

Traumatization, Marital Adjustment, and Parenting among Veterans and Their Spouses: A Longitudinal Study of Reciprocal Relations

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Despite considerable research on secondary traumatization, the ramifications of veterans' and their wives' posttraumatic stress symptoms (PTSS) for the family system remain largely uninvestigated. Beginning to fill this gap, the current study aims to investigate the reciprocal relations between both spouses' PTSS and marital adjustment, and the implications these bear for their parental functioning. Two hundred and twenty-five Israeli veterans (mean age = 58.62, SD = 7.6) from the 1973 Yom Kippur War and their wives (mean age = 58.28, SD = 5.79) were examined at two points in time: 30 (T1) and 35–37 years after the war (T2). Analysis included longitudinal actor–partner interdependence modeling and sequential mediation analyses. The results show that higher PTSS among the wives at T1 predicted higher PTSS among husbands at T2, and vice versa, and predicted their husbands' marital adjustment at T2. Moreover, wives' PTSS at T1 had a significant effect on parental overinvolvement of both parents at T2, but neither their PTSS nor their husbands' PTSS had an impact on positive parenting. In the intrapersonal domain, better marital adjustment at T1 predicted positive parenting among both spouses in subsequent measurement. Interpersonally, wives' lower marital adjustment at T1 predicted husbands' higher parental functioning, but not vice versa. Furthermore, marital adjustment mediated the association between PTSS and positive parenting for both spouses. The results emphasize the detrimental ramifications of war trauma on the interpersonal domains in veterans' families. Hence, both marital and parental consequences of trauma should be considered in clinical family interventions.

Keywords: War Trauma; Posttraumatic Stress; Secondary Traumatization; Marital Adjustment; Parenting; Actor–Partner Interdependence Model

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INTRODUCTION

It is widely recognized that war trauma has detrimental effects on veterans' mental health particularly manifesting in posttraumatic stress symptoms (PTSS), characterized by symptoms such as intrusive thoughts, negative cognitions and moods, hyperarousal, and avoidance (American Psychiatric Association, 2013) that often undermine

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interpersonal functioning (Monson, Taft, & Fredman, 2009). Moreover, war experiences not only impact the lives of veterans themselves but also impact their significant others, potentially causing loved ones to show a variety of mental and interpersonal problems (Monson et al., 2009). Secondary traumatization (ST) describes people in close contact with a traumatized person who may indirectly display PTSS, similar to those exhibited by the trauma survivor (Figley, 1995). The Diagnostic and Statistical Manual of Mental Disorders (American Psychiatric Association, 2013) specifies that indirect exposure to traumatic events can be considered traumatic, suggesting that in specific cases veterans' spouses might suffer from PTSS (Monson et al., 2009).

As people traverse from the status of bachelors to that of family members, they typically take up two important social roles: first, that of a marital partner, and gradually, that of a parent. In the aftermath of trauma, the functioning in and quality of both domains are affected (Catherall, 2005). Veterans' hyperarousal and irritability, for instance, may give rise to outbursts that generate conflict and decrease conflict-resolution capacities (Miller et al., 2013). Avoidance symptoms, specifically emotional numbing, may impede intimacy and marital communication and thus contribute to relationship dysfunction (Monson et al., 2009). However, the complex interplay between war trauma and both its marital and parental ramifications remains under-investigated.

While past research has attended to the symptomatic ramifications of war trauma among veterans and their wives separately, as far as we know, no study offers examination of the reciprocal relationship of PTSS, marital relationship, and parenting among veterans and their wives as dyads, and not in a longitudinal design. Further, numerous studies have demonstrated that one of the most prominent factors contributing to the development of PTSS in wives of combat veterans concerns their husbands' symptomatology (Al-Turkait & Ohaeri, 2008), yet they neglect to address the reverse direction. The current study aims to fill these gaps in the literature.

Marital Adjustment Following War Traumatization

The use of the term "marital adjustment" in the current study refers to the subjective perception of several aspects of the marital relationship: satisfaction, consensus, cohesion, and affection (Spanier, 1976). Research has shown that marital adjustment and mental state of both marital partners are interrelated (Proulx, Helms, & Buehler, 2007).

The reciprocal relations bear potential relevance for the unique context of families wherein one spouse suffers from direct war induced traumatization and the other from a secondary reaction. However, most studies have found that the association between combat exposure and marital maladjustment have been mediated by the veteran's PTSS severity (Sayers, Farrow, Ross, & Oslin, 2009), while neglecting the reciprocal processes between partners. The current study is innovative in this respect as it assesses the impact of the wives' ST on both partners' psychological and interpersonal status.

Parenting Following War Traumatization

Parenting may also be affected by PTSS, yet little attention has been devoted to the effects of war trauma on parenting. One cross-sectional study has revealed a negative relationship between PTSS severity and parenting satisfaction among Vietnam combat veterans with young children (Samper, Taft, King, & King, 2004). Similarly, studies focusing on veterans' parenting capacities indicate that veterans suffering from combat-induced stress reactions show negative self-perceptions of their paternal abilities and reduced satisfaction from their parental roles and functioning (Samper et al., 2004; Solomon, Debby-Aharon, Zerach, & Horesh, 2011). Furthermore, studies on Holocaust survivors have found that survivors oscillated between fear of intimacy and the need to compensate and

be overprotective in their relationship with their children (Cohen, Dekel, Solomon, & Lavie, 2003). Despite the growing interest in veterans' and their family members' psychological states after trauma and the latter's relationship with both partners' marital and parental roles, the effect of wives' ST on their own as well as on their husbands' parenting has not been sufficiently studied.

