

The Relationships Between Posttraumatic Stress Symptom Clusters and Marital Intimacy Among War Veterans

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This study examined (a) the relationships between posttraumatic stress disorder (PTSD) symptom clusters and marital intimacy among Israeli war veterans and (b) the role of self-disclosure and verbal violence in mediating the effects of PTSD avoidance and hyperarousal symptoms on marital intimacy. The sample consisted of 219 participants divided into 2 groups: ex-prisoners of war (ex-POWs; $N = 125$) and a comparison group of veterans who fought in the same war but were not held in captivity ($N = 94$). Ex-POWs displayed higher levels of PTSD symptoms and verbal violence and lower levels of self-disclosure than did controls. Although ex-POWs and controls did not differ in level of marital intimacy, they did, however, present a different pattern of relationships between PTSD clusters and intimacy. In ex-POWs, self-disclosure mediated the relations between PTSD avoidance and marital intimacy. Verbal aggression was also found via indirect effect of hyperarousal on marital intimacy. The results point to the importance of self-disclosure and verbal violence as interpersonal mechanisms for the relations between posttraumatic symptoms on marital intimacy of ex-POWs.

Keywords: marital intimacy, PTSD, POWs, verbal violence, self-disclosure

Intimacy plays an essential role in enduring romantic relationships (Moss & Schwebel, 1993) and is also implicated in psychological, physiological, and physical health (Dandeneau & Johnson, 1994; Moss & Schwebel, 1993). Most people long for a meaningful intimate relationship and consider it a personal and social goal (Moss & Schwebel, 1993).

Several attempts have been made to conceptualize intimacy over the years. Mills and Turnbull (2001) defined intimacy as “the ability to be sensitive and aware of each others’ psychological, emotional, physical, operational, social and spiritual needs” (p. 301). Moss and Schwebel (1993) posited that “intimacy in enduring romantic relationships is determined by the level of commitment and positive affective, cognitive, and physical closeness one experiences with a partner in a reciprocal (although not necessarily symmetrical) relationship” (p. 33). Intimacy is therefore viewed as a multidimensional concept consisting of the ability to trust one another and share thoughts, feelings, sexual relations, closeness, and friendship (Schaffer & Olson, 1981).

Intimacy may be impaired when one of the marital partners undergoes a traumatic event that results in severe emotional injury. The traumatized veteran’s ability to trust, share, and be close to another is often compromised (Mills & Turnbull, 2001). This, in turn, has a negative impact on marital quality, satisfaction, and spousal support (e.g., Beiser, Turner, & Ganesan, 1989; Davidson, Hughes, Blazer, & George, 1991; Riggs, Byrne, Weathers, & Litz, 1998).

This study examined marital intimacy among veterans who have been exposed to the exceptionally traumatic experience of war captivity. Research on the adaptation of ex-prisoners of war (ex-POWs) has consistently found them to be at high risk for psychological distress and especially for posttraumatic stress disorder (PTSD). The pathogenic effects of war captivity continue to be documented years after World War II (Kluznik, Speed, Van Valkenburg, & Magraw, 1986; Sutker, Allain, & Winstead 1993); the Korean War (Sutker, Winstead, Galina, & Allain, 1991); the Vietnam War (Ursano, Boydstein, & Wheatley, 1981); and the Yom Kippur War (Solomon, Neria, Ohry, Waysman, & Ginzburg, 1994).

Studies of ex-POWs have implicated captivity-induced trauma in interpersonal consequences, most notably its effects on intimacy within the marital relationship. These studies have shown that ex-POWs’ marital relationships are characterized by marital problems (e.g., Neria et al., 2000) and by high divorce and separation rates (Nice, McDonald, & McMillian, 1981). However, the mechanisms by which

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PTSD symptoms undermine marital intimacy are not fully understood. The aim of this study is to examine the unique pattern of relationships between PTSD symptom clusters and intimacy. Research has suggested that the negative association between PTSD and intimacy is mainly related to two of its symptoms clusters: avoidance and hyperarousal (criteria C and D in the fourth edition of the *Diagnostic and Statistical Manual of Mental Disorders*, or *DSM-IV* [American Psychiatric Association, 1990]; e.g., Mills & Turnbull, 2001; Riggs et al., 1998). Most studies have reported a stronger contribution of the avoidance cluster (e.g., Cook, Riggs, Thompson, & Coyne, 2004; Evans, McHugh, Hopwood, & Watt, 2003).

