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Original article

The Intergenerational transmission of trauma: When children bear their father's traumatic past

La transmission intergénérationnelle des traumatismes : quand les enfants supportent le passé traumatique de leur père

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ABSTRACT

This article examines of the aftermath of war captivity as implicated in the next (second) generation. Capitalizing on findings from a nearly four-decade and four-wave longitudinal study, we present cumulative evidence regarding the psychological and interpersonal ramifications of war captivity for former Israeli prisoners of war (ex-POWs), and underscore the intergenerational effects of both parents — fathers'/ex-POWs' experiences and their spouses — on their adult offspring. Taking into consideration the relational context of the family system, the article addresses post-traumatic phenomena manifesting among the offspring as impacted by their fathers' trauma and post-traumatic stress symptoms, their mothers' secondary traumatic stress, and the complex interaction of familial sub-systems specifically parental functioning. As not all offspring of the traumatized are equally affected. We also assessed offspring characteristics that may render some of them vulnerable or resilient. These included: (1) gender, (2) "The Big Five" personality traits: Openness, Conscientiousness, Extroversion, Agreeableness, and Neuroticism (3) and differentiation of self. Findings indicate the strong intergenerational effects of trauma, particularly on sons; the mediating effects of parental PTSD; and the role of the offspring's personality characteristics. Clinical implications of the findings are discussed.

Mots clés :
Prisonnier de guerre
Symptômes de stress post-traumatique
Effets intergénérationnels
système familial

RÉSUMÉ

Cet article examine les séquelles de la captivité de guerre au niveau de la génération suivante (ou deuxième génération). Capitalisant sur les résultats d'une étude longitudinale de près de quatre décennies et quatre vagues de recueil, nous présentons des preuves cumulatives concernant les ramifications psychologiques et interpersonnelles de la captivité de guerre pour les anciens prisonniers de guerre israéliens (ex-prisonniers de guerre), et soulignons les effets intergénérationnels des deux parents (c'est-à-dire les expériences des pères/ex-prisonniers de guerre et de leurs conjoints) sur leur progéniture devenue adulte. Prenant en considération le contexte relationnel du système familial, l'article aborde les phénomènes post-traumatiques se manifestant chez leur enfants comme impactés par le traumatisme et les symptômes de stress post-traumatique (SSPT) de leur père, le stress traumatique secondaire de leur mère et l'interaction complexe des sous-systèmes familiaux et plus spécifiquement le fonctionnement parental. Comme tous les enfants des traumatisés ne sont pas touchés de la même manière. Nous avons également évalué les caractéristiques de leurs enfants qui peuvent rendre certains d'entre eux vulnérables ou résilients. Ceux-ci incluaient : (1) le sexe, (2) les traits de personnalité du modèle dits du « Big Five » de

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Cloninger : Ouverture, Conscienciosité, Extraversion, Agréabilité et Neuroticisme (3) et différenciation de soi. Les résultats indiquent les forts effets intergénérationnels du traumatisme, en particulier sur les fils; les effets médiateurs du SSPT parental et le rôle des caractéristiques de la personnalité de leurs enfants. Les implications cliniques de ces résultats sont discutées.

The fathers have eaten sour grapes, and the children's teeth are set on edge

(Ezekiel 18:2)

1. Introduction

Children's psychological difficulties and emotional needs after traumatic experiences — be those abuse, natural disasters, wars, or other adversities — are typically discussed in relation to the emergence of psychiatric or psychosocial problems in the aftermath of events that they themselves have endured. The current article by contrast, addresses children's secondary reactions to traumatic occurrences that they themselves have never directly experienced, and which have mostly taken place long before they were even born. Specifically, this article focuses on the detrimental ramifications of war captivity of Israeli veterans who were captured and held captive as prisoners of war (ex-POWs) in the 1973 Yom Kippur War on the lives of their adult offspring.

1.1. Stressors of War Captivity

War captivity entails extremely pernicious, brutal, and taxing experiences, both mental and physical. During their time in captivity, POWs are often subjected to capricious and sadistic beatings, harsh torture, brutal interrogations, humiliations of many kinds, mock executions, protracted periods of solitary confinement, and cruel punishment by their captors. During their time of internment, the deprivation of basic human needs such as food, drink, sleep, and sanitary conditions is pervasive and intentional. Within this context, benevolent human interactions are scarce, and the captive's total dependency upon the unlikely kindness of his captors may become unbearable.

Within the broader typology of traumatic experiences [1], war captivity belongs to a specific group traumas the are characterize as man-made and protracted strife. As a general rule, man-made traumas, as opposed to natural disasters, for instance, foster a worse post-traumatic aftermath because they include several detrimental repercussions in the interpersonal domain. In this respect they also bear more deleterious ramifications for social bonds [2]. Cruelty during war captivity is considered one of the most reprehensible human-made traumas [3], and its post-traumatic aftermath is compound and complex, including various psychiatric, psychosocial, [4] and interpersonal impairment.

The atrocious interpersonal nature of captivity is often extremely pathogenic, and for a small but significant number of ex-POWs it gives rise to psychological and interpersonal impairments even decades after repatriation [5]. Notably, ex-POWs have been found to exhibit a wide range of psychiatric symptomatology including anxiety and depression [6,7], hostility, obsessiveness, and somatization [8]. Yet, the most common psychiatric sequelae following captivity is post-traumatic stress disorder (PTSD) [9–11]. Studies from different wars and various parts of the world have consistently documented high rates of PTSD among ex-POWs.

1.2. The Yom Kippur War Study (1973)

Given that ex-POWs are considered a high-risk group for psychopathology, a prospective longitudinal study of all land forces ex-POWs who had been captured by the Syrians or the Egyptians was launched by the first author (Z.S), who was at the time the head of the research branch in the Department of Mental Health, the Medical Corp of the Israel Defense Force (IDF). According to Israel's Ministry of Defense, 240 soldiers from the Israeli Army land forces were captured during the war, imprisoned either by the Egyptians for six weeks or by the Syrians for eight months [12]. POWs were subjected to intense isolation and systemic torture, consisting of the infliction of severe physical pain and great mental pressure. These men were exposed to combat stressors including encounters with injured people and dead bodies, active fighting, and exposure to life-threatening events.