Are Marital Adjustment and Parenting Related? A Family Perspective

The family systems perspective (Minuchin, 1974; Minuchin, Nichols, & Lee, 2007) directs attention to the mutually influential role that each familial subsystem (e.g., marital, father-child, and mother-child) has on other subsystems. The literature suggests two main potential processes explaining the connections between marital discord and parenting: *spillover* and *compensation*. According to the spillover hypothesis (Erel & Burman, 1995), negative emotions, affect, and moods experienced within the marital relationship transfer to the parent-child relationship and undermine optimal parenting practices. In other words, conflict and hostility in the marital relationship are likely to cause dysfunctional parent-child interactions. In contrast, proponents of the compensatory hypothesis (Engfer, 1988) claim that marital partners in unsatisfying, conflict-laden relationships seek to counteract this state by nurturing a more intimate relationship with their child in order to gain an affectionate and supportive ally. While potentially comforting to the parents, such behaviors are believed to impede the child's psychological autonomy and development.

As an extension of the family systems theory, the Family Adjustment and Adaptation Response (FAAR) Model provides insight into the relationship between traumatization, marital adjustment, and parenting in former veterans. The FAAR Model (Patterson, 2002) emphasizes processes whereby exposure to major adversities causes overload of stress that compromises the family subsystems and causes significant disequilibrium. Adapting to nonnormative chronic stressors, such as PTSS, often leads to the disruption of boundaries between the subsystems, whereby stress experienced in one system may spill over to the other (Patterson, 2002).

Most empirical findings endorse the spillover hypothesis, linking marital discord to various negative outcomes in the parent-child subsystem, such as less sensitive and less involved parenting, reduced parental warmth and responsiveness (Easterbrooks & Emde, 1988), more conflicts in parent-child interactions (Katz & Woodin, 2002), and less parental support and engagement (Kitzmann, 2000). Nevertheless, a few studies have provided empirical support for compensatory processes in the parent-child subsystems. These show that mothers who experienced marital discord displayed higher levels of warmth and sensitivity toward their child (Belsky, Youngblade, Rovine, & Volling, 1991) were more involved and inquisitive, and provided more feedback in interactions with their child when compared to nondistressed mothers (Brody, Pellegrini, & Sigel, 1986). Furthermore, some indications for gender differences with regard to spousal difficulties and parenting were proposed. For instance, fathers' parenting, in comparison to mothers', may be negatively influenced to a higher degree by marital discord, indicating stronger spillover (Krishnakumar & Buehler, 2000). Compensatory effects, however, were found in studies investigating the mother-child relationship (Belsky et al., 1991; Brody et al., 1986).

While most of these studies were either cross-sectional or retrospective, one exceptional longitudinal study investigated the effect of changes in combat-induced PTSS on parenting and marital adjustment (Gewirtz, Polusny, DeGarmo, Khaylis, & Erbes, 2010). Its findings indicated that increases in PTSS were associated with poorer marital adjustment and greater perceived parenting challenges. However, this study assessed the longitudinal change over the course of only 1 year, and focused solely on the veterans' perspective. In

an attempt to shed additional light on these issues, the present study set out to longitudinally examine the impact of war traumatization on the family system by investigating the perspectives of both husbands and wives, as well as their reciprocal influences and the effect on parenting.

The hypotheses of the current study were then fourfold: (H1) Wives' higher PTSS will predict higher husbands' (i.e., veterans') PTSS; (H2) Wives' PTSS would negatively predict husbands' marital adjustment and wives' marital adjustment would affect husbands' PTSS; (H3) Both partners' PTSS would affect both partners' parenting; and (H4) One spouse's marital adjustment will play both a cross-sectional and longitudinal mediating role between her/his PTSS and parenting, and will affect her/his own as well as the other spouse's parenting.

METHODS

Participants and Procedure

The current study is part of a multi-cohort longitudinal study of Israeli combat veterans of the 1973 Yom Kippur War and their spouses. Data were collected by administering questionnaires to the veterans, including ex-prisoners of war, at three time points: 18 (1991), 30 (2003), and 35 (2008) years after the war (for additional information see Solomon, Horesh, Ein-Dor, & Ohry, 2012). Data were collected from the spouses 30 (2003) and 37 (2010) years after the war. The current study focuses on a subset of this sample, namely combat veterans and spouses who participated in 2003 (T1) and 2008–10 (T2).

In the 1991 assessment, 520 potential combat veterans were contacted and 349 veterans agreed to participate. Of these, 287 veterans participated in 2003 (T1) (51 could not be located or refused to participate, 5 had died, and 6 could no longer participate due to mental deterioration). In 2008 (T2), the original 1991 veterans were re-contacted and 289 veterans participated. Regarding the dropout participants between T1 and T2, 49 could not be located or refused to participate, 25 had died, and 6 could no longer participate due to mental deterioration. Eighty-two veterans were added to the sample in T2.

The husbands' demographics for T1 and T2 are age ($M = 57.9$, $SD = 5.09$), years of education ($M = 13.9$, $SD = 3.9$), and employment status: 57.2% were working in full-time jobs, 13.3% had part-time jobs, and 29.5% were not working (see Solomon et al., 2012, for further details).

Data were collected from veterans' wives at T1 and T2 (Greene, Lahav, Bronstein, & Solomon, 2014). Out of the 230 veterans participating at T1, 213 were married or had a partner, of which 156 (73.2%) agreed to participate. In T2, 250 of the veterans were married and 172 (68.8%) of the wives agreed to participate. Following Israel Defense Forces and Tel Aviv University Review Board's approval, we contacted the veterans and their wives and obtained written informed consent. The questionnaires were administered at the participants' home or at another location of their choice. Wives' demographics are: age ($M = 58.28$, $SD = 5.79$), years of education ($M = 14.6$, $SD = 3.17$), years of marriage ($M = 34.20$, $SD = 9.19$), number of children ($M = 3.23$, $SD = 3.00$), employment status (47.7% of the women were working in full-time jobs, 20.9% had part-time jobs, and 31.4% were not working). For further information, see Greene et al. (2014).

