Journal of Traumatic Stress
February 2014, *27,* 35–41

ISTSS International Society for Traumatic Stress Studies

The Hidden Effects of Child Maltreatment in a War Region: Correlates of Psychopathology in Two Generations Living in Northern Uganda

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Adverse life experiences are a major risk factor for psychopathology. Studies from industrialized countries have consistently shown the detrimental effects of child maltreatment on the mental health of the victims. Research in war-affected populations, however, has mostly been restricted to the psychological damage caused by the war. Both war trauma and child maltreatment have rarely been studied simultaneously. In a comparative study of 2 generations living in severely war-affected regions in Northern Uganda, we determined the relationship between both trauma types and posttraumatic stress disorder (PTSD), anxiety, depression, and suicide ideation. A total of 100 adolescents, 50 with and 50 without a history of abduction by the rebel army with both their parents (100 mothers and 100 fathers) living in camps in northern Uganda were interviewed. The study showed that both generations were severely affected by war and child maltreatment. Both trauma types were independently correlated with psychological disorders in the adolescent group. Only child maltreatment, however, not war violence, accounted for PTSD symptoms in the parent group ($\beta = .253$, $p = .002$). We conclude that, even in the context of severe war, the impact of child maltreatment on psychological disorders surpasses the damage of war trauma.

The negative psychological impact of war trauma on both combatants and civilians has been well documented (e.g., Ehntholt & Yule, 2006; Klaric, Klaric, Stevanovic, Grkovic, & Jonovska, 2007; Priebe et al., 2010; Somasundaram & Sivayokan, 1994). Across different cultures and settings, epidemiological surveys of war-affected populations (e.g., de Jong, Komproe, & Van Ommeren, 2003; Neuner et al., 2004) have found high rates of posttraumatic stress disorder (PTSD) and depression (Reed, Fazel, Jones, Panter-Brick, & Stein, 2012; Richards et al., 2011; Roberts, Ocaka, Browne, Oyok, & Sondorp, 2008). Among war-affected individuals a variety of risk factors for poor mental health, including demographic variables (Murthy & Lakshminarayana, 2006) and daily stressors (Miller & Rasmussen, 2009) have been reported. The most robust and dominant predictor, however, of PTSD as well as depression has been amount of exposure to traumatic war events (Blair, 2000; Steel et al., 2009). Several studies among conflict populations (e.g., Ai, Peterson, & Ubelhor, 2002; Laufer, Gallops, & Frey-Wouters, 1984; Thabet, Abu Tawahina, El Sarraj, & Vostanis, 2008) have shown a linear dose-effect relationship between the number of different traumatic events and PTSD.

The detrimental effects of child maltreatment, in the context of family violence has been noted to occur in industrialized countries which are without a recent history of war. Child maltreatment has been linked to a variety of adverse long-term effects such as physical diseases as well as risky and criminal behaviour (Gilbert et al., 2009). In addition, prospective (Widom, DuMont, & Czaja, 2007) and large-scale retrospective (Edwards, Holden, Felitti, & Anda, 2003) studies have found that child maltreatment as well as other aversive childhood experiences are risk factors for adolescent and adult psychological disorders, including anxiety and depression. The gravity of the negative impact of child maltreatment on the well-being of the victims in their future as adults is a real concern because " . . . all but the mildest of childhood traumas last for years. The child's responses, in fact, may create a number of different kinds of problems in adult life" (Terr, 1991, p. 19).

A few exceptional studies, however, have examined the relative contribution of both family and war violence in a single population. The simultaneous study of both types of violence is important because high rates of child maltreatment have been

We acknowledge the efforts and support of Deutsche Forschungsgemeinschaft (DFG), parents and adolescents, Social Science Research Council, local counsellors, and vivo international team.

