Marital quality and relationship satisfaction in war veterans and their wives in Bosnia and Herzegovina

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Background: Posttraumatic stress disorder (PTSD) in war veterans and its complex emotional and behavioral characteristics affect veterans’ partners and the quality of their relationships. Although most research focuses on the effects of veterans’ PTSD on their partners/wives and their relationships, not many findings have been established on partner adjustment and marriage quality when wives suffer from PTSD as well.

Objective: The aim of the research was to examine the relationship between war-related posttraumatic stress symptoms and partner’s marital satisfaction in couples where one or both partners suffer from PTSD.

Design: The Harvard Trauma Questionnaire and Dyadic Adjustment Scale encompassed 154 war veterans and their wives who had been treated at Mostar Clinical Hospital in Bosnia and Herzegovina for combat-related PTSD as well as 77 veterans who did not suffer from PTSD and their wives.

Results: Veterans’ PTSD is related to lower levels of marital adjustment of their wives. Marital adjustment was significantly lower in couples where both partners had PTSD compared with couples where only the veteran had PTSD or neither partner had PTSD. Female partner’s marital adjustment is best explained by his avoidance symptoms and her own level of depressiveness and re-experiencing symptoms.

Conclusions: The results highlight the importance of recognizing PTSD in wives of traumatized veterans as well as the importance of family approach in the treatment of PTSD.

Keywords: marital quality; relationship satisfaction; war veterans; wives; PTSD

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The number of studies showing that posttraumatic stress disorder (PTSD) in a family member can largely affect other family members (Dekel & Goldblatt, 2008; Franciskovic et al., 2007; Galovski & Lyons, 2004; Klaric et al., 2008), family dynamics, and family system as a whole (Figley, 1998; Figley & Blaine Everson, 2010; Nelson Goff & Smith, 2005) has increased over the past two decades.

Partners of veterans suffering from PTSD are especially exposed to a wide specter of psychological distress and marital problems (Dekel, Goldblatt, Keidar, Solomon & Polliack, 2005; Dekel & Solomon, 2006; Nelson Goff et al., 2006; Ruger, Wilson & Waddoups, 2002). PTSD symptoms and related behavioral problems of veterans are significant predictors of difficulties in intimate relationships and psychological functioning of spouses (Beckham, Lytel & Feldman, 1996; Dekel & Solomon, 2006; Nelson Goff & Smith, 2005; Jordan et al., 1992). PTSD-affected veterans and their partners report increased family and marital instability, higher levels of dissatisfaction in the relationship, and weaker psychological adjustment compared with veterans without PTSD and their female
partners (Calhoun, Beckham & Bosworth, 2002; Chrysos, Taft, King L. A., & King D. W., 2005; O’Donnell, Cook, Thompson, Riley & Neria, 2006). Also, PTSD is often associated with a number of comorbid diagnoses that additionally affect veteran’s relationships. Evans, McHugh, Hopwood and Watt (2003) in their study found that avoidant symptoms and comorbid symptoms of anger and depression for veterans, and anger on its own for the female partners, play important role in family functioning.

However, although most research focuses on the effects of veterans’ PTSD on their partners/wives and their relationships, not many findings have been established on partner adjustment and marriage quality when wives suffer from PTSD as well. Given the nature and characteristics of the 1990s war in Bosnia and Herzegovina and the high level of traumatization of the civilian population, including women (Klaric, Klaric, Stevanovic, Grkovic & Jonovska, 2007), it was assumed that there were cases in the local community in which both partners suffered from PTSD, which could negatively affect the relationship between partners.

The aim of the research was to examine the relationship between war-related posttraumatic stress symptoms and partner’s marital satisfaction in couples where one or both partners suffer from PTSD.

