

The contribution of captivity and Post-Traumatic Stress Disorder to marital adjustment of Israeli couples

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ABSTRACT

This study examined marital adjustment and relations among couples where husbands had been a prisoner-of-war (i.e., POW) and couples where husbands were veterans, but not POWs. The study also examined the relative contribution of the husband's post-traumatic stress disorder (i.e., PTSD) and POW experience to both spouses' marital adjustment. Results from 157 couples (85 former POWs and spouses as well as 72 veterans but not POWs and their spouses as controls) indicated that former POW couples had lower marital adjustment, sexual satisfaction, and self-disclosure, and higher verbal abuse than the control couples. Captivity indirectly influenced the husband's marital adjustment through his PTSD. In turn, PTSD had an indirect effect on both spouses' marital adjustment, fully mediated through marital relations variables.

KEY WORDS: marital adjustment • POWs • PTSD • self-disclosure
• sexual satisfaction • verbal and physical aggression

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Experiences of combat (e.g., Solomon et al., 1993) and prisoner-of-war (i.e., POW) captivity (e.g., Hunter, 1993) are highly traumatogenic experiences. Combatants face physical injury and loss of life. Besides those risks, POWs usually suffer from intentional torture and systematic humiliation and deprivation aimed at breaking their spirit (Herman, 1992). The most common psychological outcome of both, as in other traumatic experiences, is posttraumatic stress disorder (PTSD – see Reeves, Parker, & Konkle-Parker, 2005 on combat veterans; and Engdahl, Dikel, Eberly, & Blank, 1997 on POWs).

PTSD is a complex disorder consisting of three sets of symptoms: intrusion (e.g., nightmares and recollections of the traumatic event), avoidance (e.g., emotional withdrawal, detachment, and loss of interest in previously enjoyed activities) and hyper-arousal (e.g., startle reaction, concentration, and sleep difficulties and irritability). Each of these clusters of symptoms can potentially affect the quality of the marital relationship. Intrusive symptoms cause the traumatized husband to be preoccupied with self; avoidance symptoms undermine his capacity for sharing and intimacy; and hyper-arousal symptoms increase interpersonal conflict (Cook, Riggs, Thompson, & Coyne, 2004; Dent et al., 1998; Riggs, Byrne, Weathers, & Litz, 1998). Empirical findings have consistently confirmed that PTSD is associated with reduced marital adjustment and intimacy among both partners (Jordan et al., 1992; Mikulincer, Florian, & Solomon, 1995; Solomon et al., 1992), reduced sexual functioning (Kotler et al., 2000; Letourneau, Schewe, & Frueh, 1997), and increased levels of marital violence among husbands (Beckham, Moore, & Reynolds, 2000; Evans, McHugh, Hopwood, & Watt, 2003; Frueh, Henning, Pellegrin, & Chobot, 1997).

Only a few studies have focused on couples where the husband had been a POW. An uncontrolled clinical study compared perspectives of the marital relationship among American World War II POWs and their wives (Bernstein, 1998). In this study, spouses had similar views of the POW's emotional distance (e.g., mood swings and sudden outbursts of anger), but differed on their perceived level of communication, sharing, and self-disclosure. In all three areas, husbands reported higher levels than did wives. A second study compared Australian couples where the husband had been a World War II POW with a matched group of couples where the husband was a World War II veteran but not a POW (Dent et al., 1998). Their findings showed no difference in levels of anxiety and intimacy reported by POWs and non-POWs or by their wives. Cook et al. (2004) investigated marital relations among American World War II POWs and reported that those with PTSD reported more marital distress and less marital satisfaction than POWs who did not report PTSD. Cook et al.'s (2004) findings suggest that the marital problems of former POWs may be rooted in PTSD and not in captivity alone; however, the study did not use a control group of veterans.

The current study, designed to enhance understanding of marital adjustment among former POWs, examined several questions. First, we examined whether captivity itself has unique direct and indirect effects on marital adjustment. Second, because captivity is associated with PTSD, we also

examined the direct and indirect effects of PTSD on marital adjustment. In this way, we were able to address the effects of the traumatic event as well as its consequences for marital adjustment (Bradbury, Cohan, & Karney, 1998). Furthermore, we examined the role of three key variables that contribute to marital adjustment and are known to be impaired among PTSD couples: spousal aggression (Beckham et al., 2000; Evans et al., 2003; Frueh et al., 1997), sexual dissatisfaction (Letourneau et al., 1997; Kotler et al., 2000), and self-disclosure.