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DOI: 10.1002/jts.21892

Table 1
Sociodemographic Characteristics of Adolescents and Their Parents

	Parents ($n = 200$)				Adolescents ($n = 100$)			
	Nonabducted ($n = 74$)		Abducted ($n = 126$)		Nonabducted ($n = 50$)		Abducted ($n = 50$)	
Variable	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*
Age in years	44.40	10.50	42.90	9.80	14.00	1.60	15.20	1.40
Times displaced	2.70	1.90	3.49	3.41	2.42	1.81	3.18	2.45
Education in years	3.00	2.70	4.83	3.04	5.54	1.34	6.34	2.96
Daily meals	1.40	0.55	1.38	0.54	1.46	0.58	1.44	0.50
Family possession (U.S. $)	0.39	0.44	0.55	1.53	0.64	0.95	0.34	0.18
Illnesses in the past month	4.30	1.87	4.32	2.34	4.80	1.95	5.12	1.73
Child maltreatment	9.00	4.92	11.90	5.64	7.00	4.54	11.64	6.56
Abduction duration (days)	–	–	36.96	104.40	–	–	396.60	489.00
War trauma event types	11.40	4.40	17.03	4.32	7.10	4.20	18.70	3.84

reported in war-affected countries (e.g., Catani, Jacob, Schauer, Kohila, & Neuner, 2008) and there is reason to assume that war violence translates into family violence (Catani et al., 2009). Consequently, it might be a procedural error to overlook family violence against the background of apparent war trauma in mental health research among war-affected populations.

The current study was carried out in the severely war-affected region of northern Uganda, where there is a civil war between Kony's Lord's Resistance Army rebel group (LRA) and the Uganda government army. The nearly two decade war drove close to 80% of the population of northern Uganda into internally displaced persons (IDP) camps. The LRA employed the cruelest war tactics including the killing of parents in front of their children and vice versa (De Temmermann, 2009). They also abducted scores of people, especially children (Annan, Blattman, & Horton, 2006; Human Rights Watch, 2003). Many times, parents were abducted along with their children to carry luggage, and the children were conscripted into the rebel rank and file (De Temmermann, 2009; El-Bushra & Sahl, 2005). The rebel activities disrupted the harmonious and patriarchal family system of the Acholi people (Enomoto, 2011; Mazrui, 1995) literally destroying the social fabric (El-Bushra & Sahl, 2005; Human Rights Watch, 2005). The abducted adolescents, the prime targets of the LRA, suffered the most from the atrocities in comparison to other abducted persons (Amone-P'Olak, 2003).

The high levels of trauma experienced (Amone-P'Olak, 2003; Bayer, Klasen, & Adam, 2007; De Termmerman, 2009), and the resulting psychopathology of the adolescents have impacted their adjustment to life in the community (Ertl, Pfeiffer, Schauer, Elbert, & Neuner, Submitted). This maladjustment of the adolescents and that of their parents equally affected by war over the years may be reflected in family violence.

The aim of this study was to determine the relative contribution of war and family violence to PTSD and depression, the most common psychological disorders among war-affected populations (de Jong et al, 2003; Neuner et al., 2004). The study also aimed at comparing the relative impact of different types of traumatic events as a function of the individual's development status. Though both war and family violence have independent contributions to psychopathology in both groups, we hypothesized family violence to be more strongly associated with psychological distress among adolescents than among their parents because of the recent or continuing occurrence of family violence against adolescents. As the northern Uganda war had children and adolescents targeted for abduction, we also expected higher levels of psychopathology among the adolescents than their parents.

Method

Participants and Procedure

Table 1 provides sociodemographic characteristics of adolescents and their parents. Means and standard deviations are presented for continuous variables.

The study sample consisted of 300 participants including 100 adolescents aged 12 to 17 years and their biological parents. Out of the 100 adolescents, 50 were formerly abducted and 50 had never been abducted. To meet inclusion criteria for the study, the 12- to 17-year-old adolescents had to be living with both their biological parents at the time of the study. To identify formerly abducted adolescents, we obtained a full list of formerly abducted children and adolescents who were registered and resettled in the camps by the local nongovernmental organization, Gulu Support the Children Organization. Due to the heightened security situation in northern Uganda in early 2006, we only recruited adolescents from IDP camps (Coope, Alokulum, Lacor, Labora, & Tetugu) within a radius of 12 kilometers from Gulu town. Within these camps all registered formerly abducted adolescents meeting the inclusion criteria were interviewed.

