study (see Figure 1); likewise, SEM corrects for error variance, and thus more accurately identifies parameters of interest.

We used frequently reported fit indices: model chi-square, the root mean square error of approximation (RMSEA; Browne & Cudeck, 1993), and the normed fit index (NFI; Bentler & Bonett, 1980). For the RMSEA statistic, lower values indicate a better model fit, where the value .08 is the traditional threshold for an acceptable fit (and .05 for a close fit; Hu & Bentler, 1998). For NFI statistics, better-fitting models achieve higher values, with .90 and .95 as traditional thresholds for acceptable and close model fits, respectively (Bentler & Bonett, 1980). As shown in Figure 1, the hypothesized model contained six observed variables: males'



PTSD, and females' life events, boundary ambiguity, mental health, functioning, and PTSD.

Bootstrapping procedures have been advocated as an approach that is well suited to testing hypothesized indirect effects (MacKinnon, Lockwood, & Williams, 2004; Preacher & Hayes, 2008; Shrout & Bolger, 2002). Therefore, bootstrapping procedures were employed to test our hypotheses. To test the indirect effects of males' PTSD on females' mental health, functioning, and PTSD, we used bootstrapping (500 resamples) to generate bias-corrected confidence intervals and then examined those confidence intervals to determine the significance of the indirect paths (MacKinnon et al., 2004; Shrout & Bolger, 2002). In accordance with current recommendations, we reported unstandardized indirect effects and bootstrapped confidence intervals (e.g., Rucker, Preacher, Tomala, & Petty, 2011).

## Results

About 27% of the males ( $N = 81$ ) and 10% of the females ( $N = 30$ ) were classified as suffering from probable rates of PTSD.

Table 1 shows the correlation matrix between the study variables.

The majority of correlations between variables were found to be highly significant. As expected, there was a high positive significant correlation between males' PTSD and females' PTSD, mental health, and functioning. In addition, females' ambiguous loss was associated with males' PTSD and females' secondary traumatization. Finally, females' earlier traumatic events were associated with females' secondary traumatization.

In light of these correlations, a maximum likelihood estimation was employed to estimate the hypothesized research model. The structural model demonstrated a close model fit,  $\chi^2(3) = 10.66$ ,  $p < .05$ , RMSEA = .08 (90% CI [.04, .16]), NFI = .98. A significant  $\chi^2$  suggests that the model does not fit the sample data. In contrast, a nonsignificant  $\chi^2$  is indicative of a model that fits the data well. However, the  $\chi^2$  has been found to be too sensitive to sample size; that is, a larger sample increases the probability of the test being significant (Kline, 2011, p. 14). The  $\chi^2$  also tends to be greater when the number of observed variables increases. Consequently, a nonsignificant  $p$  level is uncommon, although the model may be a close fit to the observed data. For this reason, the  $\chi^2$  cannot be used as a sole indicator of model fit in SEM.

We hypothesized that males' PTSD would be directly associated with females' PTSD, females' mental health, and females' functioning. Indeed, this hypothesis was confirmed. Males' higher PTSD was associated with females' higher PTSD ( $B = .36$ ,  $\beta =$

.38,  $Z = 7.04$ ,  $P = .001$ ), females' lower functioning ( $B = -.15$ ,  $\beta = -.16$ ,  $Z = -2.77$ ,  $P = .05$ ), and females' lower mental health ( $B = -.17$ ,  $\beta = -.18$ ,  $Z = -3.07$ ,  $P = .05$ ).

In addition, as can be seen in Figure 2, males' PTSD was positively associated with females' ambiguous loss ( $B = .41$ ,  $\beta = .44$ ,  $Z = 8.50$ ,  $P = .001$ ), and as hypothesized, females' ambiguous loss was negatively associated with females' mental health ( $B = -.30$ ,  $\beta = -.33$ ,  $Z = -5.50$ ,  $P = .001$ ), females' functioning ( $B = -.31$ ,  $\beta = -.32$ ,  $Z = -5.38$ ,  $P = .001$ ), and females' PTSD ( $B = .24$ ,  $\beta = .25$ ,  $Z = 4.69$ ,  $P = .001$ ).