Method
Research took place in the first half of 2007, and the basic criteria in selection were male veterans who had experienced war trauma. To form group A, all veterans who were diagnosed with PTSD in Mostar Clinical Hospital and came for a doctor’s appointment were asked to participate in the study. To form group B, initial contact with veterans who do not suffer from PTSD was through veterans’ associations, and further recruitment was made using the snowballing method (Salganik & Heckathom, 2004). The principal researcher paid a visit to the two war veteran association facilities, where the veterans assembled on a daily basis. Research notification forms were handed out, and the purpose of the study was explained. For those veterans interested in participating in the study, a visit to the researcher was arranged either at the Psychiatric Ward in Mostar Clinical Hospital or at the association facility. Inclusion criteria for all male veterans were active participation in the war, being married, or cohabiting. An additional inclusion criterion was the presence of PTSD for the experimental group and absence of PTSD for the control group. Exclusion criteria were the presence of alcohol addiction or mental disorders prior to the war. Alcohol consumption is fairly common and culturally tolerated. However, negative correlation between marital satisfaction and alcohol abuse is well documented (Doumas, Blasey & Mitchell, 2007) and, therefore, such participants were excluded to investigate only the influence of PTSD.

Each participant was asked to inform their married or cohabiting partner of the research and ask if they were also willing to participate. Female partners of eligible male veterans were contacted and were given the notification form. All participants were informed of the study goals, told that they could refuse to participate at any point of the research, and signed the written consent. Also, all participants were given the opportunity of therapy or medical intervention, if needed.

Veterans and their partner first completed the sociodemographic questionnaire and then followed this up with the Harvard Trauma Manual Bosnia-Herzegovina Version (Allden et al., 1998) to establish the presence of PTSD. Cut-down, Annoyed, Guilt, Eye-opener (CAGE) (Ewing, 1984) was used for identifying alcohol addiction. Finally, Dyadic Adjustment scale (DAS) (Spanier, 1979) and Brief Symptom Inventory (BSI) (Derogatis, 1993) were applied.

Participants
From 409 veterans contacted through Mostar Clinical Hospital, 317 were married and thus were asked to participate. Sixty-nine veterans (21.8%) refused to participate in the research and an additional 37 fulfilled alcohol-addiction exclusion criteria. The research continued with 211 veterans who were asked to inform their wives of the research. From a prospective 211 wives/partners, 57 veteran wives (27.0%) refused to participate. Finally, 154 couples in which husband had PTSD entered the study.

From 106 veterans contacted through veterans associations, seven (6.6%) of them met the alcohol-addiction criteria and were excluded from the research. From 99 contacted wives, 22 (22.2%) refused to participate in the research. Finally, 77 couples where husband did not meet criteria for PTSD participated in the study.

Measures
General demographic data, social, and economic status were determined using a general demographic questionnaire designed particularly for the aim of this research.

To determine the presence of posttraumatic symptoms, Harvard Trauma Questionnaire Bosnia-Herzegovina Version (HTQ; Allden et al., 1998) was used. The HTQ is a structured interview used in many studies and is particularly suitable for use in multicultural settings (Norris & Hamblen, 2004). For the purposes of this study, first and fourth module were used:

1. A list of possible traumatic events contains questions relating to experiences and traumatic events that the inhabitants of Bosnia and Herzegovina were exposed to during various stages of the war (during the
war, during the refugee period, and postwar period). It contains 46 possible traumatic events presented in the form of “yes” and “no” questions. 

(2) A list of questions relating to psychosocial problems caused by trauma contains a list of 40 statements on psychosocial difficulties caused by trauma. The first 16 statements are derived from DSM-IV criteria for PTSD and represent three clusters of symptoms: re-experiencing of a traumatic event (B), avoidance (C), and arousal symptoms (D). The rest of the statements refer to participants’ perception of the degree in which the trauma affected their everyday abilities. Responses to each question are scored as follows: 1 = not at all, 2 = very little, 3 = quite, 4 = very much. The total score is the mean value of all 40 statements, whereas the PTSD score is the mean value of the first 16 statements. The instrument has been validated for use in a non-psychiatric medical setting in Bosnia and Herzegovina, with maximized sensitivity and specificity at a cut-off point of 2.06 (AUC 0.981 sensitivity 100%, specificity 93.9%, predictive positive value (PPV) of 61.5, and negative predictive value (NPV) of 100, Cronbach’s alpha = 0.88) (Oruc et al., 2008). However, for the purposes of this study, a 2.5 cut-off score for PTSD was used, which is comparable with the results of patients who were clinically diagnosed with PTSD in other studies (HTQ; Allden et al., 1998, Mollica et al., 1992).