Self-disclosure, defined as the tendency to share feelings and thoughts with one's partner (Finkenauer & Hazam, 2000), provide partners with the opportunity to maintain intimacy, openness and trust (Finkenauer & Hazam, 2000). Self-disclosure is related to greater emotional involvement and relationship satisfaction among veterans with PTSD (Bolton, Glenn, Orsillo, Roemer, & Litz, 2003; Carroll, Rueger, Foy, & Donahoe, 1985).

Finally, the few studies which focus on marital adjustment among war veterans and POWs do so from both spouses' perspectives (e.g., Dent et al., 1998; Jordan et al., 1992). Such a dyadic approach would highlight the role of the marital couple as an interpersonal system and indicate that the perceptions of two individuals need to be considered simultaneously (Kenny & Cook, 1999).

Therefore, this study's first aim is to examine marital adjustment, spousal aggression, self-disclosure, and sexual satisfaction among former POWs and their wives, three decades after the husband's release from captivity. This group will be compared to a matched control group of combat veterans (but not POWs) and their wives.

The second aim was to examine the unique contributions of war captivity, PTSD distress level, male verbal and physical aggression, sexual satisfaction, and self-disclosure to perceived marital adjustment. Based on both partners' assessments, we examined whether captivity and PTSD had direct effects on marital adjustment, or whether those variables had an indirect effect that was mediated through the marital relations variables (spousal verbal and physical aggression, sexual dissatisfaction, and self-disclosure). Furthermore, we examined whether the relationships between these variables were different among POWs and combat veterans.

Method

Sample and procedure

The sample consisted of 157 couples where the husband was a veteran of the 1973 Yom Kippur War. The sample was divided into two groups: 85 former combat soldiers who had been held captive as POWs and their spouses; and 72 control couples, in which the husband fought in a combat unit in the same war but had not been in captivity. The control group was drawn from combat soldiers who fought on the same fronts as the POWs. Control participants were selected on the basis of their similarity to the POWs in relevant military and personal variables such as age, combat exposure, and rank.

The names of the veterans in both groups were obtained in 1993 from the records of the Israeli Ministry of Defense. The sample only included veterans who were currently married or cohabiting with a spouse, and whose partner agreed to participate. The questionnaire was administered in the couple's home or in another location of their choice. Before completing the questionnaire, participants signed an informed consent form.

The two groups did not differ on socio-demographic variables such as marital history, length of marriage (mean = 27.37, $SD = 6.19$), divorce rate (9.5% of the participants had divorced), age of both partners (mean = 53.37, $SD = 4.68$, for veterans and 53.36, $SD = 4.68$, for wives) or number of children (mean = 3.25, $SD = 1.21$). The groups did differ, however, on receipt of mental health treatment: 45% of the POWs received mental health treatment, whereas no combat veterans received treatment.

Measures

The first measure was given only to husbands, while the remaining four questionnaires were administered to both the husband and wife.

Post Traumatic Stress Disorder. We assessed men's PTSD symptomatology with the Post Traumatic Stress Disorder Inventory (PSTDI), a self-report scale consisting of 17 statements corresponding to the 17 core PTSD symptoms in the DSM-IV (APA, 1994). Each statement was accompanied by a 4-point Likert-type scale asking men to indicate how consistently they had experienced the symptom during the previous month (ranging from 1 (not at all) to 4 (usually)). The Cronbach's Alpha among the 17 items was high (.94).

Dyadic adjustment. The 32-item scale (Spanier, 1976) is divided into four sub-scales assessing marital adjustment along dimensions of: consensus, (the extent of agreement/disagreement between the couple on various issues e.g., handling family finances; demonstration of affection), cohesion (e.g., "Do you and your partner engage in outside interests together?"), satisfaction (e.g., "How often do you and your partner quarrel?"), and affectional expression (e.g., "Do you kiss your partner?"). Participants were asked to indicate the extent to which each item describes their current marital relationship. A dyadic adjustment score was calculated by summing up the ratings on the 32 items, with higher scores reflecting better adjustment. The scale has been used extensively among Israeli populations, including couples undergoing infertility treatment (Mikulincer, Horesh, Levy-Shiff, Manovich, & Shalev, 1998) and patients with severe affective disorders (Horesh & Fennig, 2000).