Finally, we examined the direct association between females' life events and females' PTSD. The findings revealed that females' life events were positively associated with females' PTSD ( $B = .15$ ,  $\beta = .11$ ,  $Z = 2.57$ ,  $P = .05$ ). The indirect effect of males' PTSD on females' mental health, through females' ambiguous loss, was significant (standardized indirect effect of males' PTSD =  $-.14$ ; 95% CI  $[-.21, -.09]$ ). The bootstrapping procedures revealed significant indirect effects of males' PTSD on females' functioning, through females' ambiguous loss (standardized indirect effect of males' PTSD =  $-.14$ ; 95% CI  $[-.22, -.07]$ ). The indirect effect of males' PTSD on females' PTSD, through females' ambiguous loss, was also significant (standardized indirect effect of males' PTSD =  $.11$ ; 95% CI  $[.06, .18]$ ).

## Discussion

The findings of this study were consistent with our initial hypotheses and revealed a direct association between the severity of veterans' PTSD and their female partners' adjustment. A veteran's higher PTSD was associated with his partner's higher distress, as manifested in her higher levels of PTSD, and lower levels of functioning and mental health. These findings support the existing literature on secondary traumatization, which has shown that the severity of symptoms in the PTSD patient is correlated positively with caregiver burden, and is related to decreased relationship satisfaction (Calhoun et al., 2002; Hamilton, Nelson Goff, Crow, & Reisbig, 2009; Renshaw, Rodebaugh, & Rodrigues, 2010). These findings are also consistent with findings on partners of peacekeepers (personnel deployed by international organizations such as the United Nations) who reported more sleep and somatic problems (Dirkzwager et al., 2005). They are also consistent with earlier findings on spouses of veterans with PTSD who reported high levels of nonspecific distress: in fact, half of this group stated that they were on the verge of a nervous breakdown (Jordan et al., 1992).

Table 1  
Descriptive Statistics and Pearson Product-Moment Correlations for Study Variables

Variable	<i>M</i>	<i>SD</i>	1	2	3	4	5
1. Males' PTSD	1.76	.80	—				
2. Females' life events	.16	.14	.08	—			
3. Females' ambiguous loss	2.12	.64	.44**	.13*	—		
4. Females' mental health	4.37	.74	-.32**	-.15**	-.40**	—	
5. Females' functioning	2.95	.63	-.30**	-.19**	-.39**	.66**	—
6. Females' PTSD	1.45	.47	.49**	.21**	.43**	-.58**	-.42***

Note. PTSD = posttraumatic stress disorder.

\*  $p < .05$ . \*\*  $p < .01$ . \*\*\*  $p < .001$ .