This study spanned 4 decades and assessed ex-POWs' physical and mental health and compared it to a matched control group of similar veterans of the 1973 Yom Kippur War who were not held captive across four measurement points: in 1991, 2003, 2008 and 2015. The veterans were asked retrospectively about their experiences prior to 1991, but this was not considered one of the data collection points in any of our studies. Data were also collected from the ex-POWs spouses and mothers of their children, at 3 time points: 2004, 2008 and 2011, and from their adult offspring at 2013–2014.

While information regarding the exact sample and measures used can be found in articles referenced here, generally speaking the studies either examined the father-offspring dyad, or it explored the triad between the father-mother-offspring. The fathers were all members of the Israeli military land-forces. The POWs and control adult offspring groups were comprised of sons and daughters, whose ages ranged from 20 to 58 years. About a third of the offspring were born before the war and captivity and the rest were born after the war. We contacted only one adult offspring from each family. The two adult offspring groups did not differ in age, gender, birth order, marital status, military service, level of religiosity, place of birth, employment, and income. Standardized measures of psychopathology, parenting, personality and life events since the war were used [12].

1.3. The psychiatric sequela of captivity

Our longitudinal studies have clearly shown that while ex-POWs had been repatriated many years ago 18, 30, 35 and even 42 years post-captivity many of them were still not psychologically freed from prison. They suffered from frequent flash backs and nightmares in which they were still subjected to the brutality of their captors, facing executions, unable to escape to freedom. In fact, our studies revealed that ex-POWs have suffered over decades after the war from high rates of PTSD, Complex PTSD as well as high rates of psychiatric co morbidities such as depression anxiety obsessive-compulsive symptoms among other painful co morbid psychiatric symptoms. Moreover, the pathogenic effects of their harsh war captivity experiences gave rise to high rates of physical morbidities including cancer, cardiovascular diseases, diabetics [12].

Moreover, the trauma of captivity did not only leave psychological scars but it has also been remembered and engraved in their bodies. Our studies have also documented and confirmed Bessel [13] assertion that the traumatized exPOWs carry a somatic memory of their harsh experiences as their bodies kept score. In fact, they have developed a unique pain perception and a heightened tendency to catastophilization [14].

As the years past, and the realization that trauma affects not only the individual but also his surroundings had gained currency in the field, we expanded the research and set out to investigate also whether and how captivity might particularly impact the ex-POWs' wives and offspring.

It is noteworthy that throughout the decades during which the study was conducted it has been aided and supported by the Israeli ex-POW NGO, "Awake at Night," which includes membership of most of the Israeli ex-POWs that we studied. Thus, a connection between the principle investigator (Z.S.) and the ex-POWs consolidated throughout the years. In addition, before each wave of assessment, some of the participating ex-POWs were consulted regarding the primary issues that should be investigated. Our interest in the children arose within this context. Some ex-POWs were concerned that they were inapt parents during the years of child rearing, and suspected plausible linkages between their experiences in captivity and their parenting behaviors. Furthermore, they expressed their fear that their own traumatization affected and tainted their children's psychological well-being. Their concern then became also our concern and ignited our curiously in these respects.

In order to understand the intergenerational implications of war captivity, it is important first to gain an understanding not only of the extreme nature of war captivity and its psychiatric sequelae but also of its psychosocial ramifications..

1.4. The psychosocial ramifications of captivity

As noted above, captivity is inherently an interpersonal trauma. It is characterized by a highly intimate, albeit horrendously distorted relationship with captors who have absolute control over their prisoners. One might expect that victims of such atrocities would show greater empathy towards the suffering of others, and be more attuned to their emotional strife, and indeed some do. However, research indicates that for many others, the distorted relationship during captivity may generate a life-long detrimental imprint on ex-POWs' interpersonal relationships, particularly in respect to issues of control, trust, and intimacy. Ultimately, these changes can constitute a profound personality transformation [4,15]. Laub and Auerhahn [16], for instance, emphasize the phenomenon of *failed empathy*, a term which they have coined to address the captors' demonstration of cruelty while fully aware of their detainees' suffering. They posit that such failed empathy and identification with the aggressor distort the captives' expectation of benevolent human interactions, and thus corrupts their capacity to form trust in future interpersonal relationships. Traumatized veterans in general may have profound difficulties in maintaining intimate relationships [17], and the additional interpersonal violations that are part of the captivity environment may further impede the possibility of forming and maintaining close relationships. This makes relationships with an ex-POW more complex and highly challenging for all that are involved. Such complex pathologies that engulf the entire personality have often been addressed in the literature as *complex PTSD*.

Complex PTSD (CPTSD) was conceptualized by Herman [3] to denote a post-traumatic reaction to traumatic events that are: (a) repetitive and prolonged, rather than a one-time occurrence; (b) involve harm or abandonment by someone who is ostensibly responsible for the victim's well-being, and; (c) typically occur at developmentally vulnerable periods in the victim's life, particularly but not exclusively in childhood [18]. The clinical picture of CPTSD, also addressed in the literature as *disorder of extreme stress not otherwise specified* (DESNOS) [19], consists of seven symptom clusters: (a) alterations in regulation of affect and impulses (e.g., suicidal preoccupation, difficulty modulating sexual involvement, excessive risk-taking); (b) alterations in attention or consciousness (e.g., amnesia, transient dissociative episodes); (c) somatization (e.g., chronic pain, cardiopulmonary symptoms); (d) alterations in self-perception (e.g., ineffectiveness, shame); (e) alterations in perception of the perpetrator (e.g., adopting distorted beliefs, idealization of the perpetrator, preoccupation with hurting the perpetrator); (f) alterations in relations with others (e.g., inability to trust, victimization, victimizing others), and; (g) alterations in systems of meaning (despair and hopelessness, loss of previously sustaining beliefs). CPTSD is therefore a disorder that is all-encompassing, and in this sense entails significantly greater impairment than classic PTSD. Moreover, all of its symptoms may have detrimental ramifications in the interpersonal domain, directly or indirectly. In particular, these symptoms disrupt intimate familial relationships, especially spousal and parental.

