

Indirect Exposure to Captivity Details Is Not Related to Posttraumatic Stress Symptoms Among the Spouses and Offspring of Former Prisoners of War

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Indirect exposure to the aversive details of the primary victim's traumatic event(s) has been introduced in the fifth edition of the *Diagnostic* and Statistical Manual of Mental Disorders (DSM-5; American Psychiatric Association, 2013) as a new event criterion (Criterion A4). However, this new criterion has been criticized for its significant emphasis on the exposure to trauma "details" or trauma narrative. This study assessed the associations between reported exposure to details about captivity and posttraumatic stress symptoms (PTSS) among 2 groups of family members of former prisoners of war (ex-POWs): spouses (n = 115) and adult offspring (n = 78). Results show that in both groups exposure to details regarding captivity was not significantly related to the severity of total PTSS and specifically, high levels of exposure to captivity details were related to lower avoidance symptoms among ex-POWs' spouses. Among offspring, exposure to paternal behaviors stemming from the fathers' posttraumatic stress disorder was related to PTSS, above and beyond negative life events, quality of relationship with the father, and exposure to captivity details ($R^2 = .34$). These results suggest that behavioral displays of the fathers' posttraumatic symptoms, rather than the recounting of trauma-related details, is related to PTSS among ex-POWs' offspring.

Secondary traumatization (ST) refers to the contagious effect experienced by those who have close contact with a traumatized person, resulting in emotional distress and posttraumatic stress disorder (PTSD) and posttraumatic stress symptoms (PTSS) similar to those exhibited by primary trauma survivors (Figley, 1995). Numerous studies have consistently documented ST among helping professionals (Ivicic & Motta, 2016) and family members of trauma survivors, particularly spouses (Lambert, Engh, Hasbun, & Holzer, 2012) and offspring (Lambert, Holzer, & Hasbun, 2014). Recently, the fifth edition of the *Diagnostic* and Statistical Manual of Mental Disorders (DSM-5; American Psychiatric Association, 2013) broadened the trauma exposure criterion (Criterion A) for PTSD to include indirect exposure, specifying that repeated or extreme indirect exposure to aversive details of a traumatic event(s), usually in the course of professional duties, potentially can cause PTSD (Criterion A4). Thus, veterans' family members who experience PTSS in the aftermath of indirect exposure to veterans' traumatic events(s) may meet the criteria for PTSD, and the concept of ST is no longer needed. However, both before (e.g., McNally, 2009) and after

(Jones & Cureton, 2014) the publication of the *DSM-5*, trauma researchers and clinicians have articulated opposing opinions regarding the diagnosis of indirect exposure to trauma.

Some scholars have argued that the inclusion of indirect informational exposure in the definition of Criterion A will "diminish the magnitude of the stressor and the significance of PTSD" (Andreasen, 2004, p. 1322). Others, however, view indirect PTSS as a clinical and empirical fact and have argued in favor of acknowledging ST by incorporating it into the PTSD diagnosis (e.g., Kanno, 2010). In contrast, Horesh (2015) viewed the inclusion of indirect exposure in the DSM-5 definition of trauma as a positive step, but raised concerns about the gap between the DSM-5 definition of indirect exposure and the literature regarding the mechanisms of ST. Specifically, Horesh criticized the DSM-5 definition's heavy reliance on exposure to details about a primary victim's traumatic event. Therefore, a question remains regarding the contribution to ST of detailed indirect exposure to trauma, as compared to other implicit ways of being indirectly exposed to trauma.

This question can be approached by examining the association between PTSS and indirect exposure to details about captivity by ex-POWs' spouses and offspring as secondary victims. Specifically, the present study focused on the quantity, and not the nature, of indirect exposure to ex-POWs' captivity details. War captivity is considered one of the most brutal manmade traumas implicated in elevated rates of PTSD among ex-POWs (e.g., Port, Engdahl, & Frazier, 2001). Family members who

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spend considerable time witnessing ex-POWs' posttraumatic reactions and learning of their horrific experiences are at high risk for PTSS (Shalev & Ben-Asher, 2011). Indeed, both wives (e.g., Levin, Greene, & Solomon, 2015) and adult offspring (e.g., Zerach & Aloni, 2015) of ex-POWs have reported higher levels of PTSS than comparable veterans' family members.