The avoidance cluster entails some deficiency in experiencing and expressing positive emotions (i.e., loss of interest in activities, detachment and alienation from others, restricted affect, and emotional numbing). These symptoms play an important role in the intimate exchanges integral to a well-functioning relationship. Both self-disclosure and emotional expressiveness reflect a process of sharing intimate thoughts, feelings, and attitudes (Finkenauer & Hazam, 2000) considered crucial for marital closeness (Vogel, Wester, & Heesacker, 1999) and for resolution of marital conflict (Cook et al., 2004; Dent et al., 1998). A lack of expressiveness or self-disclosure is related to detachment, distancing, isolation, and conflict among couples (Frederikson, Chamberlain, & Long, 1996). Studies have shown that avoidance symptoms are negatively related to veterans' dyadic adjustment, satisfaction, communication, intimacy, and marital problems (Cook et al., 2004; Evans, McHugh, Hopwood, & Watt, 2003; Riggs et al., 1998). In addition, several studies have found that avoidance is the most significant contributing factor to divorce among spouses of veterans and ex-POWs (Frederikson et al., 1996; Ruscio, Weathers, King, & King, 2002).

Few studies have explored the association between intimacy and the PTSD hyperarousal cluster. According to *DSM-IV*, the hyperarousal cluster converges with irritability and hypervigilance symptoms such as sleep disturbance, concentration difficulties, and an exaggerated startle response. The literature has suggested a number of possibilities for the contribution of hyperarousal to marital intimacy problems. First, increased irritability and outbursts of anger were related to a decreased motivation to offer support (Lane & Hobfoll, 2002; Mills & Turnbull, 2004). Second, living in a chronic state of heightened arousal puts considerable tension on the intimate relationship, as partners feel the need to "walk on eggshells" because of fear of upsetting the veteran (e.g., Dekel & Solomon, 2006). Third, hyperarousal symptoms may undermine marital intimacy via use of physical and verbal violence (e.g., Byrne & Riggs, 1996; O'Donnell, Cook, Thompson, Riley, & Neria, 2006; Riggs et al., 1998).

To further clarify these issues, in this study we examine (a) the unique implication of each of the three PTSD symptom clusters—intrusion, avoidance, and arousal—in intimacy difficulties of ex-POWs and controls and (b) the mediating role of self-disclosure and verbal violence in the relations between PTSD symptom clusters and intimacy.

Method

Participants

This longitudinal study examined two groups of Israeli combat veterans of the 1973 Yom Kippur War. All the participants had taken part in an earlier study of ex-POWs conducted in 1993 (for details, see Solomon et al., 1994).

Ex-POWs. According to Israel's Ministry of Defense records, 240 POWs were taken from the Israeli Army land forces during the Yom Kippur War (October 1973). Of the 164 ex-POWs who participated in the previous study (Solomon et al., 1994), 10 could not be located, 4 had died, and 6 could not participate because of their deteriorated mental status. Of the remaining 144 ex-POWs, 125 participated in this study, constituting an 86.8% response rate. One hundred five ex-POWs who were married or had partners at the time of the study were included in the current analyses.

Controls. A control group of 280 combat veterans of the same war, matched with the ex-POWs in personal and military background, were sampled from Israel Defense Forces computerized data banks. Of these, we tried to contact the 185 veterans who had served as a control group in a former wave of this longitudinal study. Forty-one could not be located, and 1 had died. Of the remaining 143 controls, 94 filled out the questionnaires for this study (response rate: 66%). The two groups did not differ in age, years of marriage, and number of children. The mean age of participants at the time of data collection was 54.6 ($SD = 4.63$). The mean length of relationships was 29.08 years ($SD = 8.43$), and the mean number of children was 3.24 ($SD = 1.17$).