Broadening the perspective from protracted child abuse and incest to other realms of complex traumatization, we found the CPTSD construct to be well suited for understanding the after effects of war captivity [4]. Our findings indicated that captivity had a deleterious effect on ex-POWs' capacity to connect with others (i.e., their attachment styles), generating more anxious and avoidant patterns within close relationships [4,15,20]. Indeed, taken together, the psychiatric and psychosocial detriments originating in captivity give rise to a complex personal as well as familial dysfunction after repatriation. Thus, the post-traumatic sequelae extend beyond the ex-POW himself and have a detrimental effect on those with whom he is in close contact.

1.5. Ripple effects of trauma: the phenomenon of secondary traumatization

The negative effects of war trauma are not limited to the primary survivor, but can generate a ripple effect and be transmitted to significant others. This phenomenon is typically conceptualized as secondary traumatic stress (STS) [21,22]. Nevertheless, such "contagion" is now considered to be another form of traumatic exposure, as described in the latest edition of the DSM-5 [23]. It is noteworthy that STS does not include only post-traumatic symptoms, but is rather a multifaceted phenomenon that affects several interpersonal domains [24]. For our specific concern here, we focused in our studies on the marital and parental domains.

1.6. Being married to an Ex-POW: the wives' burden and marital adjustment

The implications of captivity for ex-POWs' wives are vast, especially in the wake of PTSD symptoms. In our studies, we compared ex-POWs' wives to the wives of the comparable combatants who had not been captives. We found that ex-POWs' wives experienced higher distress and significantly more PTSD symptoms than the comparison group [25]. They also exhibited lower marital adjustment, more somatization, and reported lower general health compared to the veterans who were not held captive [26]. Furthermore, wives of ex-POWs with PTSD were more vulnerable in the advent of high levels of distress than those married to ex-POWs without PTSD [27], and they evinced more negative cognitions and lower levels of self-worth [28]. Moreover, when ex-POWs were found to have a chronic PTSD trajectory, which is typically characterized by more severe symptomatology as well as a more protracted duration of symptom manifestation, their wives also

reported significantly higher PTSD symptoms and functional disability compared to wives whose husbands endorsed other PTSD trajectories.

Being married to a traumatized ex-POW is thus highly taxing. It involves sharing the burden and the pain of the survivor. Thus, we found that both partners' attachment styles are mutually affected by the trauma and its aftermath [29]. But, what is it like to be born into a family characterized by these troubled dynamics? What prospects can such a couple offer their child? What sort of model do such parents set for their offspring? What are the implications for those who find themselves in a familial atmosphere where PTSD symptoms and relational deficits constantly present a reminder of the atrocities of a horrible past?

1.7. Born to bear the burden: the offspring's condition

The majority of studies devoted to the intergenerational transmission of war trauma have been conducted among the children of combat veterans under the age of 18. Those studies have identified veterans' offspring as a high-risk group, and have specifically underscored various impairments, such as behavioral problems [30], adjustment difficulties and problems in coping with stress [31,32]. Studies have also found depressive and somatization symptoms among combat veterans' offspring [33,34]. Of the few studies conducted amongst adult offspring of combat veterans, high levels of hostility, drug use, and behavior problems have been found [35]. Moreover, offspring whose fathers suffered from PTSD have reported higher levels of PTSD symptoms and lower scores on intimacy measures, compared to offspring whose fathers did not suffer from PTSD [36]. The question we set out to study was how do these deleterious conditions manifest in the adult offspring of traumatized ex-POWs?

Over the years, limited attention was afforded to ex-POWs' offspring. Therefore, not much is known concerning these children's reactions to their fathers' captivity. Moreover, there are notable gaps in the literature concerning the psychiatric and psychosocial impediments of such offspring and their underlying mechanisms.

2. Method

Capitalizing on findings from a nearly four -decade and four-wave longitudinal study, we present cumulative evidence regarding the psychological and interpersonal ramifications of war captivity for former Israeli prisoners of war (ex-POWs), and underscore the intergenerational effects of both parents — fathers'/ex-POWs' experiences and their spouses — on their adult offspring. Taking into consideration the relational context of the family system, we address post-traumatic phenomena manifesting among the offspring as impacted by their fathers' trauma and post-traumatic stress symptoms, their mothers' secondary traumatic stress, and the complex interaction of familial sub-systems specifically parental functioning.

3. Results

3.1. Offspring of Israeli exPOWs

Investigating the offspring's STS, we compared the ex-POWs' offspring and the controls' offspring on measures of PTSD symptomatology and general psychiatric symptoms, as well as on behaviors that are commonly comorbid with PTSD (i.e., interpersonal, sensitivity, psychosis, paranoia, hostility, anxiety, and depression). We found that the ex-POWs' progeny are indeed at high-risk for STS, as they reported higher PTSD symptoms than the controls' children [37]. Differences were found in the total number of PTSD symptoms, most notably in intrusion and avoidance. We also found relatively higher rates of emotional numbing, but not hyperarousal. As evident in Fig. 1, ex-POWs' offspring also manifested significantly worse psychopathology beyond PTSD symptoms. Thus, a more detrimental clinical picture emerged.

Ex-POWs' offspring proved to be more exposed to the stress emanating from their fathers' trauma, compared to the control group. Such excess exposure was measured objectively, by the assessing the duration of cohabitation with the father, as well as the extent to which the child was exposed to several major post-traumatic symptoms. Exposure was also measured in the subjective sense, involving the child's experience of fear as a result of exposure to the father's post-traumatic symptoms. The evidence indicated that the differences in symptom manifestation between the two offspring groups were not only due to the nature of their fathers' traumatic experiences (i.e., captivity versus combat), but also to the specific manifestation PTSD and additional psychiatric symptoms that this traumatization generated among the fathers [37,38]. Fig. 2 presents the severity of the offspring's symptoms according to their fathers' trauma and PTSD manifestations.

Similarly, we also found that the mothers' PTSD symptoms were positively associated with the offspring's STS [39]. These findings bring the pivotal role of the mothers and their well-being to the forefront. The mothers are secondary victims, and yet their parental and spousal roles are of paramount importance. However, their capacity to effectively fulfill these roles is in no way unaffected by the trauma, and must, therefore, also be considered a factor in the family dynamics. Indeed, we found that the ex-POWs' symptoms were implicated in their offspring's symptoms first and foremost when they were also implicated by the wives'/mothers' symptoms (i.e., a mediation) [39]. Thus, the mothers' PTSD emerges as a partial mediator of the effect of fathers' PTSD on their child's well-being.