In their literature review on secondary trauma, Dekel and Goldblatt (2008) concluded that the more severe and complex the father's exposure to combat and the greater the father's distress in the form of PTSD, the greater the extent of their children's distress. For example, Bernstein (1998) found that WWII ex-POWs' children retrospectively described their fathers as quick to suffer from outbursts of anger, emotionally distant, and generally unresponsive to their emotional needs. Rosenheck (1986) suggested that traumatized veterans may find it difficult to control their aggressive impulses, which could lead to emotional outbursts and contribute to an atmosphere of fear, guilt, and caution in their home. Given that our previous research demonstrated that offspring's PTSS was related to stress stemming from exposure to the fathers' PTSD-related behaviors (Zerach & Aloni, 2015), a question remains regarding the relative contributions to the secondary victims' PTSS of exposure to the fathers' stressful behaviors as compared to the exposure to details regarding captivity.

The present study's hypotheses were (a) both spouses and adult offspring of ex-POWs exposed to captivity details by their partner/father would report higher levels of PTSS and (b) among ex-POWs' offspring, above and beyond exposure to explicit captivity details, exposure to their fathers' stressful behaviors would be associated with PTSS.

Method

Participants and Procedure

Data were collected from wives and adult offspring of Israeli ex-POWs, as part of a larger longitudinal study on the impact of war captivity on veterans' mental and physical health (for details, see Solomon, Horesh, Ein-Dor, & Ohry, 2012). According to Israel's Ministry of Defense, 240 soldiers from the Israeli Army land forces were captured during the 1973 Yom Kippur war. The ex-POWs were either captured by the Egyptians and held for 6 weeks, or imprisoned by the Syrians and held for 8 months. As part of the land forces, the ex-POWs were exposed to combat stressors, including encounters with injured people and dead bodies, active fighting, and exposure to life-threatening events. Beyond the significant risks of war, the ex-POWs were subjected to isolation and systematic torture, consisting of the infliction of severe physical pain and great mental stress. Thus, primary victims such as the ex-POWs are considered a population at risk for both war and captivity adversity.

Data were collected from fathers at three time points: in 1991, 2003, and 2008. Data were collected from their wives at two time points: in 2004 and 2010–2011. Data were collected from

their adult offspring at one time point: in 2013–2014. In the present study, we used only the wives' second wave of data (37 years after the war) and the offsprings' one time point of data (40 years after the war).

The names of the ex-POWs were provided by authorities from the Israeli Defense Forces (IDF) as part of the periodic examination of veterans after their military service. We contacted the ex-POWs by telephone; after explaining the purpose of our study, we asked them to take part. Questionnaires were administered in participants' homes or at other locations of their choice. Before filling out the questionnaire, participants signed an informed consent form.

The wives were located through their husbands, who had participated in a previous study conducted by our research group. We used our former contact information records of the husbands to contact their spouses. We sent the potential participants a letter in which we introduced the study and informed them that research assistants (licensed social workers in their graduate studies) would contact them in the following days. After receiving an explanation of the aim of the study, the wives who agreed to participate were offered the option of filling out research questionnaires either in their homes or at a location of their choice. Before filling out the questionnaires, each participant signed an informed consent form.

Offspring were located through the contact information records of their fathers. After receiving an explanation of the aim of the present study, the offspring who agreed to participate were offered the option of filling out research questionnaires either in their homes or at a location of their choice. Our first referral was made to the oldest child; if he or she could not or did not want to participate, we turned to the next oldest child who agreed to participate. Before filling out the questionnaires, each participant signed an informed consent form. Approval for this study was given by the ethics committees of the IDF, Tel-Aviv University, and Ariel University.

The group of ex-POWs' wives consisted of 115 wives of IDF land-force veterans who had been captured during the Yom Kippur war. There were 170 ex-POWs who took part in the third wave of assessment in 2008. Of the 147 married ex-POWs, 115 wives participated in the second wave of wives' measurement; 32 wives declined to participate (78.2%). Thirty percent (n = 35) were married during their husbands' captivity, whereas the rest were married after 1973. We do not have any information about the percentage of ex-POWs' wives who were dating their husbands while they were captured. Ages ranged from 43 to 79 years (M = 58.28, SD = 5.79); mean years of education were 14.16 years (SD = 3.20); 52.0% were working fulltime and 56.1% defined themselves as secular (for more details, see Levin et al., 2015).