Procedure

Participants were contacted by telephone and asked to take part in the study. A battery of questionnaires was administered to those who expressed consent in their homes or in other locations of choice. Before filling out the questionnaires, the participants signed informed consent forms and were assured that the data would remain confidential. All the questionnaires were administered in Hebrew. The PTSD Inventory and Capacity for Intimacy questionnaire were devised and used with Israeli samples, and the Conflict Tactics Scale and Self-Disclosure Index questionnaires were translated from English into Hebrew for the purpose of the study using the back-translation method. Both Israel Defense Forces and Tel Aviv University Human Subjects Committees (Helsinki committee) approved the study's protocol.

Measures

PTSD Inventory. PTSD symptoms were measured using the PTSD Inventory (Solomon & Horesh, 2007), a self-report scale that consists of 17 statements corresponding to the core PTSD symptoms listed in the *DSM-IV*. For each statement, participants were asked to indicate whether they had the symptom in the previous month on a 4-point

scale ranging from 1 (*not at all*) to 4 (*I usually did*). For the purpose of this study, only selection of 4 was considered a positive answer (i.e., the respondent suffered from the symptom) because we prefer the strictest criterion as an indication of psychopathology. The inventory enabled measurement of the number of PTSD symptoms and identification of the symptoms in each symptoms cluster (i.e., intrusion, avoidance, and hyperarousal). On the basis of their responses, we calculated an average score of the number of symptoms on each symptom cluster. The scores can be compared with scores of both normative and clinical samples of Lebanon War veterans. Twenty years after the war ended, the mean scores were 1.31 and 2.03 for intrusion; 1.31 and 1.83 for avoidance; and 1.50 and 2.28 for hyperarousal, respectively (Solomon, Shklar, & Mikulincer, 2005). Internal consistency for the three posttraumatic symptoms cluster items in this study were high (Cronbach α s = .91 for intrusion, .88 for avoidance, and .91 for hyperarousal). The scale was also found to have high convergent validity when compared with diagnoses based on structured clinical interviews (Solomon & Horesh, 2007).

Conflict Tactics Scale (Straus, 1990). This self-report scale includes 6 items of verbal aggression (e.g., insults, swearing, and yelling) and 13 items of physical aggression (e.g., throwing things and pushing, grabbing, or shoving). Participants were asked to rate how often they had engaged in each type of aggressive behavior over the previous year, ranging from *never* (1) to *every day* (6). On the basis of their responses, we calculated an average score of verbal violence; the higher the verbal violence score, the more frequently a participant used verbal violence against his spouse. In this study, we decided to use only one index reflecting the frequency of verbal aggression because of the low variance and averages on the Physical Violence subscale for both study groups. The inclusion of the Physical Aggression subscale did not change the pattern of results. The Conflict Tactics Scale has an established internal consistency ranging from 0.88 to 0.95 in samples of husbands and wives (Straus, 1990). Internal consistency in the current sample was 0.87 for verbal aggression.

Capacity for Intimacy Questionnaire. To examine capacity for intimacy, we used the Intimate Partner Questionnaire (Sharabany, 1974b), modified for adults by Harsheleg (1984). This self-report scale includes 36 items corresponding to 10 different aspects of intimacy (e.g., closeness, sharing, loyalty, and mutual activities). Participants were asked to rate the degree of similarity between the item content and their feelings toward their spouse. Scores ranged from 1 (*totally not true*) to 6 (*totally true*). Scores of intimacy were calculated as an item's mean. A higher score means greater intimacy in marital relations. This scale has established internal consistency ranging from 0.53 to 0.94 (Cohen, 1994) and was validated (criterion and content validation) in an adult population (Sharabany, 1974a). The mean score for the general population in Israel was found to be 4.77 ($SD = 0.138$) (Grinshpan, 1991). Internal consistency in the current sample was high (Cronbach's $\alpha = 0.93$).