Sexual satisfaction. We assessed sexual satisfaction with the Index of Sexual Satisfaction (ISS; Hudson, Harrison, & Crosscup, 1981). This 25-item self-report scale taps three aspects of sexual satisfaction: personal sexual satisfaction, satisfaction with partner's sexuality, and satisfaction with sexual interaction. Participants respond to each item on a Likert-type scale ranging

from 1 (rarely) to 5 (most of the time). The ISS has high reliability (Cronbach's Alpha = .92).

Self-disclosure. The Self-Disclosure Index (SDI; Miller, Berg, & Archer, 1983) measures the frequency and content of self-disclosure. This inventory consists of 10 questions that can be posed regarding five target figures: mother, father, same-sex close friend, opposite-sex close friend, and partner. In the current study, participants responded only about their partner ("I tell my husband/wife my most horrifying fears"). Participants are asked to respond to each item on a scale of 1 (not at all) to 6 (very applicable). Each participant's score was calculated as the mean of his/her 10 ratings: the higher the score, the greater the self-disclosure. The Cronbach's Alpha internal consistency value for the current sample was high (.94).

Conflict tactics. The veterans' aggression against their wives or girlfriends was assessed by the Conflict Tactics Scale (Straus, 1979). This 18-item self-report scale lists acts of aggression that an individual might use when in conflict. This scale includes multiple forms of verbal aggression (e.g., insults, swearing, yelling) and physical aggression (e.g., throwing things, pushing, grabbing, shoving, or attacking with a knife or gun). Participants were asked to indicate how often they had enacted each behavior toward their partner in the previous year (1 = never, 6 = every day). Separate indices reflect frequencies of verbal and physical aggression. The CTS has established internal consistency, with Cronbach's alpha values ranging from 0.87 to 0.92 in samples of husbands and wives.

Data analysis

The first aim of the study was to examine differences between groups (POW vs. control couples) and gender in marital adjustment, spousal aggression, self-disclosure, and sexual satisfaction. This was done by a series of ANOVAs. In cases of significant interactions, post hoc Bonferroni tests were conducted.

The second aim was to examine whether captivity and PTSD had direct effects on marital adjustment, or whether these effects were mediated through the marital relations variables (spousal verbal and physical aggression, sexual dissatisfaction, and self-disclosure). Furthermore, we examined whether the relationships between these variables were different among POWs and combat veterans. To answer these questions, we used Structural Equation Models (SEM), in accordance with Kenny and Cook's recommendations for dyadic analysis (Kenny & Cook, 1999). The SEM evaluations were conducted using AMOS-4 software (Arbuckle & Wothke, 1999). The use of SEM has several advantages. It enables simultaneous evaluation of several regression models, as well as manipulation of constraints to allow for comparison of the same regression models among different groups.

Results

Level of PTSD symptoms among POWs versus combat veterans. A t-test was conducted to examine the differences between POWs and control veterans with regard the level of PTSD symptoms (see Table 1). Former POWs reported much higher levels of PTSD symptoms than did control veterans.

Captivity and gender differences in marital adjustment, sexual satisfaction, self-disclosure, and husbands' aggression. Three ANOVAs were performed to examine the effect of group (POW vs. control couples) and gender on marital adjustment, sexual satisfaction, and self-disclosure. Table 1 presents the means, standard deviations, and *F* values by group and gender.

As can be seen, significant group and gender differences were found in marital adjustment, sexual satisfaction, and self-disclosure. However, these effects were qualified by significant interactions with group and gender in each of the outcomes. To ascertain the source of the interactions, post hoc Bonferroni tests were conducted. These comparisons indicated that POWs perceived their marital adjustment as worse than did the veterans in the control group. The differences between the wives in the two groups were insignificant. Put another way, significant gender differences were observed among the POW couples, but not among the control couples. A similar significant pattern was found for sexual satisfaction and self-disclosure.