There were 80 ex-POWs' adult offspring who agreed to participate, of whom 37 (47%) were male and 42 (53%) were female, whose ages ranged from 22 to 53 years (M = 35.19, SD = 6.44). There were 25 participants (22.8%) who were born before the war and captivity; the rest were born after the war. No differences were found among the adult offspring in the

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context of their birth before or after the war. We had contacted 92 adult offspring and the response rate in this group was 87%: 79 participated and 12 declined to participate. The mean years of education were 14.89 years (SD = 2.81), 42 (53.8%) were married, and 70% defined themselves as secular (for more details, see Zerach, Kanat-Maymon, Aloni, & Solomon, 2015).

Measures

The PTSD Inventory (PTSD-I; Solomon, Benbenishty, Neria, & Abramowitz, 1993) assessed PTSS according to the PTSD symptoms listed in the DSM-IV-TR. Participants were asked to rate how often they suffered from each symptom during the previous month on a scale from 0 = not at all to 4 = almost always. Participants were asked to rate their reactions in relation to the primary victim's experiences (e.g., "I have recurrent pictures or thoughts about my father's captivity"). Items rated ≥ 3 indicated symptom presence. This symptom count was used to operationalize PTSD both as a continuous variable of number of PTSS and as a dichotomized probable, self-reported PTSD DSM diagnosis. The range of scores is the total sum of PTSS (17): intrusion (5), avoidance (7), and hyperarousal (5). Using DSM-IV-TR symptom criteria, participants were identified as having PTSD if they endorsed at least one intrusive symptom, three avoidant symptoms, and two hyperarousal symptoms. The clinical validity of the PTSD-I was assessed by concurrent clinical interviews for a sample of 114 soldiers, one year after the Lebanon war. Concordant percentages calculated for each symptom ranged from 68.7% to 80.0%, indicating considerable agreement between the self-report and the clinical diagnosis of PTSD. The PTSD-I was administered twice within a 1-week interval to 20 soldiers. The percentage of agreement was 82.3%, indicating high test-retest reliability (Solomon et al., 1993). The PTSD-I was also found to correlate with the Impact of Event Scale (Horowitz, Wilner, & Alvarez, 1979), a measure designed specifically to assess the impact of traumatic experiences. Reliability for spouses was Cronbach's $\alpha = .90$; for offspring it was Cronbach's $\alpha = .86$.

The Life Events Checklist (LEC; Gray, Litz, Hsu & Lombardo, 2004) is comprised of 17 potential traumatic events over the life of the participant that can lead to PTSD or psychological distress (e.g., work or car accident, physical or sexual assault, exposure to violent death). The use of this questionnaire was for the purpose of statistical control. For each item, the respondent marked whether the event: happened to him or her personally (0), was witnessed by him or her (1), heard of (2), not sure (3), or irrelevant (4). Items that were marked as happened personally (0) were encoded as 1, whereas the other items (1–4) were coded as 0. The sum of negative life events that participants were personally exposed to was used for analysis. The possible range of the LEC index is 0 to 17, and the actual range in this study was 0 to 10. The LEC has shown good psychometric properties with high test-retest reliability (r = .89). It exhibited high convergent validity with the Traumatic Life Events Questionnaire (TLEQ; $\kappa = -.59$) and was positively correlated with most of the measures of psychopathology known to be associated with potentially traumatic event exposure (i.e., depression; Gray et al., 2004).

Sociodemographic measurements were assessed using the demographic characteristics of country of origin, location of residence in Israel, family status, religious orientation, age, gender, birth order, and level of education. We also asked offspring to rate their relationship with their father on a 7-point Likert scale ($1 = very \ distant$ to $7 = very \ close$).

In the absence of a valid questionnaire regarding exposure to details about captivity trauma, wives and offspring were asked, "Do you know, in detail, about what your partner/father went through during his captivity?" The responses were rated on a 5-point Likert scale (1 = no exposure, 2 = some details from other sources, 3 = few details about captivity from their partner/father, 4 = partial details about captivity from their partner/father, and 5 = many details about captivity from their partner/father).