Handling Missing Data

Couples were included in the sample only if both veterans and their wives participated in at least one wave of measurement. Across variables and partners, 17–30% values were missing. Little's (1988) missing completely at random (MCAR) model, aimed to analyze missing values, revealed that the data were not MCAR, $\chi^2(235) = 269.2$, $p = .06$. Additional t -tests showed that the missing values in some of the variables were related to the

observed data: Specifically, husbands with missing values at T2 were low in PTSS at T1. Furthermore, wives with missing values at T2 had reported higher marital adjustment at T1. Missing data were replaced with maximum likelihood (ML) estimations when running models in AMOS 21 (Arbuckle, 2012). This method uses all available data for each participant in order to partially recover missing information from earlier or later measurements. This study utilized data measured for partners and across waves to increase likelihood for optimal estimations (Collins, Schafer, & Kam, 2001). The final sample consisted of 225 couples.

Measures

All measures were administered to both husbands and wives at T1 and T2, aside from the parenting scale which was administered only at T2.

The PTSD Inventory (PTSD-I; Solomon et al., 1993) was used to assess husbands' combat-related PTSS (items referring to their combat experiences) and wives' PTSS (items regarding their husbands' combat experiences). The questionnaire consists of 17 statements describing PTSD symptoms. Both husbands and wives were required to rate the frequency of each statement during the last month (husbands' example item: "you tried to avoid thoughts or feelings about the war", wives' example item: "you tried to avoid thoughts or feelings about your husbands' experience in war"). The 5-point scale ranged from *never* to *very often*. The PTSD-I has satisfactory psychometric properties in terms of high test-retest reliability ($\alpha = .93$), concurrent validity, and convergent validity with structured clinical interviews (Solomon et al., 1993). PTSD-I had high internal consistency for husbands and wives at T1 (Cronbach's $\alpha = .96, .94$, respectively) and T2 (Cronbach's $\alpha = .90, .92$, respectively).

The Dyadic Adjustment Scale (Spanier, 1976) is a 32-item measure of marital quality. Husbands and wives were asked to indicate the extent to which each item described their current marital interaction, for example: "Do you engage in outside interests together?" The scale has high convergent and discriminant validity (Heyman, Sayers, & Bellack, 1994) and has been used in international as well as Israeli populations (Horesh & Fennig, 2000). In the current study, internal consistency was high among both husbands and wives at T1 (Cronbach's $\alpha = .95, .96$, respectively) and T2 (Cronbach's $\alpha = .95, .95$, respectively).

Parental Caregiving was assessed by the Adapting Caregiving in Couple Relationships Questionnaire (Kunce & Shaver, 1994) so it may be used for the assessment of caregiving patterns of parents toward their children (Zerach, Greene, Ein-Dor, & Solomon, 2012). The questionnaire consisted of 27 items. Participants were asked to rate the extent to which each item described their general attitudes, feelings, beliefs, and motives in their relations with their children on a 7-point scale, ranging from *not at all* to *very much*. The questionnaire includes four subscales which were modified to refer to participants' children rather than their partners: proximity to children, sensitivity to children's needs, cooperative versus controlling pattern of caring, and overinvolvement caregiving. As only the subscale of overinvolvement loads negatively on the construct of parenting, it will be represented separately in structural equation modeling (SEM) analyses. The other scales are referred to as positive parenting. Satisfactory test-retest reliability and construct validity were demonstrated (Kunce & Shaver, 1994). Reliability values for subscale scores were satisfactory (Cronbach's α for positive parenting = .85, .88 and overinvolvement = .63, .70 for husbands and wives, respectively).

Data Analysis

Data were analyzed using IBM SPSS Statistics version 22 (SPSS, 2013). In the first step, bivariate Pearson correlations were computed for all study variables. In a second

step, we introduced an actor-partner interdependence model (APIM: Kenny, Kashy, & Cook, 2006) in order to examine the prospective associations between research variables.

In APIM, two kinds of effects are estimated: actor effects and partner effects. In the present case, actor effects are the intrapersonal effects of a person's (i.e., husband or wife) self-report of PTSS/ST, marital adjustment, positive parenting, and overinvolvement. Partner effects are the interpersonal effects of a husband's measures (i.e., PTSS, marital adjustment, positive parenting, and overinvolvement) on the wife's measures, and the effects of the wife's measures on her husband's measures. The APIM provides separate and statistically independent tests of actor and partner paths, in which the effect of each path is estimated while controlling for the other paths (Kenny et al., 2006). SEM was used to estimate the parameters in this APIM, using AMOS 21. A model is judged as fitting well if the comparative fit index (CFI), normed-fit index (NFI), and the Tucker-Lewis index (TLI) are greater than .9 and the root-mean-square error of approximation (RMSEA) is equal to or lower than .1. A chi-square test was computed but due to its sensitivity to sample size, we used the ratio of chi-square to degrees of freedom. Values between 1 and 5 indicate a satisfactory fit between the theoretical model and empirical data.

In a third step, we used multiple step mediation (Hayes, Preacher, & Myers, 2011) to examine whether marital adjustment at T1 and T2 mediated the link between T1 PTSS/ST and T2 positive parenting, separately for husbands and wives. We employed accelerated bias-corrected bootstrap, using Hayes' (2012) Process computation (model 6), for husbands and wives.