For the purposes of screening for alcoholism, the CAGE questionnaire was applied (Ewing, 1984). The CAGE consists of four “yes” or “no” questions, and two or more affirmative answers denote alcohol problem. The quality of partner/spouse relationship was determined by the DAS (Spanier, 1979). DAS is a relationship adjustment self-report measure and contains 32 items. Responses are mostly given on a 5-point scale, and some of the questions are dichotomous. The authors obtained four factors in a factor analysis, and the scale is, therefore, divided into four subscales. However, the total sum of scores is commonly used. Internal reliability for the total score was high (Cronbach’s alpha =0.95).

Brief Symptom Inventory (Derogatis, 1993) is a 53-item self-report inventory designed to assess the current level of psychological symptoms and distress. Symptoms are assigned to nine subscales that represent domains of psychopathology and for the purposes of this study, Depression and Anger—Hostility subscales were used. Items are answered on a 5-point Likert-type scale (0–4) that ranges from “Not at all” to “Extremely.” Reliability of the whole BSI is very high, and internal consistency on separate dimensions ranges from Cronbach’s alpha = 0.83 to Cronbach’s alpha = 0.92 in the traumatized persons, and from Cronbach’s alpha =0.69 to Cronbach’s alpha = 0.84 in general Croatian population (Stršljević, 2005).

**Statistical analysis**

Distribution of the results was presented as arithmetic mean ± standard deviation (SD). Differences between the groups were assessed using the χ² test and t-test. ANOVA was used for interval variables, whereas Fischer’s Least Significant Difference (LSD) post-hoc test and one-way analysis of variance were used for a more detailed analysis. Statistical significance was set at p <0.05. Linear regression analysis was used. Statistical analyses were performed using Statistical Package for Social Science for Windows v.11 (SPSS Inc., Chicago, IL, USA).

**Results**

To investigate differences in marital satisfaction, couples were further divided into four groups: group A1 where only male partner had PTSD, group A2 where both partners had PTSD, group B1 where neither partners had PTSD, and group B2 where only female partner had PTSD. Because in group B2, there were only five couples, the group was excluded from further analysis.

**Demographic characteristics of women in the experimental and the control group**

Women and men from three groups did not differ significantly regarding their age (F = 0.523, p = 0.594; F = 1,587, p = 0.207, respectively) with the average age for female participants being 44 and 92 (9,922) and for male participants 48 and 75 (9,876). Female partners differed in the educational level (χ² = 14,565; df =4; p =0.010) and economic status (χ² = 27,508; df=4; p =0.000) between the groups. Women from B1 group had higher level of education and higher economic status. Veterans also differed in education level (χ² = 6,816; df =4; p =0.029) and economic status (24,954; df =4; p =0.000). Veterans from A1 and A2 had significantly lower education level and lower economic status than the B1 group.

**Results in the DAS**

The differences on DAS score among the three groups were tested using one-way ANOVA. The analyses showed significant differences among the three groups of participants in the total DAS score (Table 1) both for female and male partners. LSD post hoc test shows that there is a significant difference between all three groups of veteran’s wives in marital adjustment scores. Wives whose partners do not have PTSD have significantly higher scores on DAS (105.8±13.39) than the other two groups (respectively). Also, wives in group where both partners are PTSD affected score significantly lower on DAS (90.34±16.01) compared with wives in group where only male partner has PTSD (81.59±24.65). LSD post hoc test for veterans’ marital adjustment shows that veterans who do not have PTSD (105.84±15.20) have significantly higher score on DAS than the two groups of veterans with PTSD (94.08±17.31; 89.94±14.18, respectively). Veterans who
are diagnosed with PTSD do not differ significantly on DAS score regarding their wives’ PTSD status. As we have found significant differences between groups in marital adjustment, further analysis was performed to examine which variables best explain dyadic adjustment. Table 2 provides the results of linear regression analysis, with total DAS score for women as the outcome variable, that is, total DAS score for men, and with B cluster, C cluster, and D cluster symptoms, depressiveness and hostility for both partners as contributing variables.