Only offspring answered the Exposure to Fathers' Stressful Behaviors Questionnaire, which taps stress stemming from fathers' PTSD-related behaviors. The scale focuses on the duration of cohabitation with the father (one item) and the extent to which the subject was exposed to several major posttraumatic symptoms ("My father avoids talking about his captivity"; seven items). Participants rated their exposure on a 7-point scale $(1 = very\ rarely\ and\ 7 = very\ often)$. The scale's total score was summed (potential range: 7 to 49, actual range: 7 to 42; M = 22.78, SD = 9.94), so that a higher score meant more exposure. The Cronbach's α for the total exposure scale was .85.

Data Analysis

Data analysis was divided into three stages. First, descriptive statistics for the level of exposure to captivity details were calculated. Second, the relative risk for PTSD and the relationships between exposure to details about captivity and PTSS were examined with a series of Pearson correlation analyses and relative risk or risk ratio (RR) analyses. Third, to examine the unique contribution of the independent variables to offsprings' total number of PTSS and symptom clusters, four 3step hierarchical regression analyses were performed. First, all variables were standardized into z scores. Next, in the first step of the regressions, we accounted for variance associated with offsprings' negative life events. In the second step, we entered the variables of years of cohabitation with the father, details about captivity trauma, and quality of relations with the father. In the last step, we entered the sum score of exposure to fathers' stressful behaviors.

A post hoc power analysis was conducted using the software package, G*Power 3 (Faul, Erdfelder, Lang, & Buchner, 2007). The sample size of 80 was used for the statistical power analyses and a 5-predictor variable equation was used as a baseline. The recommended effect sizes used for this assessment were as follows: small ($f^2 = .02$), medium ($f^2 = .15$), and large ($f^2 = .35$; see Cohen, 1977). The α level used for this analysis was

p < .05. The post hoc analyses revealed the statistical power for this study was .75 for detecting a moderate effect size. Thus, there was an adequate power at the moderate-to-large effect sizes: f(5,74) = 2.33, L = 12.00.

Results

Varying levels of exposure to details about captivity were reported by the ex-POWs' spouses and offspring. For the wives and offspring, no exposure was reported by 2.7% (n=3) and 8% (n=6), respectively. Some details from other sources were reported by 9.7% (n=11) of the wives and 10.7% (n=8) of the offspring. For the wives and offspring, respectively, few details about captivity from their partner/father were reported by 23% (n=26) and 25.3% (n=19); partial details about captivity from their partner/father were reported by 26.5% (n=30) and 32% (n=24); and many details about captivity from their partner/father were reported by 38.1% (n=43) and 18% (n=24).

Probable self-reported PTSD was endorsed by 15.7% (n = 16) of the spouses. The risk for PTSD by those who were exposed to details at any level was low, RR = .211, 95% confidence interval [.08, .54], z = 3.24, p = .000. There were no significant associations between exposure to captivity details and probable PTSD, χ^2 (4) = 8.45, p = .080, with the odds ratio < 1, Exp(B) = .62, standard error (SE) = .23, Wald = 4.14, p = .050. Moreover, a set of Pearson correlations revealed no significant associations between exposure to captivity details and total number of PTSS, and intrusion or hyperarousal symptom clusters (Table 1). Unexpectedly, exposure to captivity details was found to be negatively related to avoidance symptoms. In other words, knowing more about the captivity was related to fewer avoidance symptoms.

Probable self-reported PTSD was endorsed by 2.7% (n = 2) of the adult offspring. No significant associations were found between probable PTSD and exposure to captivity details, χ2 (4) = 4.36, p = .35, with nonsignificant odds ratios, Exp(B)= 1.47, SE = .70, Wald = .30, p = .58. Moreover, a set of Pearson correlations revealed no significant associations between exposure to captivity details and total number of PTSS, intrusion, avoidance, and hyperarousal symptom clusters (see Table 1). It is worth noting that we found negative correlations between the perception of closeness in the relationship between father and offspring and the offspring's lower total PTSS, and avoidance and hyperarousal symptom clusters. We also found positive correlations between exposure to the fathers' stressful behaviors and the offspring's total PTSS and all symptom clusters. In other words, the more an offspring was exposed to the fathers' posttraumatic-related behaviors, the more he or she reported secondary PTSS.