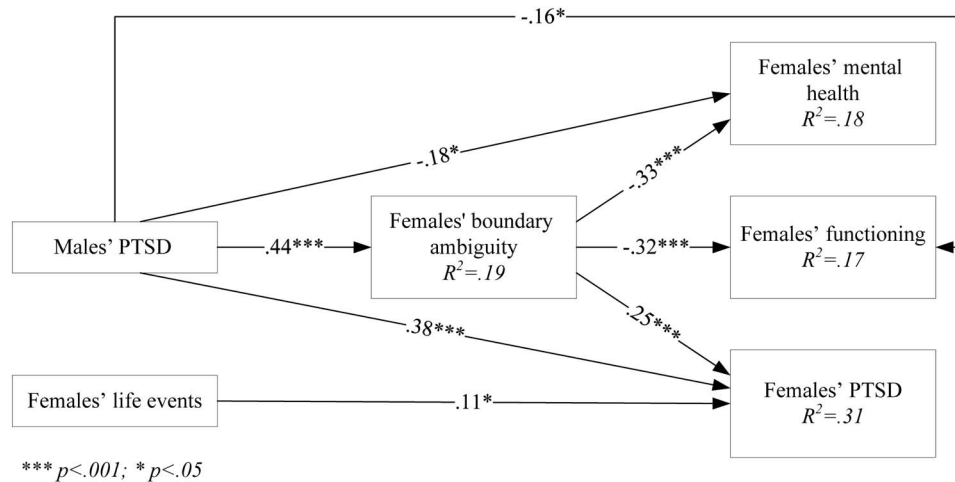


Figure 2. Structural equation model of associations among males' PTSD, females' life events and females' ambiguous loss, mental health, functioning, and PTSD. PTSD = posttraumatic stress disorder.

The rate of PTSD among the females in this study was 10%, a result which mirrors the findings of a study on the spouses of military veterans where 10.4% of the wives met the criteria for PTSD (Renshaw et al., 2008). This rate was slightly lower than the findings of a study examining 190 civilian wives of male service members who had possible PTSD due to combat, where 23.7% of wives endorsed PTSD symptoms (Renshaw et al., 2011). Therefore, when evaluating the female's PTSD symptoms, it is essential to examine her own past experiences and to assess how they contribute to her current PTSD symptoms. However, when moving to a more comprehensive model, it was found that wives' earlier traumatic events were also associated with wives' higher PTSD symptoms. This result is consistent with a study conducted by Renshaw and colleagues (2011), in which the wives acknowledged that their PTSD symptoms may also have been due to events in their own lives. It is not only that the veteran transmits his PTSD to his partner; rather, both members of the couple—and the interaction between them—play a significant role in the development of her symptoms. It is possible that the veteran's PTSD invokes his partner's past and leads to a resurgence in her PTSD symptoms.

The Diathesis Stress Model can be applied to the findings regarding the female's PTSD symptoms, which can be seen as resulting from a combination of her own previous life experiences and her partner's PTSD (McKeever & Huff, 2003). According to this model, PTSD arises if the individual reaches his or her "breaking point" in the interaction between premorbid risk factors and situational stressors. These risk factors include biological diatheses such as genetic composition and neurological and neurochemical traits as well as ecological factors such as the individual's developmental history and support system (McKeever & Huff, 2003; Monroe & Hadjiyannakis, 2002). While the female partner's own traumatic events may serve as a risk factor for her PTSD, it is the veteran's high level of PTSD that triggers his partner's own events, leading to her "breaking point" and the development of her own PTSD symptoms.

The second aim of the study was to examine the role of ambiguous loss theory and specifically boundary ambiguity as a mediating factor in explaining the associations between the veteran's

PTSD and his female partner's adjustment. Indeed, the findings of this study demonstrate boundary ambiguity serving as a mediator between the veteran's PTSD and the partner's adjustment as manifested in her PTSD, functioning, and mental health.

In line with Boss's theory of ambiguous loss, the veteran's ambiguous role within the family and the marital relationship is seen here as having a negative effect on his partner; it seems that the waiting and wondering to see whether her spouse will ever return to his previous levels of functioning presents a great challenge for his wife (Dekel et al., 2005). Furthermore, she may feel that at times her husband needs the same level of care as a child. The veteran might on occasion fulfill his expected role in the family, but more often he demonstrates inappropriate, unpredictable, and impulsive behavior. Consistent with the theory, the tension, ambiguity, and indefinite time-frame may negatively impact the female's mental health and functioning (Boss, 1999).

Although this is the first time that boundary ambiguity has been examined quantitatively within this specific context, our findings are in keeping with previous studies that have been conducted on the role of boundary ambiguity and relationships. In families with chronically ill or severely disabled children, or with a family member who has suffered a mild traumatic brain injury, boundary ambiguity has been found to serve as a significant risk factor for the family members (Berge & Holm, 2007; Landau & Hissett, 2008; Roper & Jackson, 2007). Boundary ambiguity also seems to contribute to psychological distress in families who have a child with a chronic health condition (Berge & Holm, 2007), a child with a severe disability (Roper & Jackson, 2007), and to the breakdown of marital relationships in those situations in which a partner has suffered a traumatic brain injury (Landau & Hissett, 2008). As seen in both the present and previous studies, it can be exceptionally challenging when there is an unclear role or relationship with a loved one.