Results (Table 2) show that clusters B, C, and D of PTSD symptoms, hostility, and depression scores of wives and veterans explain up to 33.8% of female partner’s marital satisfaction and up to 17.6% of veteran’s marital satisfaction. When it comes to marital satisfaction of wives, his avoidance symptoms (6.3%), her level of depression, and her re-experiencing symptoms are significant predictors. None of the predictor variables have significant individual contribution to his marital satisfaction.

Also, women from the A groups report significantly lower marital satisfaction than their husbands. In cou-

Table 1. Differences in the DAS total score between groups

| Total DAS score | Men with PTSD, women without PTSD | Men and women with PTSD | Men and women without PTSD |
|-----------------|---------------------------------|------------------------|---------------------------|
|                 | \( (n=92) \) - A1               | \( (n=62) \) - A2       | \( (n=72) \) - B1         |
| Female          | 90.34 ± 16.01*                  | 81.59 ± 24.65*         | 105.8 ± 13.39*            |
| Male            | 94.08 ± 17.31                   | 89.94 ± 14.18          | 108.4 ± 15.20*            |
| Paired t-test   | \( t = -2.525, p = 0.013 \)     | \( t = -3.946, p = 0.000 \) | \( t = 0.080, p = 0.938 \) |

Notes: DAS, Dyadic Adjustment Scale; PTSD, posttraumatic stress disorder.
*The three groups differ significantly in mean value. LSD test \( p < 0.05 \).
**Men without PTSD differ significantly from the other two groups. LSD test \( p < 0.001 \).

Table 2. Linear regression analysis for the overall DAS scores for wives and husbands

| Measures | Female partner DAS | Male partner DAS |
|----------|--------------------|------------------|
|          | \( \beta \)        | \( R^2 \)         | \( \beta \)        | \( R^2 \)         |
| **Female partner PTSD clusters** | | | | |
| B symptoms | 0.251* | 0.134 | | 0.162 | 0.087 |
| C symptoms | -0.059 | -0.025 | | 0.063 | 0.026 |
| D symptoms | -0.154 | -0.069 | | -0.235 | -0.105 |
| **Male partner PTSD clusters** | | | | |
| B symptoms | 0.120 | 0.054 | | 0.044 | 0.020 |
| C symptoms | -0.346** | -0.148 | | -0.219 | -0.093 |
| D symptoms | 0.005 | 0.002 | | -0.017 | -0.007 |
| **Female partner BSI** | | | | |
| Depression | -0.231* | -0.143 | | -0.049 | -0.031 |
| Hostility | -0.062 | -0.040 | | -0.025 | -0.016 |
| **Male partner BSI** | | | | |
| Depression | -0.103 | -0.068 | | -0.167 | -0.109 |
| Hostility | -0.109 | -0.069 | | -0.062 | -0.059 |

Notes: BSI, Brief Symptom Inventory; DAS, Dyadic Adjustment Scale; PTSD, posttraumatic stress disorder.
*p < 0.05; **p < 0.01.
Discussion

Our results convincingly show that veterans’ PTSD is related to lower levels of marriage quality of their wives, who often encounter problems in their intimate/partner relationships. The results of our research are in accordance with a series of other studies into the effect of PTSD on partner relationships of Vietnam and Israeli veterans (Chrysos et al., 2005; Dekel et al., 2005; Dekel & Solomon, 2006; Galovski & Lyons, 2004; Nelson Goff et al., 2006), which also determined that PTSD symptoms directly affect veterans’ abilities to establish and maintain intimate relationships and are related to lower marital satisfaction.