We examined the contribution of the different aspects of exposure to stress stemming from the fathers' behaviors to offspring's PTSS and symptom clusters. Due to the specific aims and interests of the researchers, exposure to fathers' stressful behaviors was examined only among the offspring, and not the wives. Table 2 presents regression coefficients for the prediction of the offsprings' total PTSS and symptom clusters. The total set of variables explained 34.2% of the variance in the offspring's PTSS, F(5,62) = 5.91, p = .000; 16.7% of the variance in intrusion symptoms, F(5,62) = 2.27, p = .057; 30.2% of the variance in avoidance symptoms, F(5,62) = 4.93, p = .000; and 23.7% of the variance in hyperarousal symptoms, F(5,62) = 3.54, p = .000. In the second step of the regression, we found that the perception of a close relationship with the father was associated with lower total PTSS and avoidance symptoms. In the last model, however, we found that offsprings' total PTSS and its clusters were predicted only by exposure to the fathers' stressful behaviors.

Discussion

This study examined whether indirect exposure to explicit details about war captivity was related to spouses' and offsprings' PTSS. Contrary to expectation, results showed that neither spouses' nor offsprings' exposure to detailed information regarding their husbands'/fathers' captivity was related to PTSS severity. These results suggest that although both ex-POWs' spouses (Levin et al., 2015) and offspring (Zerach & Aloni, 2015) are known to suffer from PTSS, their symptoms are not related to exposure to information about their partners'/fathers' captivity.

A note should be made before the interpretation our results. This study relied heavily on a 1-item measure of exposure to information about captivity. This measure poses difficulties for the operationalization of indirect exposure. Moreover, the quantity of details was assessed and not the nature and contents of those captivity-related details. Although we are familiar with the horrific experiences Israeli ex-POWs went through in captivity (e.g., Stein, Snir, & Solomon, 2015), there were limits to the information this measure provided regarding what family members were exposed to and were able to report about. Furthermore, given that more than three decades had passed between the release of the ex-POWs from imprisonment and the time these data were gathered, participants' reports of exposure to a few, partial, or many details about captivity were very subjective and a memory bias may have affected the results. Thus, the pattern of associations that was found in this study should be further validated in future prospective studies among secondary victim samples using more comprehensive measures.

Although exposure to the details of a clients' trauma may be a risk factor for helping professionals, such as therapists (e.g., Steed & Downing, 1998), our results are consistent with studies that did not find a relationship between exposure to primary victim trauma narratives and ST (e.g., Lev-Wiesel & Amir, 2001). Although the *DSM-5* recognizes that a person who was exposed to aversive details about a primary victim's traumatic experiences may be eligible for PTSD diagnosis, as suggested

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Table 1
Descriptive Statistics and Pearson Correlations Between PTSS and Exposure to Captivity-Related Stress Measures Among Ex-POWs' Spouses and Offspring

Variable	Total PTSS	Intrusion	Avoidance	Hyperarousal
	Spouses' r	eports		
Exposure to details about captivity	16	04	27^{**}	08
M	4.82	1.36	1.47	1.99
SD	4.38	1.63	1.74	1.80
	Offsprings'	reports		
Exposure to details about captivity	11	.05	13	11
Relationship quality with father	33***	06	41***	21^{*}
Years of cohabitation with father	.01	.04	10	09
Exposure to fathers' stressful behaviors	.56***	.41***	.44***	.47***
$\stackrel{\cdot}{M}$	3.02	.29	1.21	1.51
SD	3.09	.75	1.53	1.58

Note. PTSS = posttraumatic stress symptoms; ex-POWs = ex-prisoners of war. $^*p < .05. ^{**}p < .01. ^{***}p < .001.$

by the results of our sample, this does not imply that such circumstances are a certain risk factor for PTSD or necessarily increase the likelihood of PTSD. Thus, the *DSM-5* A4 criterion in its current form might not be suited to the circumstances of family members and may be more closely associated to the work-related stressors of helping professionals. Future studies should explore the similarities between these populations, using representative large samples and stringent PTSD diagnostic criteria.