This implies that the mechanism underlying offspring STS, is only partially explained by the fathers' trauma. Our findings indicate that the offspring's STS was related to the manner in which that trauma and its meaning were present within the family environment, whether in symptomatology, or in the marital and parental interactions. We therefore also addressed these underlying mechanisms of distress as we have come to learn of their operation.

3.2. Parental mechanisms of distress and offspring secondary traumatic stress

Effective parenting includes multiple aspects of child rearing, such as providing for their basic needs, as well as providing physical and emotional security. Good parenting involves parental response to the child's wishes for love and protection on the one hand, and respect for the child's wishes to autonomously explore and expand his relations with the environment on the other [40]. Trauma may impede parental capacity to balance these functions of protection on the one hand and allowing exploration on the other. For instance, in a qualitative study among offspring of Holocaust survivors, it was shown that the intrusive memories of parents impacted the offspring's sense of loneliness, as they took on both a sense of their parent's traumatization and the emotional distance it harbored [41].

We examined this issue empirically by assessing *proximity* to the children, which involves, for example, getting closer when a child needs support; *sensitivity* to the child's needs, which involves being attentive to the child's nonverbal signals for help and support; *cooperative* pattern of caring, which involves the inclination to do things in one's own way; and *over involved* parenting, which involves being too engulfed in the child's problems.

It transpired that the ex-POWs reported lower levels of positive parenting compared to veterans who were not held in captivity. The most notable parenting dimensions that differentiated the groups

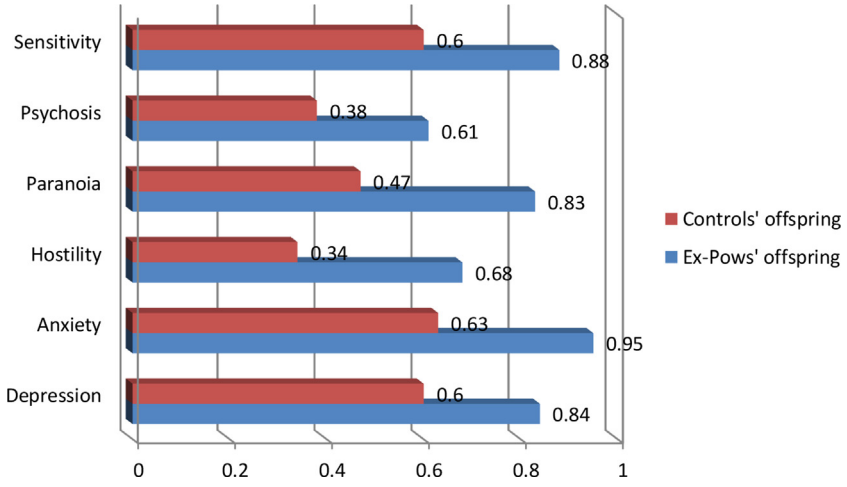

Fig. 1. Ex-POW's and controls' offspring's psychiatric symptoms.

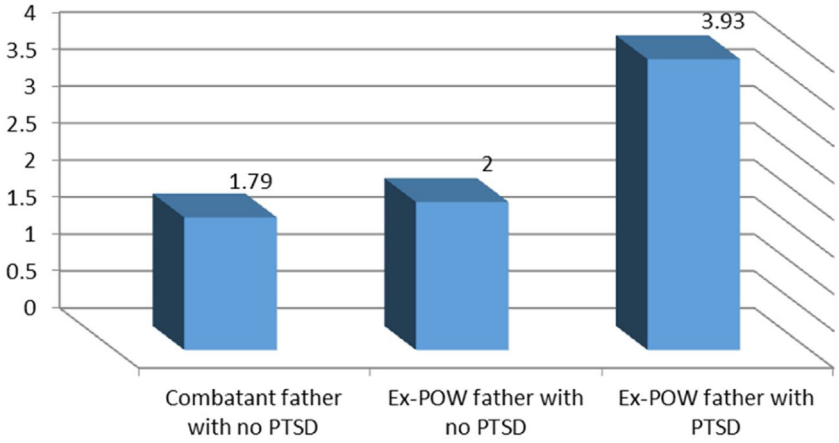

Fig. 2. Offspring PTSD symptoms according to father'z trauma and PTSD.

were proximity to the children and sensitivity to the children's needs [42]. The ex-POWs scored lower than the comparable group on both dimensions, implying a more distant and mal-attuned parent–child relationship. It stands to reason that this impaired parenting explains, at least in part, the process whereby the offspring have been traumatized by their fathers' captivity.

Nevertheless, to avoid speculation, it is imperative that the children's perspective and their perception of such parenting be taken into account. The question then arose whether the children perceived their fathers' parenting in a similar fashion.

In past research among adult offspring of WWII ex-POWs, in which the offspring retrospectively described their fathers' parenting, the participants depicted their fathers as being uncaring regarding their emotional needs during childhood [43]. Thus, as a supplement to our study with the ex-POWs, we too asked their adult offspring to retrospectively report about their fathers' parenting regarding two main qualities of parental bonding that have been underscored by the literature. The first is parental care, which is characterized by emotional warmth, empathic attunement, and proximity, as opposed to emotional neglect, poor attunement or apathy, and emotional distancing. The second quality was over-protectiveness, which consists of overbearing control, intrusiveness, and impingement on the child's autonomy, versus encouragement of the child's autonomy and independence [40]. The Parental Bonding Instrument (PBI) [40] was devised to empirically assess these qualities, and was employed in our study.

We found that the ex-POWs' offspring mirrored their fathers' sentiments and reported lower paternal care in childhood compared to that reported by the control group. We also found a positive association between ex-POWs' offspring's STS and their fathers' overprotection, as well as a negative correlation between their STS and the fathers' paternal care. We found that ex-POWs' offspring were more inclined than controls to characterize their fathers as an absent parent and emotionally cold. Conversely, they were less likely than controls to characterize their fathers as being an optimal parent or otherwise over-sensitively protective. Not surprisingly, we found that an offspring's perception of the parental capacities and styles of their father was closely related to their STS, and that such perceptions accounted for much of the association between the offspring's exposure to their fathers' trauma and emerging symptomatology [37].