Dyadic relationships become even more complex when both partners suffer from PTSD. In our sample, marital quality was significantly lower in couples where both partners had PTSD, compared with couples where only the veteran had PTSD or neither partner had PTSD. PTSD-affected wives as well as their partners suffer from emotional numbness and withdrawal. It is questionable whether they are able to perform family roles that have been imposed on them and satisfy their partners’ increased needs for support although being themselves affected by PTSD (Solomon, 1988). It could be assumed that these wives do not receive adequate and needed support from their husbands, which only adds to their psychological distress and dysfunctionality. In such case, family cannot provide a supportive context for the recovery of primary traumatized member (Figley & Blaine Everson, 2010).

Our study showed that husband’s avoidance symptoms significantly contribute to wife’s marital adjustment scores, which again is in concordance with previous results. Most researches on the functioning of marital relationships demonstrated that communication skills play a constituent role in general marital satisfaction and that emotional expression plays a key role in establishing and maintaining close and intimate relationships (Harkness & Zador, 2001; Riggs, Byrne, Weathers & Litz, 1998). Interaction of the symptoms of emotional numbness and emotional alienation in veterans’ family life creates an emotional gap and a serious functional loss to their wives (Nelson Goff et al., 2006; Rosenheck & Thomson, 1986). Veterans’ inhibited intimacy and expressiveness, limited emotional expression, lack of interest in social activities, and problems with family cohesion and sexual intimacy contribute to marital discord (Dekel & Solomon, 2006; Mason, 1990; Riggs et al., 1998).

Wives’ depressiveness significantly contributes to her marital adjustment that is expected because it is well recognized that marital dissatisfaction and depressive symptoms are associated (Balog et al., 2003; St John & Montgomery, 2009). An interesting finding is that a wife’s symptoms of re-experiencing traumatic events rather than avoidance symptoms significantly explain her marital adjustment. Similar results were obtained by Hamilton, Nelson Goff, Crow, and Reisberg (2009) who found that greater intrusion symptoms of female partners of Operation Iraqi Freedom (OIF) and Operation Enduring Freedom (OEF) veterans significantly predict relationship satisfaction scores. There are several possible explanations for our finding and it is important to underline that the women in our study were exposed to civil war traumatic events and their possible sufferings are rarely recognized as such and usually go untreated. Different studies have noted that women have the tendency to report more re-experiencing than other symptoms. Also, it is our speculation that living with a war veteran is a daily reminder of traumatic event and a possible point of resentment because his trauma is more “valuable.” Unlike the study of Evans et al. (2003), where veterans avoid symptoms and comorbid symptoms of anger and depression play a significant role in family functioning, in our sample, examined factors did not have an individual impact, rather the total clinical manifestation of PTSD together with hostility and depressiveness impacts veterans’ marital adjustment.

This research contains limitations. A relatively small number of respondents narrow the possibility of result generalization. Information was gathered based on self-assessment scales, without clinical evaluation. Drawing conclusions was also limited by a non-homogeneous sample in socio-demographic variables relating to educational level and economic status that can serve as mediators and mitigate the effect of PTSD on partner relationships. Even though PTSD is most frequently accompanied by comorbid mental and physical diseases (Bleich & Solomon, 2004; Kessler, Sonnega, Bromet, Hughes, & Nelson, 1995), this research did not examine the effect of such diseases on partner relationship. A group of participants in which only wives have PTSD would reveal more on PTSD effects on partner relationships and family functioning. Information on premorbid functioning of a couple, including potential adjustment risks and protection factors, would also complete the picture.

Without any doubt, couples where both partners have PTSD report the lowest marital satisfaction. This result demonstrates that in couples where both partners have PTSD, each of the partners creates his/her own system of functioning that may help them in carrying the burden of the chronic disease, but at the same time, it produces a negative impact on the spiral of mutual adjustment and marital quality (Nelson Goff & Smith, 2005).

Finally, the result of our research confirms the negative effect of war veterans’ PTSD on the quality of their marital relations, especially when both partners suffer
from PTSD. The result also highlights the importance of recognizing PTSD in wives of traumatized veterans as well as the importance of family approach in the treatment of PTSD.

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There is no conflict of interest in the present study for any of the authors.

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