RESULTS

Intercorrelations

Power analyses using acceptable calculators of the G*Power 3 software (Faul, Erdfelder, Lang, & Buchner, 2007) assuming $\alpha = .05$, $n = 225$; medium effect size of 0.35 for analyses of correlations indicated high power of 0.97. Table 1 presents correlations between our main study measures. We examined bidirectional correlations among PTSS/ST, marital adjustment, and parenting over the two time points, among both husbands and wives.

As reported in a previous analysis of the sample, PTSS in husbands and ST wives were significantly correlated at both time points (Greene et al., 2014). Similarly, dyadic adjustment of husbands and wives showed significant intra- and interpersonal correlations at both times of measurement (Dekel, Enoch, & Solomon, 2008). Furthermore, the posttraumatic symptomatology of husbands and wives (PTSS/ST) at both measurement points were significantly associated with dyadic adjustment of both partners at T1 and T2, both intra- and interpersonally.

Husbands' ratings of their positive parenting were uncorrelated with estimations of their own overinvolvement or the positive parenting of their wives. Husbands' overinvolvement, however, was positively correlated with their wives' overinvolvement. Furthermore, there was a negative association between positive parenting of wives and their own overinvolvement, reflecting the fact that overinvolved mothers rated their own parenting abilities as lower. Positive parenting of the husbands was significantly correlated with their own and their wives' trauma symptoms while positive parenting of the wives was unrelated to traumatic stress in both partners. On the other hand, PTSS among wives at both measurements was related to overinvolvement of both partners while this was not always the case in husbands' PTSS. Overinvolvement of wives was significantly related to dyadic adjustment of both marital partners, while overinvolvement of husbands was unrelated to the dyadic adjustment of any partner. Positive parenting of the wives, however,

TABLE 1
Intercorrelations Between Main Study Measures

Measure	1	2	3	4	5	6	7	8	9	10	11	12
1. PTSS, T1, husbands	-	.85**	.52**	.31**	-.52**	-.55**	-.31**	-.34**	-.40**	-.01	.09	.21**
2. PTSS, T2, husbands		-	.55**	.43**	-.49**	-.55**	-.21**	-.28**	-.48**	.05	.18**	.10
3. PTSS, T1, wives			-	.83**	-.33**	-.41**	-.36**	-.37**	-.17*	.01	.23**	.27**
4. PTSS, T2, wives				-	-.26**	-.27**	-.34**	-.35**	-.26**	-.10	.14**	.28**
5. Marital adjustment, T1, husbands					-	.65**	.59**	.52**	.65**	.11	-.01	-.18**
6. Marital adjustment, T2, husbands						-	.38**	.49**	.40**	.01	-.00	-.16*
7. Marital adjustment, T1, wives							-	.62**	.29**	.27**	-.06	-.24**
8. Marital adjustment, T2, wives								-	.22**	.28**	-.04	-.18**
9. Positive parenting, husbands									-	.12	.02	-.12
10. Positive parenting, wives										-	-.04	-.16*
11. Overinvolvement, husbands											-	.21**
12. Overinvolvement, wives												-

Notes. PTSS = posttraumatic stress symptoms; Index. T1 = assessment in 2003, T2 = assessment in 2008–2010. Correlation between husbands' and wives' results are presented in bold print.

** $p < .001$, * $p > .05$.

was significantly related to their own dyadic adjustment, but not their husbands', while husbands' positive parenting was related to both partners' dyadic adjustment.

Actor–Partner Interdependence Model Analysis

We calculated the power in the APIM analysis using the web-based power calculator (Ackerman, Ledermann, & Kenny, 2016). For this purpose, we corrected our sample size according to the number of pairs of actor and partner effects. The power detected ranged between 0.7 to 0.89 values which are sufficient to detect actor and partner effects. Moreover we conducted power analysis for RMSEA in nested models, utilizing R program (R Core Team, 2013) and we found a satisfying power of 0.899 (Preacher & Coffman, 2006).

Fit indices showed that the theoretical model, $\chi^2(22) = 99.45$, $p < .001$, $\chi^2/df = 4.52$, CFI = .95, NFI = .93, TLI = .95, RMSEA = .08, was a good representation of the data. Furthermore, a simpler and more parsimonious model was compared to the more general model, containing only the significant paths that were identified. Fit indices of the parsimonious model indicated that it was an excellent representation of the data, $\chi^2(36) = 118.78$, $p < .001$, $\chi^2/df = 2.9$, CFI = .95, NFI = .94, TLI = .96, RMSEA = .06. Comparing the fit indices for the two models favored the parsimonious model (the difference of the two chi-squares was not significant, $\chi^2(14) = 19.33$, $p = .15$), hence we proceeded with the parsimonious model for further analysis (McCoach & Black, 2008).

Figure 1 displays the standardized coefficients and significant paths for the parsimonious APIM model along with the actor and partner effects. The analyses revealed high stability of PTSS/ST and marital adjustment among both husbands and wives. In order to control for dyadic effects (factors related to specific characteristics of the couple), correlations were calculated between the residuals of husbands' and wives' variables (PTSS, marital adjustment, and parenting) at T2. The data show that the proportions of variance in husbands and wives that were not explained by the variables included in the model were significantly linked and controlled for. We also have correlated the residuals of the marital adjustment and parenting of husbands and wives separately in order to control for method effects. While for wives we found significant correlation between marital adjustment and parenting, for husbands this correlation was not significant.