TABLE 1
Group and gender comparisons

Variables	POWs		Controls		Group F	Gender F	Group* Gender F
	H	W	H	W			
	M (SD)	M (SD)	M (SD)	M (SD)			
Marital adjustment	111.50 (20.51)	122.24 (23.03)	123.72 (18.68)	123.72 (20.02)	3.97*	8.29**	8.29**
Sexual satisfaction	3.58 (0.72)	3.88 (0.78)	4.04 (0.67)	4.09 (0.58)	9.90*	8.34**	4.34*
Self-disclosure	3.67 (1.26)	4.48 (1.23)	4.29 (1.31)	4.57 (1.09)	4.56*	21.00***	4.95*
Verbal aggression	1.62 (0.72)	1.61 (0.79)	1.35 (0.38)	1.36 (0.39)	8.67**	0.00	0.02
Physical aggression	1.09 (0.41)	1.12 (0.45)	1.04 (0.14)	1.02 (0.07)	2.20	0.05	2.10
PTSD symptoms	2.75 (0.75)		1.55 (0.56)		t(152)= 11.12***		

H = Husband W = Wife
p* < 0.05; *p* < 0.01; ****p* < 0.001.

A second set of ANOVAs examined the effects of group (POW vs. control couples) and gender on verbal and physical aggression. Group was found to have a significant effect on verbal aggression, as POW couples reported higher levels of verbal aggression than the control couples. Neither gender nor the interaction between group and gender had a significant effect on verbal aggression. On the other hand, neither the effect of group or gender, nor their interaction, significantly influenced physical aggression.

Predictors of marital adjustment. In the first stage, we examined whether captivity and PTSD had direct effects on marital adjustment, or whether such effects were mediated by the marital relationship variables (spousal verbal and physical aggression, sexual dissatisfaction, and self-disclosure). Figure 1 presents the theoretical model, which encompasses both direct and indirect effects of captivity and PTSD on the marital relations variables as well as on marital adjustment. In the second stage, we examined whether the model for predicting marital adjustment differed for POW and non-POW couples. In other words, does being a POW moderate the relationship between PTSD and marital adjustment, and if so, what are the differences between the two groups in the model?

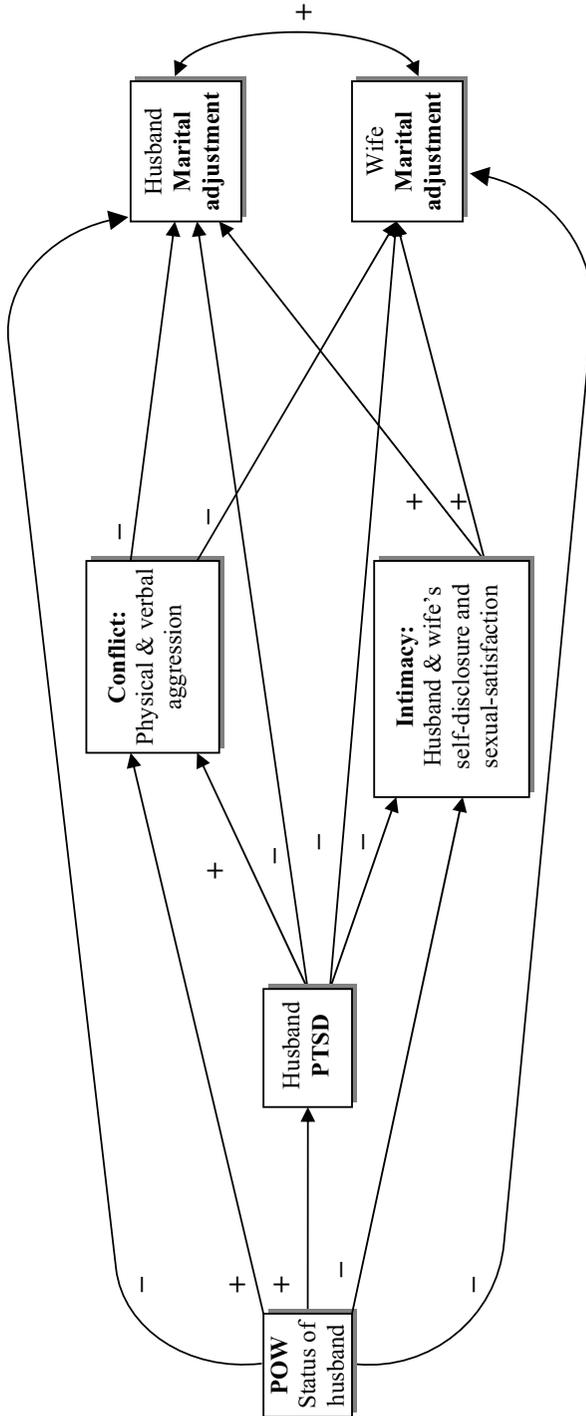
To determine whether captivity and PTSD had direct or indirect effects on marital relations and marital adjustment, we estimated the theoretical model, allowing for both direct and indirect effects of POW status and PTSD (Figure 2 presents the final results). The model indicated that being in captivity had a direct effect on PTSD, and that PTSD had a direct effect on marital relations variables, which in turn affected the marital adjustment of both husband and wife.