In addition to the reported parental impediments, much like their fathers, the offspring also demonstrated relational deficits that were evident in attachment insecurities. As expected, we found these insecurities to be closely related not only to their fathers' PTSD but also to the fathers' parenting deficiencies [44]. In fact, a more holistic relational model would suggest that ex-POWs' symptoms, attachment insecurities (primarily attachment avoidance), and impaired parenting are all interconnected, and work in tandem to detrimentally affect the child's secondary reaction to the father's original captivity and its aftermath.

When taking into consideration the experience and resulting effects of trauma, particularly the manifestation of PTSD, it is not

surprising that trauma survivors' parenting styles may be detrimentally affected [45–47]. Studies reveal that intrusive symptoms are implicated in parents' preoccupation with him- or herself; avoidance symptoms undermine interpersonal relationships and intimacy; emotional numbing reduces emotional engagements; and hyperarousal symptoms can increase the likelihood of conflict [45], and are associated with increased anger and aggression [47]. The overall availability and emotional attunement of a parent may be considerably hindered by PTSD symptomatology. They may also be hindered by the quality of the marital relationship, and the overall quality of relationships within the family unit.

3.3. The Marital Couple and the Offspring

As noted, PTSD does not occur in a vacuum, nor does war captivity. Aside from the clear relationship between the fathers' PTSD, parenting style, and the offspring's STS, there are additional factors within the family environment that must be taken into consideration in order to paint a fuller picture. One of the first relationships to suffer from the father's trauma is the marital relationship [17].

The ex-POWs' PTSD also impacts the quality of the marital relationship. Marital or dyadic adjustment consists of several dimensions including satisfaction, consensus, cohesion, and affection expression [48]. These denote the level of happiness, the ability to resolve conflicts, to collaborate, to make important decisions and to express emotions.

Realizing that both parents are caught up in the aftermath of the fathers' captivity, primarily in the resulting PTSD, we began looking at the family unit as a triadic and examine the offspring's STS in relation to family sub-systems. We found that fathers' marital adjustment impact the offspring's marital adjustment for the worse [49]. Further validating this notion, we found that the tendency of ex-POWs and their wives to be more forgiving towards one another had a positive impact on their offspring, and was associated with lesser degrees of STS in the children [50]. In short, impediments to the marital relationship are closely tied to shortcomings in parent–child relationships.

3.4. Mothers parenting and offspring STS

Having discussed the fathers' parenting, we also considered the mothers' parenting. The parenting of women who have been exposed to trauma may be hindered by the emotional numbness they harbor, and they too may find that they cannot be adequately attuned to their children's emotional needs [51]. A similar effect may be evident when mothers are vicariously (i.e., secondarily) exposed to their husbands' trauma. A study among adolescent offspring of Croatian combat veterans with PTSD found that they perceived both of their parents as lacking in care and exhibited more impaired mother–child and father–child bonding than control subjects [33]. Similarly, our findings revealed that since the stress of captivity affects both partners' symptoms, it is concomitantly associated with the perceived quality of their marriage. Importantly, a spillover effect is evident from the marital to the parental relationship. Indeed, our studies indicated that among ex-POW families, both caregivers demonstrate worse parenting capacities and marital discord than what is evident in comparable families [52]. In such families, offspring appear to pay a terrible price. Overall, a family environment that includes a father who has been traumatized by captivity and his wife is at risk for secondary traumatization is less favorable for the children, and may result in their experiencing greater distress and STS. These findings call for a more systemic understanding of the toll that captivity bears for ex-POWs' offspring.

3.5. What accounts for differential vulnerability?

There remains considerable variability among the offspring of traumatized ex-POWs, as some were severely affected by their fathers' plight, while others were only mildly affected or ostensibly not affected at all. The question that then arises is: What differentiates those who were detrimentally affected from those who were not? Some of the variance may be attributed to the parenting and family environment [53]. In addition, some of the variance may inevitably originate in individual differences that more readily concern the offspring. To date, these have received far less attention in the literature. We believe that it is time to pay attention to the children. Therefore, we will now consider and discuss three (of many) of the offspring characteristics that may render them either vulnerable or resilient: (1) gender, (2) "The Big Five" personality traits: Openness, Conscientiousness, Extroversion, Agreeableness, and Neuroticism (3) and differentiation of self.

3.6. Does gender matter?

Gender has been repeatedly observed as a strong predictor of distress and psychopathology in the wake of adversity. One of the recurrent findings in the psycho-traumatology literature is the gender difference in PTSD and PTSS [54]. There is extensive evidence across different nations, range of traumatic events and assessment instruments, for higher rates of PTSD and stronger intensity of PTSS among women than men [55,56]. Moreover, even when men experience higher rates of potentially traumatic events, women have much higher rates of PTSD and PTSS, ranging from 7 times that of men among Israelis in the Second Intifada [57], and to about two-fold higher risk [58]. We set out to assess the role of gender in response to parental trauma due to captivity in the offspring of traumatized veterans. Specifically, we asked whether the daughters of traumatized ex-POWs are at increased risk for secondary PTSD or PTSS than the sons of ex-POWs.

Only a limited number of studies have examined gender differences in PTSD and PTSS among family members of primary trauma survivors. A recent review [59] and a meta-analysis [60] concluded that without having experienced the traumatic event itself, females have higher susceptibility for secondary PTSD or PTSS than males. Among the reviewed studies, which mainly focused on traumatized victims' partners, a smaller number of studies focused on gender differences among traumatized victims' offspring [61]. The results of these studies also show higher rates of PTSD and higher levels of PTSS among daughters as compared to sons [62].