Self-Disclosure Index (Miller, Berg & Archer, 1983). The Self-Disclosure Index measures the extent and content of self-disclosure. The inventory consists of 10 questions that can be posed with regard to five target figures: mother, father, same-sex close friend, opposite-sex close friend, and partner. In the current study of male participants, we chose to ask only about the wife (i.e., "I tell my wife my most horrifying fears" and "I tell my wife about traits I like and dislike in myself"). Respondents were asked to rate the degree to which the statement was applicable to them on a scale ranging from 1 (*not at all*) to 6 (*very applicable*). Each participant's score was the mean of the individuals' 10 ratings. A high score indicates greater self-disclosure by the participant. Internal consistency for the current sample was high (Cronbach's $\alpha = 0.94$).

Results

Group Comparisons

Table 1 presents the means, standard deviations, and multivariate test results for ex-POWs and controls. A multivariate analysis of variance for the six study variables yielded a significant main effect for group, $F(6, 192) = 30.34, p < .001$. As can be seen in Table 1, the two study groups differ in five of the six study variables. Ex-POWs reported higher numbers of PTSD intrusion, avoidance, and hyperarousal symptoms than did controls. Ex-POWs also reported higher levels of verbal violence but lower levels of self-disclosure than did controls. The two groups did not differ in their reported levels of intimacy.

Associations Between PTSD Symptom Clusters, Self-Disclosure, Verbal Violence, and Intimacy Variables

Table 2 presents bivariate associations between PTSD symptom clusters and intimacy variables separately for ex-POWs and controls. As seen in Table 2, the correlation analysis indicated that for both groups, each of the PTSD symptom clusters was related to higher levels of verbal violence. Using Cohen and Cohen's (1983) procedure for calculation of differences between two independent correlation coefficients (Fisher's Z tests), we found no significant differences in the magnitude of the associations between ex-POWs and controls. In other words, the more a veteran

Table 1
Means, Standard Deviations, and Multivariate Test Results of Study Variables by Research Group

Variable	Ex-POWs	Controls	$F(6, 192)$
PTSD intrusion	2.64 (0.89)	1.42 (0.50)	133.96***
PTSD avoidance	2.49 (0.73)	1.37 (0.57)	142.91***
PTSD arousal	2.96 (0.87)	1.74 (0.67)	120.52***
Self disclosure	3.66 (0.69)	4.22 (1.28)	9.96**
Verbal violence	1.62 (0.67)	1.33 (0.37)	13.62***
Intimacy	4.52 (0.65)	4.70 (0.73)	2.94

Note. Standard deviations appear in parentheses. POWs = prisoners of war; PTSD = posttraumatic stress disorder.
** $p < .01$. *** $p < .001$.

Table 2
Bivariate Pearson Correlations Between the Study Variables for Ex-POWs and Controls

Variable	Control						Ex-POWs					
	1	2	3	4	5	6	1	2	3	4	5	6
1. PTSD intrusion	—						—					
2. PTSD avoidance	.64***	—					.58***	—				
3. PTSD hyperarousal	.62***	.57***	—				.78***	.66***	—			
4. Self-disclosure	.04	-.03	-.03	—			-.11	-.36***	-.06	—		
5. Intimacy	.08	-.09	-.13	.60**	—		-.08	-.37***	-.07	.66***	—	
6. Verbal violence	.21*	.20*	.46***	.03	-.19	—	.34***	.35***	.35***	-.15	-.37***	—

Note. POWs = prisoners of war; PTSD = posttraumatic stress disorder.

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

suffers from posttraumatic symptoms, regardless of the study group, the more he exhibits higher levels of verbal violence.

The analysis also revealed that for the control group, none of the PTSD clusters was related to self-disclosure and marital intimacy. In contrast, in the ex-POW group, PTSD avoidance was negatively related to both self-disclosure and marital intimacy. The more an ex-POW suffered from posttraumatic avoidance symptoms, the more he reported intimacy difficulties in his marital relationship and exhibited poorer capacity for self-disclosure. Additionally, the analysis indicated that for both ex-POWs and controls, self-disclosure was strongly related to marital intimacy but not to verbal violence. Verbal violence, however, was negatively related to intimacy in the ex-POW group, but not in the control group. Last, the analysis revealed that in both groups, PTSD symptom clusters were strongly related to each other.