Actor husbands effects

Higher levels of husbands' marital adjustment at T1 predicted higher levels of parental functioning at T2 ($\beta = .79$, $p < .001$). Husbands' higher levels of marital adjustment at T1 predicted lower levels of PTSS at T2 ($\beta = -.16$, $p < .001$), as well as higher levels of PTSS at T1 predicted lower marital adjustment at T2 ($\beta = -.23$, $p < .001$).

Actor wives effects

Higher levels of wives' marital adjustment at T1 predicted higher levels of wives' parental functioning at T2 ($\beta = .27$, $p < .001$). Higher levels of wives' PTSS at T1 predicted their own higher overinvolvement at T2 ($\beta = .27$, $p < .001$) and lower marital adjustment at T2 ($\beta = -.16$, $p = .002$).

Partner effects

Higher levels of wives' PTSS at T1 predicted higher levels of husband's PTSS ($\beta = .19$, $p < .001$) at T2 as well as vice versa ($\beta = .18$, $p < .001$). Higher levels of wives' PTSS at T1 furthermore predicted husbands' higher overinvolvement at T2 ($\beta = .23$, $p < .001$). Higher wives' marital adjustment at T1 predicted husbands' lower positive parenting at T2 ($\beta = -.26$, $p < .001$) as well as their husbands' higher PTSS at T2 ($\beta = -.19$, $p < .001$).

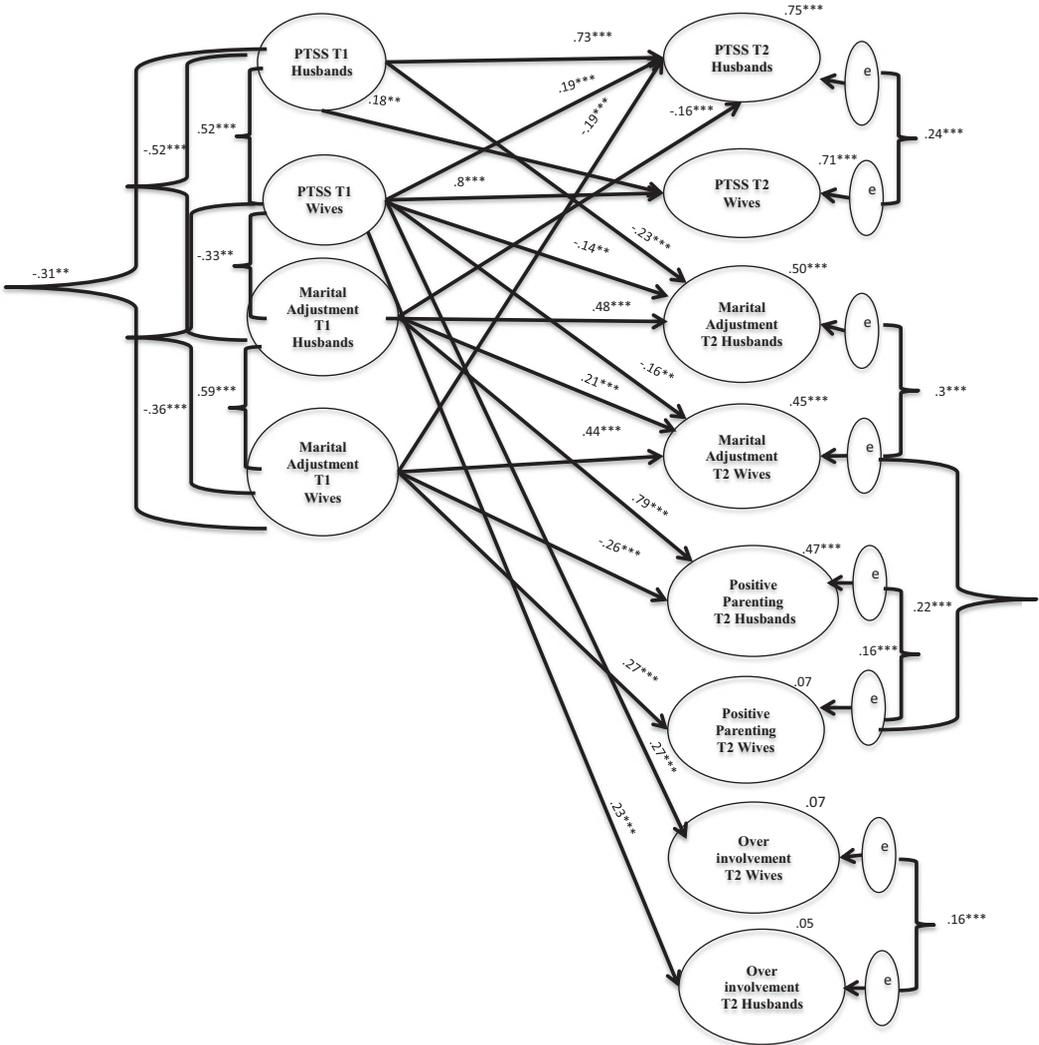


FIGURE 1. Structural Equation Modeling for PTSS, Marital Adjustment, and Parenting Using the Couple as Unit of the Analysis ($N = 225$).

Note: The variables are observed and exist in the dataset, although they are represented in circles. All paths in the model are significant with β values represented above the arrows. Explained variance is located above all dependent variables. PTSS, post-traumatic stress symptoms. * $p < .05$. ** $p < .01$. *** $p < .001$.

Wives' PTSS at T1 predicted husbands' lower marital adjustment at T2 ($\beta = -.14$, $P = .002$). Husbands' marital adjustment at T1 predicted wives' marital adjustment at T2 ($\beta = .21$, $p < .001$).

Does Marital Adjustment Mediate the Link Between PTSS and Parenting?