Therefore, all the direct paths leading from POW status to the marital relations variables, and to marital adjustment of both husband and wife, were not significant, and were dropped from the final model. Similarly, the direct paths leading from PTSD to marital adjustment of both husband and wife were not significant and were dropped from the final model.

To examine whether being a POW has a moderating effect that influences the relationship between PTSD and marital relations variables, or the relations between those variables and marital adjustment, we compared the POW group to the veteran soldiers group, using group comparisons in SEM. For that purpose, two models were compared. One was the default model, which replicated the final model described in Figure 2 (omitting POW as a predictive variable), and allowed different regression weights and correlations to be calculated for each group. The alternative model was constrained for equality between the two groups in terms of regression weights and correlations (means and variances were allowed to differ). No significant difference was found between the two models ($\Delta\chi^2 = 20.63$, $df = 20$, $p = 0.42$). In other words, the effects of the independent variables on the dependent variables did not vary between the two groups, ruling out the possibility that being a POW had a moderating effect on marital relations variables and marital adjustment.

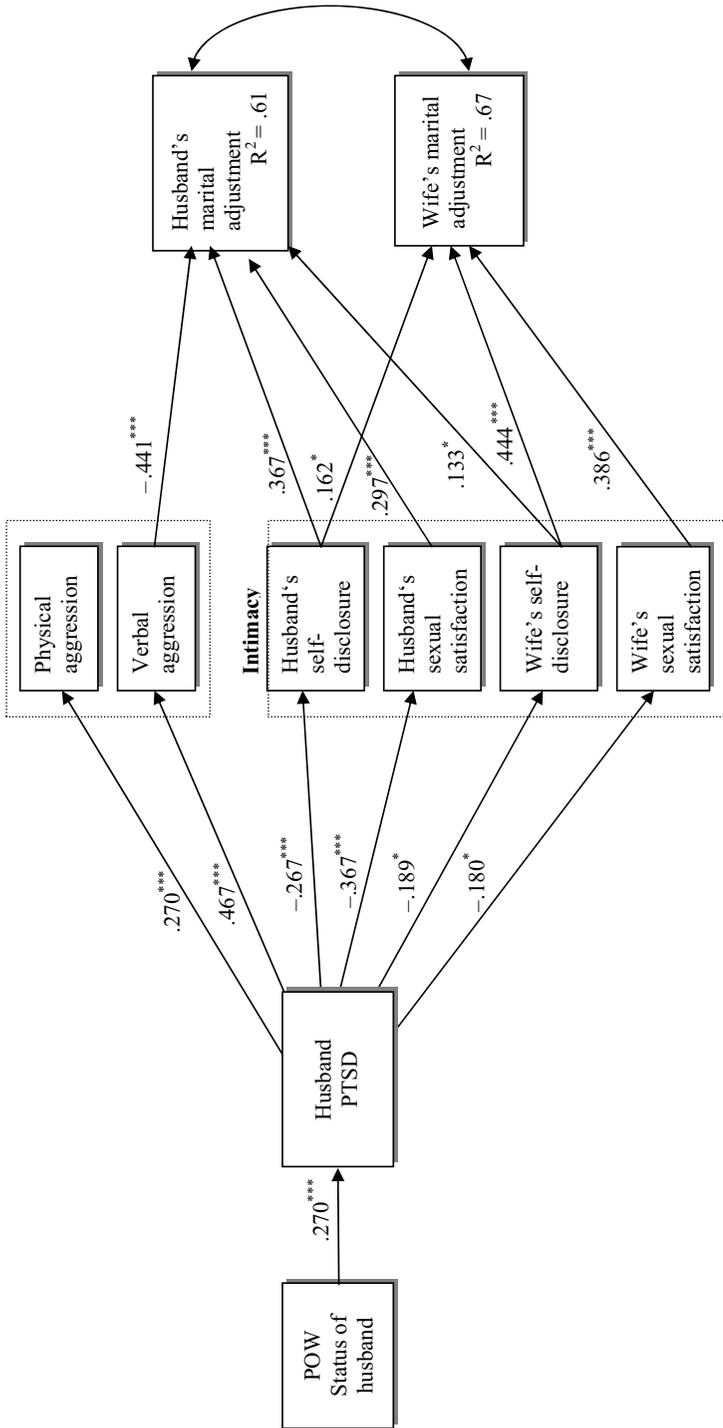
To summarize the findings of the SEM models, captivity was found to have an indirect effect on the husband's marital adjustment, which was fully