PTSD Symptom Clusters and Marital Intimacy—Mediation Model

In this section, we examine (a) whether the association between the avoidance symptom cluster and veterans' marital intimacy was mediated by veterans' self-disclosure, above and beyond the variance explained by the intrusion and hyperarousal symptom clusters, and (b) whether the association between the hyperarousal symptom cluster and veterans' marital intimacy was mediated by veterans' verbal violence, above and beyond the variance explained by intrusion and avoidance symptom clusters.

First, we note that because of the lack of significant correlations between the symptom clusters and marital intimacy in the control group, mediation analysis is impossible. Therefore, the mediation analysis focuses on the ex-POW group only. To this end, we used EQS 6.1 Structural Equation Modeling software (Bentler & Wu, 1995).

We followed Holmbeck's (1997) procedure (the logic of which is modeled on Baron & Kenny, 1986), which requires three steps. First, assuming that A represents predicting variables, B represents mediating variables, and C represents an outcome variable, one needs to first assess the direct effect (A–C) model. According to Hoyle and Smith (1994), this first step establishes that there is an effect that may be mediated. Second, we tested the overall fit of the

A–B–C model and the A–B and B–C path coefficients. In other words, we tested the fit of the overall model in two conditions: (a) The avoidance symptom cluster predicts veterans' self-disclosure, and veterans' self-disclosure predicts veterans' marital intimacy above and beyond the contribution of other symptom clusters, and (b) the hyperarousal symptom cluster predicts veterans' verbal violence and veterans' verbal violence predicts veterans' marital intimacy above and beyond the contribution of other symptom clusters. At this point, the A–C, A–B, and B–C paths (and the A–B–C model) should all be significant in the directions predicted. Third, the final step in assessing the mediational effect is to assess the fit of the A–B–C model under two conditions: (a) when the A–C paths (avoidance to marital intimacy and hyperarousal to marital intimacy) are constrained to zero and (b) when the A–C paths are not constrained. The second model is then examined to show whether it provides a significant improvement in fit over the first. Improvement in fit is assessed with a significance test based on the difference between the two model chi-squares. If there is a mediation effect, the addition of the A–C path to the model in which the A–C path is constrained should not improve the fit.

Did avoidance and hyperarousal symptom clusters predict veterans' marital intimacy? The first step was examination of the direct effect (A–C) model. The structural equation model describing the pattern of relationships between the variables for ex-POWs produced an excellent fit to the data: $\chi^2(1, N = 122) = 0.001, p = .97$, comparative fit index (CFI) = 1, goodness-of-fit index (GFI) = 1, and root-mean-square error of approximation (RMSEA) = 1. Ex-POWs' avoidance and hyperarousal symptom clusters significantly predicted marital intimacy ($r_s = -.57$ and $.30$, $p_s < .01$, respectively).

It should be noted that our analysis showed that the PTSD hyperarousal symptom cluster was positively related to marital intimacy. This is a peculiar finding. However, we believe that this association is a superficial one stemming from a suppression process (MacKinnon, Krull, & Lockwood, 2000; Shrout & Bolger, 2002). In our analysis, the hyperarousal symptom cluster was positively related to verbal violence, which in turn was negatively related to marital intimacy. Because the positive association was larger than the negative association, a superficial positive direct asso-

ciation between the hyperarousal symptom cluster and marital intimacy could have been created. However, there was no actual bivariate association between the hyperarousal symptom cluster and marital intimacy.

Were the mediation paths significant? The second step was examination of the A–B and B–C paths. The structural equation model describing the pattern of relationships between the variables for ex-POWs produced an adequate fit to the data: $\chi^2(6, N = 122) = 11.87, p = .06, CFI = 0.98, GFI = 0.96, RMSEA = 0.91$. Ex-POWs' avoidance symptom cluster was significantly negatively associated with self-disclosure. Moreover, ex-POWs' self-disclosure was significantly positively associated with marital intimacy. Likewise, ex-POWs' hyperarousal symptom cluster was significantly positively associated with verbal aggression. Additionally, ex-POWs' verbal aggression cluster was significantly negatively associated with marital intimacy. These contributions were significant above and beyond the effect of other symptom clusters (for complete correlation coefficients, see Table 2).