Our results also showed that high levels of information regarding captivity were related to fewer avoidance symptoms for ex-POWs' spouses. Previous studies have shown that wives of trauma survivors perceived the level of communication and emotional sharing between themselves and their husbands to be important to their well-being (e.g., Dekel, Goldblatt, Kiedar, Solomon, & Polliack, 2005). Moreover, among Iraq and Afghanistan veterans, greater event-specific disclosures were associated with lower symptoms of PTSD, primarily among those reporting higher levels of social support (Hoyt, Renshaw, & Pasupathi, 2013). It may be that disclosure of captivity details was related to intimacy between the spouses and wives' nonavoidance of husbands' traumatic memories, similar to the pattern of results that has been reported by ex-POWs themselves (Solomon, Dekel, & Zerach, 2008). Thus, a question remains as to whether this form of intimate self-disclosure is indeed protective. Future studies, preferably qualitatively designed, should examine more closely spouses' self-reports of their experiences of their husbands' disclosure of the specific details of their traumatic events. It would be important to examine, both qualitatively and quantitatively, the degree to which secondary exposure to details remains protective. Because this study was cross-sectional, we were unable to infer causality from our results. Therefore, it is also possible that spouses with high levels of avoidance are less likely to enquire about details about their husbands' captivity and may be more likely to stop their husbands if they begin sharing details of the trauma

Among adult offspring, exposure to behaviors related to their fathers' hyperarousal symptoms is particularly implicated in their PTSS. Given that hyperarousal symptoms are related to anger and aggression among traumatized veterans (e.g., Taft, Schumm, Panuzio, & Proctor, 2008) and lower parenting adjustment among ex-POWs (Zerach et al., 2012), it is possible that their offspring are more affected by these constellations of posttraumatic behaviors than they are by the details of captivity. However, future studies should elucidate further questions regarding the effects of fathers' PTSD-related behaviors, namely, whether these are traumatic for the offspring because they are PTSD related, or whether they comprise abusive behaviors that would promulgate PTSS in children irrespective of their etiology. Comparison between offspring of abusive fathers with or without PTSD would help our understanding of these important issues to progress.

This study has several limitations. First, as noted, our results show that high levels of information regarding captivity are related to fewer avoidance symptoms among ex-POWs' spouses. However, because this study is cross-sectional it is also possible that spouses with high levels of avoidance are less likely to enquire about details. Second, the use of self-report measures, although very common in trauma studies, entails the risk of reporting bias. Third, the lack of a parallel questionnaire of exposure to partners' stressful behaviors among ex-POWs' spouses limited our ability to compare the final models between the two subsamples. Fourth, the measures in our study were not robust enough to account for the nature of the parent—child relationship or the quality of the spouse-to-spouse relationship, which might be an important intervening variable in the associations that were examined.

Summary of Hierarchical Regressions Predicting Ex-POWs' Offsprings' PTSS

			Total PTSS			Intrusion			Avoidance	I	Hyperarousal
Predictors	β	SEB	$R^2\Delta$	8	SEB	$R^2\Delta$	8	SEB	$R^2\Delta$	β SEB	$R^2\Delta$
Step 1			.001; F(1,61) = .23			.001; $F(1,61) = .27$.001; $F(1,61) = .52$.001; F(1,61) = .25
Negative life events	90.	1.		07	.15		.00	14		.07 .14	
Step 2			$.152^* F(3,58) = 3.47$.003 F(3,58) = .66			$.161^{**} F(3,58) = 3.74$		$.121^* F(3,58) = 2.67$
Negative life events	.05	14		60	.16		.07	.13			
Relationship quality	37**	.15		20	.17		40**	.14		23 .15	
Years of cohabitation	.18	.14		.07	.16		.07	14			
Captivity details	90	14		.07	.17		02	.14		13 .14	
Step 3			$.186^{***} F(1,57) = 16.10$			$.129^{**} F(1,57) = 8.81$		•	$132^{***} F(1,57) = 10.81$		$.112^{**} F(1,57) = 8.35$
Negative life events	04	.13		16				13			
Relationship quality	14	.15		.15			21	.15		07 .15	
Years of cohabitation	9.	.13		.15				13		.14	
Captivity details	.01	1.		.15	.12			.13		08 .13	
Exposure to fathers' stressful behaviors	.51	*. 41.		.42**			•	.13		.39** .13	
R^2			.34***			.17**			.30***		.24***

Fifth, the PTSD-I subscales have been found to be moderately correlated (r=.21 to r=.58). Thus, the interpretation of the unique effect of each of the predictors for these multiple outcome variables should be undertaken with caution.

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