FIGURE 1
Theoretical model – direct and indirect effects of POW status and PTSD on couples' conflict, intimacy, and marital adjustment



Note. The model assumes that both being a POW, and suffering from PTSD symptoms, may have a direct and indirect effect on relationship variables, and on marital adjustment of each of the partners. Relationship variables are represented by two major categories – intimacy on the one hand, and conflict on the other. The model assumes that marital adjustment of each spouse may be related to marital adjustment of the other spouse; independently from the effect, other variables may have on each and both. One-sided arrows indicate regression paths between variables. Two-sided arrows indicate correlation paths between variables. A plus sign [+] indicates expected positive relations between variables, and a minus sign [-] indicates expected negative correlations between variables.

FIGURE 2
Final empirical dyadic model: Indirect effects of husband's POW status and PTSD on marital adjustment of husbands and wives
conflict



$\chi^2(df=2) = 3.46^{ns}$; $NFI = 0.999$; $RFI = 0.982$; $CFI = 1.000$; $TLI = 0.992$; $RMSEA = 0.007$.

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

Notes:

1. No structural differences were found between POWs and Veterans.
2. The model allowed for correlation among residual terms of the couple-relationship variables, and similarly, for correlation between the residual terms of husband and wife's marital adjustment.
3. Arrows indicate path coefficients, which are standardized regression weights (betas), the coefficients value is shown above the relevant arrows.
4. The model examined all possible direct and indirect effects. Insignificant paths are omitted for clarity of presentation.

mediated through the husband's PTSD. This, in turn, was found to have an indirect effect on the husband's and wife's marital adjustment, which was fully mediated through the marital relations variables of spousal verbal and physical aggression, sexual dissatisfaction, and self-disclosure. More specifically, husband's PTSD was positively associated with physical and verbal aggression, and negatively associated with sexual satisfaction and self-disclosure for both spouses. In addition, verbal aggression decreased husbands' marital adjustment. Sense of sexual satisfaction increased each spouse's own marital adjustment, but had no significant effect on the partner's marital adjustment. Finally, self-disclosure increased each spouse's marital adjustment as well as his or her partner's adjustment, albeit to a lesser degree.

Discussion

The first aim of this study was to examine differences between former POWs and control veterans in levels of PTSD, sexual satisfaction, self-disclosure, husband's verbal and physical aggression, and marital adjustment. The POWs reported higher levels of PTSD, more frequent use of aggressive conflict tactics in their relationships, and less sexual satisfaction and self-disclosure. These findings highlight the enduring toll of being in captivity. Still, it is not clear whether the effects of war captivity are unique, or whether they are manifested in the higher levels of PTSD. This question led us to examine the structure of relations between PTSD, sexual satisfaction, self-disclosure, husband's aggressive behaviours, and marital adjustment.

The findings indicate that PTSD had no direct effect on marital adjustment. Rather, its effect on marital adjustment was manifested via its impact on the ability to maintain and commit to intimacy in relationships. This finding is consistent with our knowledge of the repercussions of PTSD on spousal interaction. The literature consistently reports that men with PTSD often lose some of their sexual drive and have difficulties with sexual functioning (Kotler et al., 2000; Letourneau et al., 1997). Moreover, they tend toward emotional numbing and withdrawal; and they are prone to outbursts of verbal and sometimes physical aggressive behaviors (Beckham et al., 2000; Evans et al., 2003; Frueh et al., 1997). In addition, symptoms of PTSD such as intrusive thoughts, lack of sleep or sleep difficulties, and recurrent nightmares tend to impair the individual's abilities for intimate expression and self-disclosure, inhibit sexual satisfaction, and heighten the tendency to engage in conflict with one's partner. Evidently, such symptoms affect not only the husband with PTSD, but also affect his wife's ability to engage in intimate self-disclosure and achieve sexual satisfaction. This finding is highly relevant to our understanding of marital adjustment among couples where one spouse has PTSD. Thus, PTSD has a direct effect on the non-symptomatic partner's self-disclosure and sexual satisfaction, which reduce the marital adjustment of both partners.