Was there a mediation effect? To assess the mediation effect, we first calculated the overall fit of the A–B–C model when the A–C path was constrained to zero. The model produced adequate fit to the data: $\chi^2(8, N = 124) = 17.31, p = .03, CFI = 0.97, GFI = 0.96, RMSEA = 0.91$. Next, we calculated the overall fit of the A–B–C model when the A–C path was not constrained. The model produced an adequate fit to the data: $\chi^2(6, N = 124) = 12, p = .06, CFI = 0.98, GFI = 0.97, RMSEA = 0.91$. The results indicated that there was no significant improvement in fit on the basis of the difference between the two model

chi-squares, $\Delta\chi^2(2) = 5.31, ns$. In other words, as seen in Figure 1, self-disclosure mediated the relation between ex-POWs' avoidance symptoms and marital intimacy, above and beyond the contribution of the other symptom clusters. Likewise, the ex-POWs' hyperarousal symptom cluster affected marital intimacy via verbal aggression, above and beyond the contribution of the other symptom clusters.

As noted, the hyperarousal cluster by itself does not directly relate to marital intimacy, and in combination with other clusters they are positively associated. Furthermore, the net effect of hyperarousal on intimacy through verbal aggression is negative; thus, verbal aggression cannot accurately be described as mediating the significant positive effect of hyperarousal. For these reasons, we would term this relation as the indirect relationship between hyperarousal and marital intimacy via verbal aggression. It is important to note that it may be because the portion of hyperarousal related to aggressive outbursts actually affected marital intimacy.

Discussion

Our results show that ex-POWs did not differ in their level of marital intimacy from controls. However, ex-POWs endorsed more PTSD symptoms that were associated with marital intimacy. It follows that the PTSD symptoms are strongly implicated in the intimacy difficulties of ex-POWs. This is in accordance with previous studies' findings that former POWs with PTSD, as opposed to POWs without PTSD, had poorer marital relationships, attributable to their mental state and not to their traumatic ordeal (Cook et al.,