3.7. The role of gender in transmission of trauma across generations

Another important related area of inquiry is the role of the parent's gender vis-à-vis offspring gender. As it has been argued that parents may have a more significant influence on same-sex offspring compare to different-sex offspring, father-son dyads might be more profoundly correlated as compared to father-daughter dyads [63]. Yet in our studies the wives/mothers were documented as being at a high-risk for secondary PTSS themselves [27]. Therefore the following questions arise: do sons have higher PTSS than daughters of POWs? Are same-sex correlation between parents and offspring higher than opposite sex-correlations (e.g., are father-son correlations higher than mother-son correlation) when the fathers (the primary trauma survivor) and their wives, the offspring's mothers, both suffer from PTSD?

A recent study of Australian Vietnam veterans' families found that the odds for sons' PTSD were somewhat higher than among the daughters in this study, PTSD in a veteran father, but not mother, was linked to PTSD in his offspring. Other studies, however, found

the opposite. For example, Yehuda et al. [61] found that among Holocaust survivor families, the presence of maternal — not paternal — PTSD was associated with PTSD in their adult offspring.

Regarding our first question, we [64] compared daughters and sons of traumatized ex-POWs in regard to the total number of PTSS as well as the four individual PTSD symptom clusters as they appear in the DSM-IV: intrusion, avoidance, numbing, and hyperarousal [65]. Contrary to what we expected based on the main body of literature regarding war-related primary survivors [66], and secondary survivors [59], our results show that sons of ex-POWs showed higher levels of secondary PTSS compared to daughters. Sons reported a higher total of PTSS and numbing symptoms (a symptom of PTSD) as compared to daughters, with medium to large effect sizes, respectively. We did not find significant group gender differences in intrusion, avoidance, and hyperarousal symptoms (also PTSD symptoms), and the effect sizes were small [64].

How can these surprising findings regarding gender differences be explained? As this finding regarding gender differs from that of previous studies, methodological differences among studies should be considered. First, in the majority of previous studies the children were young and here we assessed young adults; the offspring ranged in age between 20 to 58 years. Second, the few and limited studies that were conducted had relatively small samples. Third, studies were conducted in various cultures and in the wake of different traumata. As it is vital to consider the role of culture and expression of trauma, it is significant to note that in Israel military service is mandatory for all youth upon graduating from high school. Therefore, the sons and daughters of former POWs will be serving in the military as well; this differs from other countries where there is not a mandatory draft.

Having grown up in Israel, the adult offspring of ex-POWs are familiar with the horrific experiences that Israeli ex-POWs — among them their own fathers — went through in captivity [12]. Given that most Israeli men are required to complete mandatory military service, they are likely to identify with their father's plight in captivity. As Israeli soldiers, the dangers that military service entails may be real for them and may give rise to anxiety. Indeed, in a previous study on Combat Stress Reaction (CSR) of Israeli casualties whose parents were Holocaust survivors, we found that their latent vulnerability was expressed [67]. The exposure to combat of the second generation seems to have unmasked a latent vulnerability that was not activated by more run-of-the-mill life events. The picture of their post-trauma is suggestive of reactivated PTSD, which is also more severe and enduring than a first episode. The symptomatology of the second-generation subjects resembles the clinical picture of their survivor parents. The second generation reported more intrusive symptoms, hyper-alertness, cognitive impairment, and guilt feelings than casualties without a Holocaust background [68]. These are all symptoms that are highly reminiscent of the nightmares and flashbacks so prevalent among Holocaust survivors and of the survivors' often-noted on-going anxiety and guilt [67].

Men and women tend to differ in type of distress symptoms. Male psychopathology takes an overt form (i.e., aggression) more than women who tend to internalize their distress (e.g., they are more likely to show depression) [69]. The symptomatic expression that mostly differentiates sons from daughters in our sample, with medium to large effect size, was emotional numbing symptoms, which are closely related to depressive or "negative alterations in mood" post-traumatic symptoms [23].

Concerning our second question above, the PTSS of the daughters were significantly correlated with the PTSS of the father, whereas the PTSS in sons were not significantly correlated with fathers' PTSS. In a similar vein, while parental care was found to be a significant predictor of both sons' and daughters' PTSS, the daughters' distress was related to both parents' care and protection for the daughters, while sons' distress was only related to fathers' care and overprotection [64]. These results suggest complex interactions among parental differential caregiving to sons and daughters, possible differential sensitivity of sons and daughters with fathers' distress [59], and differences between sons and daughters in caretaking burdens [44,64] and parent–child bonding [37].

3.8. Personality traits of the offspring of ex-POWs

As noted above, not all offspring of the traumatized veterans or ex-POWs suffer from secondary traumatization, another major challenge is to identify personality-related factors that render some individuals more vulnerable or otherwise more resilient than others. In other words, are there personality characteristics that can protect the significant others of primary survivors from secondary traumatization? Are there specific personality-related coping mechanisms that can enable some second-generation survivors to withstand the shadow of their parents' traumatic past, their parents' plight, and their impaired parenting without suffering from secondary PTSD?

Evidently, for the most part, offspring personality traits seem to have gone under the radar in extant investigations.

Offspring's personality traits were not assessed in a recent meta-analysis devoted to the phenomenon of intergenerational transmission of trauma [70], nor have they been considered in systematic reviews regarding secondary trauma among veterans' offspring [53,71]. Thus, while the association between personality traits and PTSD has been demonstrated in primary trauma victims [72,73] and particularly among combat veterans [74], to the best of our knowledge, ours is the first study to have examined the implications of the offspring of traumatized veterans' personality traits in their secondary traumatization [75]. We set out to examine the role that offspring personality traits play within the intergenerational transmission of post-traumatic psychopathologies from traumatized fathers to offspring.

3.9. The 'Big Five' Personality Traits among offspring ex-POWs: possible risk factors for secondary post-traumatic symptoms

Personality traits are typically conceptualized as domains of individual differences demonstrated by persistent patterns of thoughts, feelings, and actions throughout developmental periods and contexts [76]. One of the most prominent structural personality models, confirmed across numerous cultures and fairly stable over time, is the Five Factor Model (FFM) [76], also known as "The Big Five". It includes the following dimensions: (1) Openness to experiences (e.g., being imaginative, original, and curious, versus being down-to-earth, conventional, and uncurious); (2) Conscientiousness (e.g., being hardworking, well-organized, and punctual versus being lazy, disorganized, and late); (3) Extroversion (e.g., being affectionate, talkative, and active versus being reserved, quiet, and passive); (4) Agreeableness (e.g., being trusting, generous, and lenient versus being suspicious, stingy, and critical) and (5) Neuroticism (e.g., being worried, emotional, and self-pitying versus being calm, unemotional, and self-satisfied).