Power analyses for mediations analyses utilizing regression were conducted using acceptable calculators (G*Power 3; Faul et al., 2007) assuming $\alpha = .05$, $n = 225$, and medium effects. Analyses indicated high power of 0.95 in husbands and 0.99 in wives. We examined whether: (a) T1 PTSS directly affected positive parenting at T2, controlling for

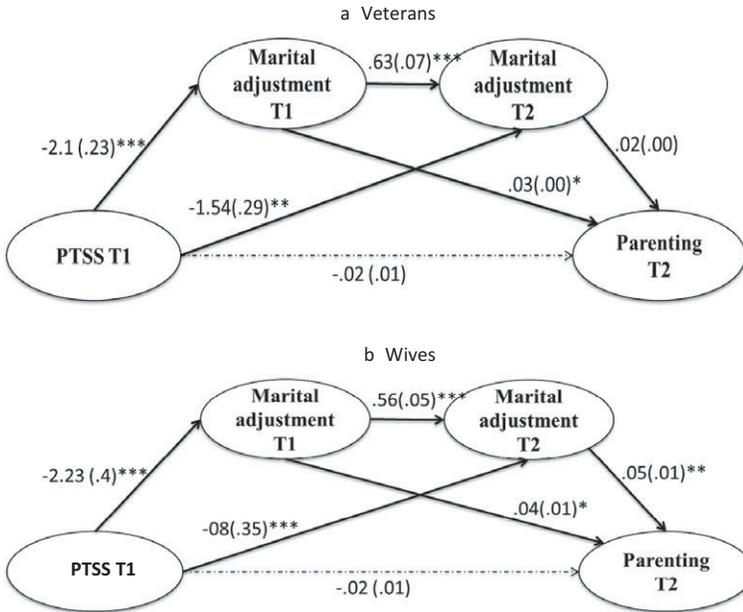


FIGURE 2. Multiple Sequential Mediation Analysis.

Note: The parenting in the models refers to positive parenting. $*p < .05$. $**p < .01$. $***p < .001$.

marital adjustment at T1 and T2; (b) T1 PTSS indirectly affected positive parenting via marital adjustment, at any of the time points (i.e., T1 and T2, separately); (c) T1 PTSS indirectly affected positive parenting via a two-step mediation process (i.e., via marital adjustment at T1 and T2). Summarized standardized results are presented in Figure 2.

Husbands

The analysis revealed that PTSS had no direct effect on positive parenting ($-.0354, .0044$). However, PTSS had an indirect effect on the positive parenting factor via T1 marital adjustment ($-.0748, -.0381$), in that higher T1 PTSS predicted lower marital adjustment at T1, which in turn was associated with lower levels of positive parenting at T2. The results revealed no significant indirect effects via T2 ($-.0021, .0111$) and via both T1 and T2 ($-.0022, .0134$).

Wives

The analysis revealed that PTSS had a direct effect ($.0032, .0040$) on positive parenting. PTSS indirectly predicted wives' positive parenting via three routes: (a) Higher T1 PTSS predicted lower marital adjustment at T1, which in turn was associated with higher levels of positive parental functioning at T2 ($-.0202, -.0025$); (b) More PTSS at T1 predicted lower levels of T2 marital adjustment, which in turn predicted higher positive parenting levels ($-.0162, -.0120$); and (c) Higher PTSS at T1 predicted lower marital adjustment at T1, which in turn increased the levels of marital adjustment between T1 and T2. Consequently, higher levels of marital adjustment at T2 were associated with higher levels of positive parenting at T2 ($-.0143, -.0011$).

DISCUSSION

The present study presents evidence concerning the influence of war-related traumatic experiences on the family system over a period of 35 years after the war. Results showed an association between marital adjustment and parental functioning of traumatized male veterans and their wives. Furthermore, we examined the previously uninvestigated effect of wives' PTSS on the family system as a whole. As hypothesized (H1), results revealed that higher wives' PTSS indeed predicted higher PTSS among their husbands 5–7 years later, as well as vice versa. Furthermore, in agreement with our hypothesis (H2), wives' PTSS predicted husbands' marital adjustment and wives' marital adjustment predicted husbands' PTSS, over time. In partial support of H3, wives' PTSS had a significant long-term effect on their own as well as their husbands' parental overinvolvement, but had no impact on positive parenting in general. Surprisingly, husbands' PTSS did not predict their positive parenting. Finally, relating to (H4), a spillover effect from marital adjustment to positive parenting occurred for both partners. Moreover, the impact of trauma-related symptoms on positive parenting was fully mediated via marital adjustment in both spouses, indicating that the ramifications of trauma for parenting cannot be fully understood without taking into consideration perceived family relationships.

The current results indicate that PTSS effects are bidirectional and that significant others may also impact the symptomatology of a trauma survivor, namely that the PTSS of the wife has potential impact on her husband's PTSS. This reciprocal relationship is in line with premises of the family system theory, which argues that the whole family system would respond to increased stress in one of its members (Minuchin, 1974). According to the FAAR model (Patterson, 2002), there are times when demands significantly exceed the family capabilities. Both spouses' PTSS burden the family with persisting imbalance, leading to family crisis that entails significant disorganization. A crisis is very often a turning point for a family, leading to major change in its structure, interaction patterns, or both. Hence, a crisis can lead to disrupted interaction between the traumatized spouses and to a poorer functioning in the different subsystems.

Our findings showed that the previous measurement of wives' PTSS predicted husbands' lower marital adjustment and wives' marital adjustment predicted husbands' PTSS, which is congruent with our hypothesis (H2), derived from the family systems theory (Kerr & Bowen, 1988; Minuchin, 1974). The reverse path leading from husbands' PTSS to wives' marital adjustment and husbands' marital adjustment to wives' PTSS was not significant.