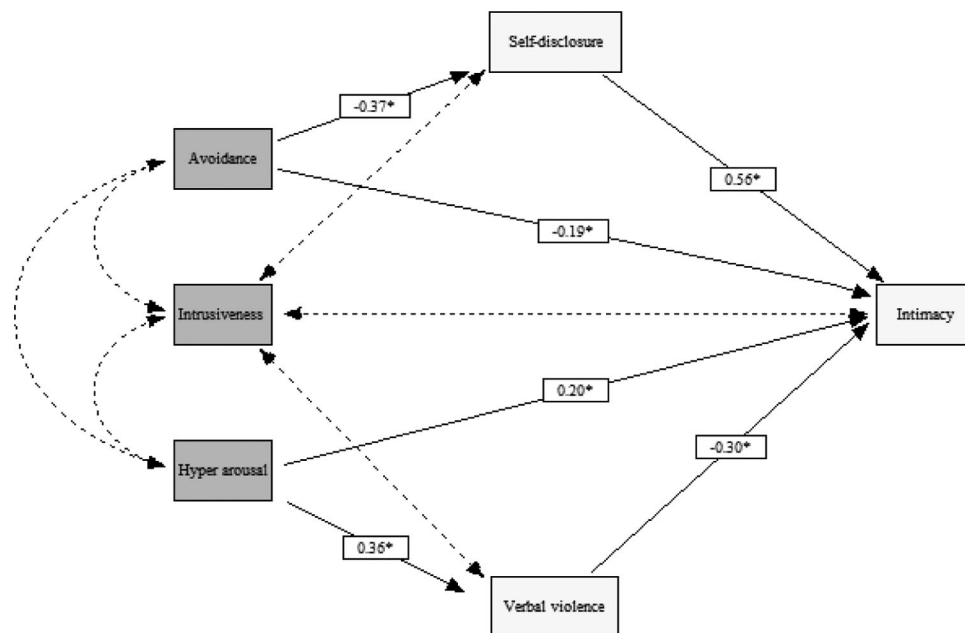


Figure 1. Assessing the mediation effect of prisoners of war. The model produced an adequate fit to the data: $\chi^2(8, N = 124) = 17.31, p = .03$, comparative fit index = 0.97, root-mean-square error of approximation = 0.91. Dotted lines represent covariates between constructs and/or error terms. Solid lines represent significant predictions. * $p < .05$.

2004). From a salutogenic perspective, it was found that POWs without PTSD reported that they learned to appreciate their relationships with their partners more than before their ordeal and subsequently enjoyed more support and intimacy in their marriage (Solomon & Dekel, 2007). This study's results emphasized the contribution of PTSD symptoms, and not captivity experience by itself, to lower marital intimacy.

Given that PTSD contributes to impaired intimacy, the next question is what is the relative impact of each of the three PTSD symptom clusters to intimacy? As the PTSD symptom levels of the control group were very low, we were unable to examine this association among the controls and therefore assessed it only among the ex-POWs. Although we found no differences in intimacy levels between the ex-POWs and the controls, there was a difference in the various types of relations between PTSD clusters and intimacy in the two groups.

Our results indicate that the more ex-POWs suffer from both posttraumatic avoidance and hyperarousal, the more they report intimacy difficulties. Several previous studies have also found that these two symptom clusters are implicated in intimacy difficulties (e.g., Evans et al., 2003; Galovski & Lyons, 2004; Riggs et al., 1998). It has been suggested that symptoms in the avoidance cluster of PTSD lead to constriction of significant aspects of one's personal and social life severely inhibiting intimate relationships (Herman, 1992). Within the marital relationship, the veteran's avoidance may initiate a vicious cycle in which withdrawal and reluctance to discuss the past serve to strengthen feelings of uncertainty and loneliness. This, in turn, reinforces the spouse's apprehension, which leads to further withdrawal on the veteran's part (Galovski & Lyons, 2004; Rosenheck & Thomson, 1986). Such ongoing experiences may reinforce the lack of intimacy in posttraumatic marital life.

Our results also show that self-disclosure mediates the relationship between avoidance cluster and intimacy. Emotional numbing, as part of the avoidance symptom cluster, is a cardinal feature of chronic PTSD, and it has been widely reported to have a strong link with intimacy (e.g., Christensen, 1988; Galovski & Lyons, 2004). Previous research has asserted that emotional numbing is likely to affect the quality of a PTSD sufferer's relationships (Vogel et al., 1999), and his desire to share his thoughts, experiences, and worries with others. It may be that besides its direct relation with intimacy, emotional numbing, as part of the avoidance cluster, is related to reduce self-disclosure. Because open communication and self-disclosure are essential for successful relationships, lower levels of self-disclosure may negatively affect intimacy levels.

The results of this study also support the observation that the hyperarousal symptoms are indirectly related to intimacy difficulties, via verbal aggression (e.g., Galovski & Lyons, 2004). Research has suggested that the association is because of increased irritability and outbursts of anger toward others (e.g., Mills & Turnbull, 2004). Drawing on extensive clinical experience, Van der Kolk (2001) and Herman (1992) described how hyperarousal symptoms sig-

nificantly lower tolerance levels over time. In the long run, even mundane day-to-day problems may hasten disproportional anger and rage responses by the traumatized individual. Furthermore, it has been suggested that the traumatized veteran's self-destructive "survival mode" damages his capacity for self-control and self-monitoring and results in paranoid judgment of events augmenting hostile responses (Chemtov, Novaco, Hamada, Gross, & Smith, 1997). The elevated levels of aggression may also be explained as a manifestation of a secondary disorder, such as substance abuse, known to have high comorbidity rates with PTSD (Kessler, Sonnega, Bromet, Hughes, & Nelson 1995).