Given the dearth of personality-focused research in the field of intergenerational transmission of trauma, we drew on the literature concerning primary exposure to trauma as our point of departure [75]. We queried the two groups of offspring of the aforementioned Yom Kippur veterans: Those whose fathers were held captive and those whose fathers fought on the same front but were not held captive. We assessed the offsprings; (1) PTSS and level of psychological distress; (2) personality traits via the Big Five Inventory [77] designed to measure each of the five personality factors, and (3) the effects of their personality traits.

Our findings revealed that Neuroticism was the personality trait that was most strongly and positively correlated with offspring's PTSS and general distress, while Conscientiousness and Agreeableness were negatively correlated with offspring's PTSS and general distress [75]. Interestingly, Openness and Extroversion were neither associated with offspring's PTSS nor general distress. These findings implicate personality traits for the first time in the intergenerational transmission of trauma. These findings suggest that among the offspring (as both the ex-POWs and controls' children were assessed together), those with more neurotic personality are at a greater risk for secondary traumatization, as are those who are less agreeable and less conscientious [75].

Among the Big Five, high Neuroticism has been considered to be a predisposition or a risk factor for elevated PTSS [78,79]. People who are high in Neuroticism tend to be preoccupied with possible threats and past grievances [76]. Their coping strategies have been found to be less adaptive than those who are less neurotic [80]. These individuals' inclination to focus on elements in their environment that are negative and threatening makes them more vulnerable than others in that the negative interpretation and appraisal of a traumatic event are pivotal in the manifestation of PTSD [81]. In fact, neurotic individuals are inclined to engage in involuntary preoccupation with the trauma and its implications and suffer from negative alterations in mood and cognitions that are observed in PTSD [23].

High levels of neuroticism are also associated with a tendency to refrain from utilizing social support or otherwise perceive given support as less supportive [82,83]. Since lack of perceived social support has repeatedly been identified as a risk factor for PTSS [84], high neuroticism may be associated with more PTSS via this route. Furthermore, studies indicate that personality traits may be implicated in increased exposure to traumatic experiences [85,86]. Specifically, it has been found that individuals high on neuroticism tend to find themselves exposed to more traumatic events [87,88], thus placing them at a higher risk for PTSS.

At the same time, however, one cannot negate the possibility that offspring's personality traits affect their father's parenting. Leen-Feldner et al. [53] suggest that "sophisticated models of the impact of elevated paternal PTSS on offspring will have to address potential child-driven effects" which refer to parenting behaviors that are elicited by offspring characteristics (p. 1127). In this respect, the offspring's personality may affect the manner in which parenting is exercised [89] and hence, it may also affect the manner in which trauma's aftermath is transmitted from parent to child.

Indeed, available evidence for these bidirectional associations suggests that the child's temperament (e.g., negative affectivity) and emotional and behavior problems (e.g., opposition and noncompliance) affect parenting [90]. For example, children's behavior problems have been shown to be moderately associated with harsher and less warm caregiving [91]. The literature suggests that in part the children themselves evoke the variability seen in parental behavior; i.e., those children who exhibit more problematic behaviors tend to receive less warmth and harsher discipline from their parents. Even after controlling for shared genetic effects with their parents, Pike and colleagues found that more irritable, negative or aggressive children were more likely to receive negative parenting than other children [92].

Though neuroticism is undoubtedly the trait that is most commonly linked to PTSD, it is not the only trait associated with PTSS [75]. Our findings also show that conscientiousness and agreeableness were negatively associated with offspring PTSS and general distress. These personality traits have been associated with negative affect, lower sense of self-efficacy, and less effective coping in the face of adversity [83,93,94], and should therefore be conceived as markers of vulnerability.

Finally, biological factors may be at play, though they were beyond the scope of our study. Research suggests that personality traits are in part genetically inherited [95]. Additionally, recent findings indicate that exposure to traumatic stress may include epigenetic implications [96] and intergenerational transmissions of stress vulnerabilities may be associated with parental genes [97]. High neuroticism and low openness have been associated with low cortisol reactivity, which has been associated with greater vulnerability to stress [98]. In light of new epigenetic findings, these observations may suggest that intergenerational transmission of personality and biology may work in tandem to predispose offspring who were born after the trauma to secondary traumatization.

3.10. Differentiation of the self as a risk factor for post-traumatic psychopathology

An additional factor to be examined in this article as a potential buffer for secondary traumatization is differentiation of the self. We adopted the perspective that the offspring of the traumatized should not be viewed as passive recipients of their parents' plight and subsequent impaired parenting [99]. Hence, we assessed yet another construct that we hypothesized to be playing a role in the intergenerational transmission of trauma, namely the differentiation of self.

According to Bowen's Family Systems Theory, the individual's capacity for differentiation is related to his/her concept of emotional maturity [100]. Differentiation develops within the context of one's family of origin and is strongly connected to it. Self-differentiation ideally allows the child to grow and be an emotionally autonomous individual while still feeling connected to others. One's level of differentiation affects the extent of the person's conformity or autonomy in relations to others. Interpersonally, someone with low levels of differentiation could fuse with another to the point of losing one's sense of self, whereas someone who is too highly differentiated would be emotionally cut off from his or her family [101]. An emotional cutoff can occur when the individual manages unresolved emotional issues with immediate family members by sharply reducing or completely cutting off emotional contact. This can manifest by people physically moving away or emotionally distancing themselves from their families, rarely visiting, or even visiting but avoiding any emotionally loaded or sensitive issues. However, people can live within many gradations of these two antipodal extremes.

Studies have found that a highly differentiated individual would be effectively able to manage stress or pressure, and be less likely to develop psychopathological symptoms [102]. For example, in a recent study, the second and third generations of Holocaust survivors reported significantly lower levels of differentiation of self, which were associated with higher levels of secondary traumatic stress [103]. The few studies that assessed differentiation among war induced trauma survivors and their relatives demonstrated that low differentiation was related to higher PTSS among ex-POWs [25,104] and the spouses of traumatized veterans [105], as well as higher levels of somatization among the latter [106].