A systematic semirandom sampling procedure was employed to recruit an equal number of nonabducted adolescents from the same camps. Interviewers moved in different directions in the camp from a central location determined by the team of interviewers. Every fourth household in the direction selected by a toss of a pointed object was screened for nonabducted adolescents meeting the inclusion criteria. If two or more adolescents from one household were eligible for the study, one participant was randomly selected. The interviewer wrote the names of the children on separate pieces of paper, folded the papers, shuffled them, and blindly picked one. For both abducted and nonabducted adolescents, parents were recruited via their children.

Interviews were conducted by 10 (five male and five female) local (Ugandan) screeners who had been extensively trained (in basic trauma theory, therapy, and interviewing) by our workgroup in the administration of structured diagnostic interviews including the instruments used in this survey. The interviewers had also undergone training and supervision with respect to basic therapeutic skills and the treatment of PTSD during an earlier epidemiological study (Ertl et al., 2010).

After identifying children eligible for the study, their parents were contacted and appointments for interviews were made. Prior to the interviews, parents' informed consent for both themselves and their children were sought. In addition, the children's informed assent was obtained separately. All participants were informed about the methods of interview, confidentiality, risks, and option of withdrawing from the interview without any negative consequences.

Interviews took place at participants' homes. Where possible, different interviewers interviewed members of the same family at the same time. In case one parent was not present at the appointed time, interviewers waited for the parent to return to conduct the interview on the same day. The ethical review boards of the University of Konstanz and the Mbarara University of Science and Technology approved the study.

Measures

Study instruments assessing traumatic experiences, PTSD, anxiety, depression, and suicide ideation symptoms had already been translated into the local Luo language employing translation and blind back translation for the use in a large epidemiological mental health survey in the area (Ertl et al., 2010). Two additional questions about former and current occupation were translated into Luo by a local language expert and reviewed by a team of bilingual interviewers experienced in the field of mental health. The same set of instruments was used to interview both adolescents and their parents.

The first part of the interview consisted of a sociodemographic questionnaire about individual and household characteristics that had previously been developed for use among refugees and internally displaced persons in Uganda. The assessed household characteristics were household size; frequency, type, and source of feeding; and household possessions (sum of assets of the participant's household weighted by the respective value in local currency).

The number of different traumatic event types was established using a traumatic event checklist comprising 34 items developed for previous studies in Uganda (Neuner et al., 2004, 2008). The list included event types such as abduction, combat, assaultive violence, torture, sexual violence, accidents, natural disasters, forced circumcision, and forced marriage. Each event was scored as ever experienced and experienced in the past year. The total number of traumatic events experienced was calculated by summing the different event types. The reliability (α coefficient) of the traumatic event checklist for the current study was .86 for the total number of traumatic events. We excluded the experience of abduction from the traumatic event sum because it comprises a series of traumatic events that were covered in the traumatic event list. Although this instrument does not allow for determining whether the respective event was directly war related for every item (e.g., sexual assaults), it relies on typical war trauma for the vast majority of items and it is reasonable to use this instrument as a proxy for war-related trauma exposure.

Child maltreatment experienced by children and parents was defined as being exposed to physical, emotional, or sexual abuse or neglect as a child in the context of the family as well as witnessing violence between family members. Child maltreatment was assessed using a checklist of possible violence experienced from and within a family that had been developed in the context of cross-cultural research on family violence (Catani et al., 2008). This 30-item checklist was utilized to assess the amount of adverse childhood experiences in a family context at home. The checklist included a variety of experiences ranging from slightly aversive events occurring at home (e.g., being threatened verbally) to experiences of traumatic life events (e.g., threatened with a weapon). Items for the different maltreatment categories were taken from two standard checklists for traumatic experiences in childhood, the Early Trauma Questionnaire (Bremner, Vermetten, & Mazure, 2000) and the Childhood Trauma Questionnaire (Bernstein et al., 1994). The resulting questionnaire had previously proved its utility in assessing experiences of family violence with children and adolescents in different cultural contexts. For the purpose of this study we used the score for ever experienced (lifetime) events. For parents, the instrument was employed retrospectively with the instruction to report events that occurred before the age of 18 years. In the current study, $\alpha = .87$ for the total of different types of family violence ever experienced.