It is worth mentioning the lack of bivariate relationships between hyperarousal and intimacy. These results emphasize the importance of verbal aggression as a potential mechanism for this indirect effect of hyperarousal on marital intimacy. The potential detrimental effect on intimacy here is twofold. First, as noted above, traumatized ex-POWs tend to be tense and irritable in general (e.g., Cook et al., 2004) and exhibit high levels of physical and verbal aggression (e.g., Riggs et al., 1998), which is likely to negatively affect their capacity for intimacy (e.g., Mills & Turnbull, 2004). Horowitz and Solomon (1978) observed that traumatized veterans often resort to aggression as a means to solving family problems, at times even gaining some satisfaction. In a similar vein, Solomon (1988) proposed that hostility and aggressive behaviors that were adaptive in combat were carried over to veterans' homes to resolve conflicts. However, they only contributed to disruptions in their marital relationships. The veteran may find it difficult to moderate his behavior and aggressive drives.

This study suffers from a number of methodological limitations. Mainly, the assessment was based solely on self-report measures, which although common in trauma research are susceptible to bias. It is worth noting that there is a possibility for false-positive error in the study questionnaires such as the PTSD Inventory. For example, some participants did not have posttraumatic symptoms but were treated as posttraumatic individuals (or reported nonexistent posttraumatic symptoms) in light of their status as a former POW in Israel. It should also be noted that both the PTSD Inventory and Capacity for Intimacy questionnaire were originally constructed in Hebrew, whereas the Conflict Tactics Scale and Self-Disclosure Inventory were translated from English into Hebrew for the purpose of the study. This should be taken into consideration with regard to cross-cultural differences. It may well be that the intimacy questionnaire used in this study did not tap into the many aspects of the concept of intimacy, which, as we noted, is known to be multidimensional (Moss & Schwebel, 1993). As this is a correlative study, inferences of causal associations between the study's variables should not be made. Finally, this study did not examine the possibility that marital relationships could have an effect on PTSD. Future studies should test an alternative model in which interpersonal intimacy contributes to the intrapsychic condition. Further research should examine the model we propose in other traumatized populations (e.g., victims of natural disasters and political violence) to establish the different associations with intimacy.

The empirical literature would gain further insight into the realm of ex-POWs' interpersonal relationships if alternate mediating variables, such as physical violence or sexual satisfaction, were examined.

Notwithstanding these limitations, the findings have important practical implications. They suggest that possible interventions focusing on posttraumatic veterans' self-disclosure and verbal violence may reduce the harsh effects of PTSD symptoms and contribute to higher marital intimacy. Forgiveness-based intervention is beginning to gain attention in the literature on psychological and marital therapy. It has been shown to be useful in reducing anger and hostility and in increasing empathy and positive feelings among individuals involved in interpersonal conflicts (Freedman & Enright, 1996; Gordon, Baucom, & Snyder, 2000). Another possible intervention may be to encourage the couple to openly discuss and negotiate how much the trauma is shared in the relationship. In treatment, the posttraumatic veteran can have more control over his preferred level of self-disclosure, and the therapist can assist in the partner's coping with the veteran's choices surrounding disclosure. Furthermore, in treatment the couple can process the trauma's meaning for them as couple (Sherman, Zanotti, & Jones, 2005).

This study emphasized the role of hyperarousal symptoms in marital intimacy. Couple's therapy interventions that involve skills in developing the areas of managing irritability, anger, and conflict disengagement strategies during outbursts are highly recommended (Sherman et al., 2005). Assisting the couple to set limits on emotional involvement during arguments can reduce the incidence of flooding and outbursts (Gottman & Silver, 1999). Studies have shown that spousal support is a crucial resource in coping with and combating illness (Silver & Iacono, 1984) and understanding the mediational relationships between avoidance and hyperarousal symptoms via self-disclosure and verbal violence to intimacy. This may aid therapists in assisting their clients' development of constructive methods of communication, bridging over the traumatic residues of detachment and alienation.

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