Limitations of this study include the bias inherent in the fact that the participants were individuals who actively sought help—for example, they were in great enough distress to find and avail themselves of the mental health services they needed. We did, however, attempt to overcome this bias by selecting matched

veterans using predetermined criteria from a list of all veterans who participated in the second Israel-Lebanon war who had not sought help. Another limitation of this study was its cross-sectional design, and the fact that all measures used here were self-reporting measures. Also, spouses' PTSD was evaluated only in relation to their partners' PTSD; future studies should examine females' PTSD both in relation to their specific past experiences as well as to their partners' PTSD. Finally, it has been suggested that boundary ambiguity bears a resemblance to sense of burden. However, while boundary ambiguity can indeed lead to greater feelings of burden, and both constructs can increase mental distress, the latter includes additional characteristics such as unilateral decision making and role reversals.

Future studies would benefit from a longitudinal design to further examine the dynamic between the veteran and his spouse/partner, and to better understand how his behavior can lead to PTSD symptoms in his spouse/partner. Future longitudinal studies, controlling for interdependency in couples, could also track how PTSD in women might enhance PTSD in their male partners. Also of interest would be an examination of couples in which the veteran was female and the civilian partner male, as well as of couples in which both partners were veterans. Additionally, it would be of interest to see whether focusing on boundary ambiguity within military veteran couples in therapy could lead to the improved functioning and mental health status of both partners. Other studies would do well to examine interventions for working with couples on accepting the newfound ambiguity in their marital relationship. These interventions could potentially aid couples in mourning the old relationship and finding ways to enjoy what remains positive in the new. Finally, various authors have claimed that the heightened distress of women married to men with PTSD may be attributed to assortive mating: the tendency to choose a partner similar to oneself. The idea behind this claim is that the wife's distress stems from prior vulnerabilities that led her to be attracted to and marry a man of similar mental health status (Kaznatcheev, Brown, & Shultz, 2010; Taylor, Fiore, Mendelsohn, & Cheshire, 2011). While this explanation cannot be ruled out, there are substantial grounds for questioning it. Most combat veterans, at least in Israel—where army recruits must pass stringent examinations of their physical and mental health—are deemed psychologically healthy prior to their service. In addition, Jordan et al. (1992), in their study of secondary traumatization following the Vietnam War, refuted the assortive mating theory on the grounds that they found no significant differences in sociodemographic and other background characteristics among wives of veterans with PTSD and wives of veterans without PTSD.

In working clinically with wives and partners who have experienced ambiguous loss, Boss (2006) recommends officially naming the situation ambiguous loss, thereby normalizing the stress, ambivalence, and confusion experienced within the family unit. Partners are encouraged to share stories about their veteran spouses, and also to use the therapeutic experience as a way of reconstructing the couple's rules, rituals, and roles. Therapy can also be used as a way of finding meaning in the loss and in the ambiguity.

PTSD has a negative impact on returning war veterans and their partners, and the theory of transmission reviewed here can ideally assist in the development of interventions that can lead to better functioning within the marital relationship in the face of PTSD

symptoms. This study contributes to the existing literature by further mapping out the mechanism of transmission of PTSD from veteran to his female partner. It also reinforces existing findings on the role of the female's previous life experiences when evaluating her emerging PTSD symptoms. Clinicians can benefit from this research by considering not only the female's current PTSD symptoms, but also exploring her previous traumatic experiences and how they impact her functioning. This study provides preliminary support for the application of ambiguous loss theory and boundary ambiguity to clinical work with couples who have PTSD symptoms.

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