The Posttraumatic Diagnostic Scale (PDS; Foa, 1995) is a well-established 17-item posttraumatic symptoms screening instrument, developed based on the *Diagnostic and Statistical Manual of Mental Disorders* (4th ed., text rev., *DSM-IV-TR*; American Psychiatric Association, 2000) symptom criteria for PTSD. In a previous validation study, the Luo version of the PDS proved its validity against the Clinician Administered PTSD Scale (Blake et al., 1995) carried out by mental health experts (Ertl et al., 2010). For this study, the computed $\alpha = .98$.

We established PTSD diagnosis on the basis of the *DSM-IV-TR* criteria for PTSD in combination with the symptoms severity rated by the participants, ranging from 0 = *not at all or only once* to 3 = *five or more times a week or almost daily*, which results in a possible range of 0–51 and a cutoff score of 16. The symptom severity was calculated as total symptom score for symptom clusters B, C, and D.

Symptoms of anxiety and depression were assessed using the Hopkins Symptom Checklist-25, which has been widely used in a wide range of cultures (Mollica, Wyshak, de Marneffe, Khuon, & Lavelle, 1987).

The depression section of this instrument had already been translated into the local language, used, and validated in an epidemiological study in the current study area (Ertl et al., 2010). The anxiety section was translated by experienced bilingual counselors and blind back-translated by language experts. The two subdivisions of the instrument have the first 10 items screening for anxiety, $\alpha = .80$, and the next 15 items for depression $\alpha = .86$ for this study. The Hopkins Symptom Checklist-25 is scored on four categories of response ranging from 1 = *Not at all* to 4 = *Extremely or very much,* indicating and describing the intensity of each symptom. Summing scores under each subsection and dividing, respectively, by 10 and 15 gives the mean intensity of the distress. Although we are aware that the validity of the cutoff scores commonly used to specify the clinical significance of symptoms may be questionable (Ertl et al., 2010), we applied the most commonly recommended cutoff score of 1.75 (Mollica et al., 1993; Silove, Sinnerbrink, Field, Manicavasagar, & Steel, 1997) to obtain a rough estimate of depression and anxiety diagnoses in this study.

The Mini International Neuropsychiatric Interview (MINI; Sheehan et al., 1998) is one of the most widely used psychiatric structured diagnostic interview instruments. The 5.0.0, C, suicidality section has been used across a wide range of cultures including its (formerly translated Luo version) use in the current study area in an earlier epidemiological study (Ertl et al., 2010). This scale, $\alpha = .71$ for this study, assesses the presence and severity of current suicide ideation in a 6-item instrument and is scored on a binary scale; 0 for no existence, and 1 for existence of ideation for each of the six items. Each of the six items has a particular weight assigned to it depending on the level of risk anticipated by the ideation depicted in the item. The sum obtained is compared against the categorization of the instrument; 1–5 points is interpreted as low suicide risk, 6–9 points as moderate suicide risk, and 10 or higher as high suicide risk.

Data Analysis

Data were analyzed with SPSS 17.0 for Windows. We report uncorrected means and standard deviations for continuous variables and uncorrected proportions in percentage and numbers for categorical variables. The differences between the four groups of adolescents and parents (categorized as abducted and nonabducted) were examined with one-way analysis of variance (ANOVA) for continuous variables. Subsequent post hoc contrasts were performed comparing abducted adolescents with nonabducted adolescents, abducted adolescents with abducted parents, abducted adolescents with nonabducted parents, nonabducted adolescents with nonabducted parents, and abducted parents and nonabducted parents. Pearson's correlation coefficient and linear regression modeling served to examine possible risk factors for PTSD, depression, anxiety, and suicidality among parents and their adolescent children.

Results

All participants reported experiencing at least one traumatic event in their lives, with the maximum reported to be 27 traumatic events out of 34 possible events. About 9 out of 10 (92.0%) of the abducted adolescents, 81.8% abducted parents reported war trauma as their worst event, much more than 52.0% and 71.6% of the nonabducted adolescents and nonabducted parents, respectively, χ^2 (47.8, $N = 300$) = 15, $p < .001$. The abducted adolescents had mean of 18.70 ($SD = 3.84$, minimum = 7, maximum = 25) event types which was significantly greater ($t(122) = 5.41$, $p < .001$) than the number for the abducted parents whose mean was 17.03 ($SD = 4.32$, minimum = 9, maximum = 27). The nonabducted group had a reverse trend, with the nonabducted parents ($M = 11.39$, $SD = 4.39$, minimum = 2, maximum = 21), experiencing significantly more traumatic events than the nonabducted adolescents ($M = 7.10$, $SD = 4.20$, range = 1–21), $t(122) = 5.41$, $p < .001$.