Furthermore, the study examined whether being a POW may create additional impairment in those who were in captivity, rendering their intimate

relationships different from those of non-POWs. The results indicate that although captivity increases the probability of PTSD which, in turn, increases the chances of reduced self-disclosure and sexual satisfaction in the marital relationships, no inherent difference was found between non-POW veterans and POWs in the way PTSD affects their marital adjustment. This finding supports the argument that the effects of PTSD on marital adjustment are generalized, and that they are fully mediated through self-disclosure, sexual satisfaction, and conflict behavior of the person with PTSD and his or her spouse.

The current sample has several unique characteristics. First, the Israeli prisoners were held for periods ranging from six weeks to eight months, whereas the American POWs in the Far East, for example, were held for several years, during which they were subjected to prolonged and repeated torture under extremely harsh physical conditions and deprivation (Goldstein, van Kammen, Shelly, Miller, & van Kammen, 1987; Sutker & Allain, 1996). These differences may explain the relatively low rates of PTSD among the participants in our sample compared with the 30% through 76% among veterans examined 40 to 50 years after World War II (Zeiss & Dickman, 1989; Sutker & Allain, 1996).

Second, the effects of PTSD on marital adjustment, as well as on divorce rates, are relatively limited. Reports have revealed much higher divorce rates among Vietnam veterans than among the rest of the US population (Center for Policy Research, 1979). However, these results have not been corroborated among Israeli couples. Data on Israeli couples indicate no upsurge in separation and divorce among traumatized veterans; divorce rates among these couples were no different from those of other Israelis. Two primary explanations can be offered for the lower divorce rate among Israeli veterans. First, Israeli society has maintained a traditional, familial orientation, where family unity is still considered a central value (Cohen, 2003). The second explanation derives from the cultural significance of being a veteran, and especially being a POW in Israel. These men were sent by Israel Defense Forces – and indirectly by Israeli society at large – to perform a mission. They have suffered and been tortured, and their wives are expected to stay with them despite the obstacles (Dekel, Goldblatt, Keidar, Solomon, & Polliack, 2005). Moreover, it is possible that because most of the veterans with PTSD are in therapy, they are better able to cope with their difficulties and life is easier for their wives.

Several limitations should be noted. First, assessment of PTSD among former POWs was based only on self-report questionnaires. Previous findings show a high degree of consistency between assessments based on self-reports and those made by clinicians (Solomon et al., 1993). Second, the study did not include a group with husbands who had not undergone a potentially traumatogenic experience. In addition, there was no control for other life experiences, including wives' traumatic experiences. In addition, notwithstanding the basic assumption that PTSD impairs marital adjustment, the possibility that marital relations also affected the severity of PTSD cannot be ruled out owing to the cross-sectional research design. Further studies which incorporate longitudinal designs with multi-wave assessments could

supply a better understanding of the developmental course of marriage (Bradbury et al., 1998).

Nonetheless, the study provides further evidence that exposure to traumatic events per se does not substantially impair men's marital adjustment. It indicates that the impairment is anchored in their PTSD and in its effect on their ability to engage in intimate behavior, such as self-disclosure and sex. It also increases their tendency to engage in conflict behavior. In terms of practice, the findings indicate that former POWs should not be viewed as a homogeneous, undifferentiated group and that those with PTSD require special attention. The findings also have implications for treatment of PTSD sufferers. Most interventions among PTSD victims focus on the victim's trauma symptoms. The findings that PTSD is implicated in marital maladjustment suggest that attention should also be paid to the marital relations of PTSD casualties, and to the way in which PTSD affects their own marital adjustment and that of their wives. A more comprehensive understanding of the marital adjustment in these families could improve their adjustment, as well as improving the outcomes of PTSD interventions (TARRIER, Sommerfield, & Pilgrim, 1999).

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