First, our findings show that the PTSS of the indirectly affected spouse may undermine her husbands' marital adjustment, beyond the nonsignificant effect of husbands' PTSS on wives' marital adjustment. However, we also found that the wives' undermined marital adjustment was longitudinally correlated with their husbands' heightened PTSS. These findings highlight the potential impact of secondary implications on the primarily traumatized spouse. These findings exist beyond the stability of each spouse separately, as well as beyond the reverse directions of impact. These findings highlight the likely detrimental effect of ST, manifested in PTSS and impaired marital adjustment. In situations where an indirectly traumatized spouse is suffering from PTSS and poor marital adjustment, the second spouse is affected on both mental and marital levels. Moreover, another family member may put aside her/his own distress in favor of preserving one of the family subsystems (Kerr & Bowen, 1988). Wives may conceal and suppress their own distress in order to save the marital subsystem, allowing them allegedly to not be affected by the PTSS and poor marital adjustment of their husbands; however, the mechanism of suppression has negative consequence on the marital and mental dynamics as it damages communication and intimacy within marital relationships. Moreover, as wives take on additional roles as

caregivers, it may damage their abilities (e.g., Dekel, Goldblatt, Keidar, Solomon, & Pollack, 2005), perhaps lowering coping skills and ego strengths.

The Impact of PTSS on Parenting

The present study is the first to address the interpenetrating effects of PTSS on both spouses' parenting. Partially congruent with our hypothesis (H3), results revealed that neither the husbands' nor the wives' PTSS predicted their own positive parenting, except for wives' higher PTSS predicting their parental overinvolvement. This finding is incongruent with previous research, indicating that higher levels of veterans' PTSS have a direct deleterious effect on parent-child relationship satisfaction (Samper et al., 2004), even in the veterans of the current sample (Zerach et al., 2012). As our analysis includes both marital adjustment and parenting, it is particularly informative and provides a more complete picture of the familial relationships than previous research. The explanation for the contradicting results lies in our finding that marital adjustment masked the effect of PTSS on parenting, leading us to consider the indirect effect of marital adjustment on PTSS and parenting.

Results revealed that wives' PTSS prospectively predicted their own maternal overinvolvement as well as their husbands' parental overinvolvement. Overinvolvement represents the negative dimension of perceived parenting, which is characterized by extensive occupation with the children's needs and problems, intervening strongly in their lives and decision making, and overprotectiveness (Marano, 2008). This finding is in line with studies arguing that fathers' involvement is predicted by contextual sources of stress and support, such as the marital relationship (McBride, Schoppe, & Rane, 2002).

There are several possible explanations for these findings. First, with regard to family theory, suggesting interdependence within the family, it is possible that wives who suffer from PTSS and live alongside a traumatized husband experience loss of inner control in their own lives, as shown in studies demonstrating the relationship between PTSS and locus-of-control (Karstoft, Armour, Elklit, & Solomon, 2015). As a defense mechanism, these wives may translocate their own and their husbands' anxiety to their children's lives. This is a double-edged sword, according to Anderson (1977), as subjects with a high internal locus-of-control used more instrumental strategies for dealing with stress, however they engaged in less self-preoccupation, hence focusing outside of themselves rather than on threatening inner PTSS. Being overinvolved with the lives of their children may be a coping mechanism for wives to regain some control.

Second, when a parent is more anxious, he or she tends to be more protective toward his or her offspring. A study conducted among second-generation Holocaust survivors found overprotectiveness to be a main theme in coping with the prolonged sense of danger that originated from the trauma (Bar-On et al., 1998). The results of the present study suggest that secondary exposure to trauma may induce similar processes, validating the family systems theory in the effect of spouses' PTSS on both spouses' overinvolvement.

Third, overinvolvement may be a maladaptive strategy with intent to compensate children for the lack of functioning of their traumatized parents as marital partners. Within a dysfunctional marital relationship, the traumatized parents may attempt to spare their children the pain of witnessing their parents' damaged relationship, and impose on them an undesirably close or even suffocating parent-child relationship. Finally, as partners perceive each other as incompetent, they also forfeit their capacity to trust each other in the parental domain. As each perceives him or herself as the primary, if not sole, provider for the child, they become overinvolved and overprotective.

Marital Adjustment and Parenting: Spillover or Compensation?

With regard to the relationship between marital adjustment and parenting (H4), the spillover (Erel & Burman, 1995) and compensation (Engfer, 1988) theories were considered as explanatory models. In the present study, we found that lower marital adjustment prospectively predicted lower positive parental functioning for both husbands and wives. Associations of marital adjustment and positive parenting have been discussed in the framework of the family systems theory, which postulates a reciprocal association between functioning in the marital and parental subsystems (Minuchin, 1974). Previous studies conducted among families of nontraumatized populations reported mixed findings (Easterbrooks & Emde, 1988), although a slight inclination toward a spillover effect from marital adjustment to positive parenting among husbands and compensation effect among wives was evident. In contrast, the results of the present study revealed a spillover effect in both parents within the traumatized family system.

Previous studies found PTSS to be associated with several impediments in emotion regulation, including impaired capacity to manage strong emotions manifesting in outbursts of anger and frustration (Orsillo, Batten, Plumb, Luterek, & Roessner, 2004), disrupted communication, and violent behaviors (Gottman, Gottman, & Atkins, 2011). Wives suffering from PTSS may show similar deficits in emotion regulation, likely explaining their difficulty in flexibly distinguishing between their behaviors in the marital and parental subsystems.