One explanation for the effect of ex-POWs' trauma on offspring's self-differentiation may come from its impact on the family environment. The differentiation of self develops through prolonged encounters between offspring and their families, exposure to family values and behaviors, and their internalization [107]. Normative childhood development involves gradual formation of a suitable distance between the offspring and their parents during adolescence [108]. This distance is necessary for identity formation. Fathers who experienced significant trauma might have trouble in affect regulation [71], might demonstrate dominance over their family members [109], and be insensitive to their

offspring's needs [42]. In such a family atmosphere, offspring might have trouble forming and preserving their differentiated individuality [110] and later separate themselves from their father's trauma and PTSS. Thus, the absence of sufficient and adaptive differentiation might lead ex-POWs' offspring to experience difficulties in regulating their psychological arousal following the fathers' PTSS, which might in turn contribute to their secondary PTSS.

Several studies have suggested that self-differentiation mediates the relationship between stress and outcomes such as distress [111,112] and adjustment [113]. Indeed, we found, an increase in the ex-POWs' PTSS over the years was found to be correlated to lower levels of the offspring's self-differentiation, that was correlated to higher rates of PTSS [99]. As pointed out earlier in this article, offspring of traumatized persons are potentially exposed to severe stress in their homes as well as low levels of positive parenting. In the face of exposure to such an inadequate family environment, such offspring might experience low levels of differentiation that in turn may contribute to their secondary traumatization.

In the face of exposure to fathers' stressful behaviors, we found that ex-POW's children reported more secondary trauma symptoms and higher levels of differentiation, namely emotional cutoff, compared to the children of controls [114]. Furthermore, in ex-POW's children some significant positive relations between general exposure and secondary PTSS symptoms was observed. That is general exposure and secondary PTSS were negatively related to emotional reactivity and emotional cutoff dimensions of self-differentiation. Among ex-POW's children, the emotional cutoff mediated the association between exposure to stress stemming from fathers' behaviors and secondary PTSS.

It is possible that elevated levels of anxiety among poorly differentiated ex-POW's children might potentially prevent them from effectively coping with exposure to stressful events related to their fathers' post-captivity behaviors, and thus render them at higher risk for secondary PTSS. Specifically, emotional cutoff might serve to some degree as a psychological defense mechanism and buffer against an anxiety provoking family environment. However, the isolation from others as well as from their emotions is likely to prevent ex-POW's children from confronting their own traumatic experiences, and thus be detrimental.

As noted, our conceptual framework suggests that considering offspring as passive recipients of their parents' effects is insufficient for understanding the relation between the fathers' traumatic exposure and PTSS and their offspring's subsequent distress. The offspring's personality and behavior changes, as a result of impaired parenting practices exhibited by their traumatized parents; and these changes, in turn, play a role in the process of the intergenerational transmission of psychopathology [115,116]. Therefore, we also merged the longitudinal data regarding veterans and ex-POWs' PTSS with the data related to their offspring's differentiation of the self and secondary PTSS [99]. Specifically, we examined the mediating role of the offspring's personality construct of differentiation of the self on the association between the fathers' PTSS and adult offspring's PTSS. Results show that increase in the fathers' PTSS over the years was related to high levels of his offspring's PTSS [99]. We also found that among ex-POWs' offspring, self-differentiation mediated the association between the father's PTSS and the offspring's PTSS. Thus, a greater increase in the ex-POWs' PTSS over time was correlated with lower levels of the offspring's self-differentiation, which in turn was correlated with higher rates of PTSS. Thus, both veterans' PTSS and offspring's self-differentiation are significantly relevant factors in mechanisms of intergenerational transmission of captivity trauma [99].

4. Discussion

4.1. Limitations

Our studies have several limitations. First, data were collected via self-report questionnaires that are vulnerable to reporting biases. Second, data were collected at a specific time point, which does not enable the thorough and continuous examination of intergenerational transmission processes during the gap between the war and later measurements. Third, only one offspring per family was examined in this study. There might be differences in personality–dimensions between various offspring in the same family, in the way they experience the family atmosphere and their parents' behavior, and the manner in which they respond to these experiences.

4.2. Clinical implications

As evident above, for the offspring of ex-POWs, the long problematized biblical assertion: "The fathers have eaten sour grapes, and the children's teeth are set on edge" (Ezekiel 18:2) may truly be an unfortunate predicament. Though much has been learned from the literature concerning the second-generation of Holocaust survivors [117], the study of other traumatized populations such as ex-POWs' offspring is still in its infancy. Much more systematic longitudinal studies that target entire families are needed in order to understand the intergenerational ramifications of parental trauma, and individual differences in offspring's adaptations to their parents' traumatization.

The clinical implications of our findings, however, are clear. The omnipresence of the trauma via both primary and secondary exposures and psychological sequelae, all combine to impact the family environment and the marital and parental relationships that constitute it and thus potentially become detrimental to the children. Clinicians must, therefore, monitor offspring who are at high-risk for STS, and where appropriate, assist such families to process the trauma more adaptively and to foster a healthier family environment.

Clinically, our research suggests that personality traits, particularly neuroticism, should be taken into account when working with the offspring of traumatized veterans. Clinicians could ideally work with the offspring in cultivating a more adaptive personality (for example, less neurotic, but more agreeable and conscientious). When working with younger clients who are the children of POWs, especially at ages most susceptible to personality formation (i.e., prior to young adulthood) [118]. Clinicians can also work to promote healthier self-differentiation from the family of origin, and explicitly explore with clients the manner in which their differentiation is impacting current relationships and functioning.

Our research has repeatedly demonstrated the potential repercussions of trauma on the veterans and their families, demonstrating its effects on a whole generation after the war's end; our findings raise questions as to how future generations could be affected as well. Therefore, when a country sends out its soldiers to war, it is imperative to have both immediate as well as long-term mental care policies and programs in place to care for the veterans, their families, and their offspring. It is important for society to provide support for its warriors and POWs in the aftermath of war and conflict, and focus on promoting a resilient outcome for them and their progeny.

Disclosure of interest

The authors declare that they have no competing interest.

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