The Mediating Role of Marital Adjustment

The hypothesized (H4) mediating role of marital adjustment in the association between trauma symptoms and positive parenting was confirmed for both spouses. However, we found some differences between the spouses. For husbands, only the prospective association was found to be significant. That is, previous PTSS and marital adjustment predicted subsequent positive parenting. For wives, however, marital adjustment mediated the link from PTSS to positive parenting concurrently and prospectively, as well as through the change in marital adjustment. In other words, the spillover effect was found to be more substantial among wives as compared to husbands.

To the best of our knowledge, only one extant cross-sectional study conducted among National Guard soldiers following combat deployment assessed the mediating role of marital adjustment between PTSS and parenting. However, contrary to the present results, the researchers found only direct effects linking PTSS to both marital and parental functioning, but no mediation effects (Gewirtz et al., 2010). These differences may be attributed to several factors, including study design (i.e., cross-sectional vs. longitudinal), population (i.e., Israeli vs. American), and prewar parental and marital relationships which were unaccounted for in both studies. Considering the dearth of such research endeavors, any such explanation is currently speculative. Future research should examine these and other factors within the complex family system in order to determine the origin of these differences. These limitations notwithstanding, the current study presents a more comprehensive observation and assessed both primary and secondary traumatized spouses longitudinally.

The gender differences in the effects of trauma on positive parenting via marital adjustment may be confounded with primary or ST. When, as in the current study, the husband is the primary trauma survivor, he suffers from PTSS that are more persistent and allow him less cognitive flexibility. Thus, his ability to introspectively examine his marital relationship may be hindered. On the other hand, wives, being secondary trauma survivors, may be less preoccupied with their symptoms and thus capable of exploring their relationship quality. Moreover, women were shown to possess accurate appraisals of the emotions

and thoughts of others (Bloch, Haase, & Levenson, 2014). Thus, they may be better suited for assessing the quality of their relationship (Bloch et al., 2014), and their marital satisfaction is potentially more likely to mediate the relationship of trauma and parenting.

Marital Adjustment and Parenting—Reciprocal Relations

Another important question is whether one spouse's marital adjustment may affect the other's parenting. Surprisingly, we found a prospective effect from wives' lower marital adjustment to their husbands' higher positive parenting. This could be understood in terms of a possible transferred compensatory effect (Nelson, O'Brian, Blankson, Calkins, & Keane, 2009). In other words, the husbands compensate for their wives' reduced marital satisfaction by investing in the relationship with their children.

In contrast, it was found that the husbands' marital adjustment failed to have an impact on the wives' positive parenting. Women are more independent in their parenting and typically have less choice in terms of time spent and activities done with their children than do men, who have higher latitude to determine the level and type of involvement they will have with their children. This discrepancy is visible as the variance in wives' parenting is 7%, while husbands' explained variance in parenting is 47%. This finding implies differences in gender roles and relatedly, mothers' and fathers' commitments to parenting. Moreover, husbands' lower marital adjustment does not impact their wives' parenting, while wives' lower marital adjustment causes husbands to be more involved parents as a mechanism for compensating themselves and their children.

In families where the husband suffers from war trauma, the wife often fulfills an important role as the supporting pillar (Dinshtein, Dekel, & Polliack, 2011). It may be argued that the wives divide their roles in the family, keeping their parental responsibilities independent of their husbands' PTSS and undermined marital adjustment.

Study Limitations

Several study limitations must be acknowledged. First, because the measurements did not cover the entire life span since the war experience, potential changes that may have occurred during this time may be unaccounted for. Second, we measured parenting for both spouses only at the second measurement point and consequently could not determine any causality regarding the relations of PTSS to marital adjustment, and to parenting. Third, despite our attempt to ensure random sampling, there might be a response bias attributable to response rates and participant attrition which are inevitably linked to the longitudinal nature of the study. This notwithstanding, making great efforts to eliminate this potential bias as much as possible, we used the ML method for handling the missing data.

Regardless of the above limitations, the present study yielded several important and innovative findings that make a valuable contribution to extant knowledge. Our findings first and foremost stress the complexity of war traumatization, suggesting that such trauma influences the family at multiple levels, even decades after the war. A complex system of interpenetrating effects was found between the mental, marital, and parental systems, which is congruent with family theory, emphasizing the potential impact each spouse may have on the other and on the family as a gestalt that is more than the sum of its parts. The innovation of the current study then lies in the findings that wives' PTSS may negatively influence husbands' PTSS and parental overinvolvement. Furthermore, a spillover effect from each spouse's marital adjustment to parenting was illustrated for the first time in a sample of traumatized veterans and their wives. The results indicate that the effects of ST on the family system should not be underestimated.

Understanding the dynamics between subsystems of traumatized families is imperative as they proceed along a spectrum between two possible trajectories. On one hand, the family has the power to facilitate recovery from the traumatic experience, while on the other hand the family may preserve and facilitate psychopathology. Interventions exclusively devised for traumatized veterans may fail if they overlook the influence a secondary traumatized spouse has on the family system. In fact, the findings support the use of marital interventions, aimed at alleviating both spouses' suffering while mobilizing the resources of the partnership. In congruence with the FAAR model (Patterson, 2002), therapy should reduce stress for one or both partners and maintain boundaries between marital and parental subsystems, thereby preventing the spillover effect and increasing family functioning. Couples therapy may be of utmost importance given that increasing marriage quality is likely to counteract the spillover effect and increase the parenting capacities of both spouses. Moreover, family therapy may assist traumatized veterans and their wives in developing adaptive strategies for emotion regulation and improving communication. Future research should consider taking the children's perspective into account in order to specify their roles in a traumatized family system.

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