Psychopathology severity among the participants produced the same pattern as the amount of trauma experienced. Post hoc test results for the different subgroups are summarized in Table 2.

The prevalence of psychopathology was determined for adolescents and their parents. The result indicated that 14.0% of the abducted adolescents, 2.0% nonabducted as opposed to 13.0% abducted parents and 3.0% nonabducted parents were diagnosed with PTSD. Further, 56.0% of abducted adolescents, 8.0% nonabducted adolescents unlike their 53.0% abducted and 33.0% nonabducted parents were diagnosed with anxiety disorder. Depression among the parents both abducted 44.0% and nonabducted (48.7%), and adolescents did not follow the pattern of the prevalence of anxiety. The prevalence of depression among the adolescents was generally lower (abducted adolescents 46.0% and nonabducted adolescents 12.0%). Generally the adolescents showed more suicide tendencies than their parents with up to 10 in every 100 adolescents harboring suicidality as compared to about half that number in their parents.

To examine possible risk factors for psychopathology across the generations of parents and their adolescent children, we carried out linear regression models repeatedly using five independent variables (age, number of displacements, years of education, amount of child maltreatment, and war trauma) for PTSD, depression, anxiety, and suicidality among parents and their adolescent children, incorporating the same demographic

Table 2
Severity of Psychological Symptoms by Generation and History of Abduction

	Adolescents ($N = 100$)				Parents ($N = 200$)			
	Abducted ($n = 50$)		Nonabducted ($n = 50$)		Abducted ($n = 126$)		Nonabducted ($n = 74$)	
Variable	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*
PTSD symptom severity	8.72_a	6.97	2.86_b	4.24	5.85_c	6.77	3.86_d	6.51
HSCL anxiety symptoms	18.10_a	6.28	13.42_b	3.92	16.61_a	4.94	16.70_a	5.08
HSCL depression symptoms	26.30_a	8.23	20.80_b	6.18	26.60_a	8.01	27.20_a	9.26
MINI suicidality severity	3.34_a	6.91	1.66_a	5.43	1.57_a	5.00	1.76_a	4.21

Note. Within each row, means with different subscripts differ at < .05 level of significance according to a Scheffé test. PTSD = posttraumatic stress disorder; HSCL = Hopkins Systems Check List; MINI = Mini International Neuropsychiatric Interview.

and environmental variables. The results indicated that the number of times displaced and child maltreatment, respectively, were significantly correlated with PTSD for the parents ($\beta = .158$, $p = .025$) and ($\beta = .253$, $p = .002$), accounting for 14.1% of the variance, $R^2 = .141$, $F(5, 194) = 6.37$, $p < .001$. For adolescents PTSD was significantly correlated with the amount of traumatic experiences, being younger, and years of education ($\beta = .528$, $p < .001$), ($\beta = -.254$, $p = .007$), and ($\beta = .274$, $p = .001$), respectively, with the five variables accounting for 44.6% of the variance, $R^2 = .446$, $F(5, 94) = 15.16$, $p < .001$.

On the other hand, whereas only child maltreatment was significantly correlated with parental anxiety ($\beta = .294$, $p < .001$), with the five variables accounting for just about 1% of the variance, $R^2 = .092$, $F(5, 194) = 3.93$, $p = .002$ adolescents anxiety was correlated with war trauma, child maltreatment, and being younger ($\beta = .487$, $p < .001$; $\beta = .249$, $p = .015$; and $\beta = -.211$, $p = .031$ in that order); the model accounted for 40.3% of the variance, $R^2 = .403$, $F(5, 94) = 12.68$, $p < .001$.

Depression among the parents was significantly correlated with age, fewer years of education, and child maltreatment ($\beta = .187$, $p < .001$; $\beta = -.223$, $p = .002$; and $\beta = .280$, $p = .001$ in that order) and accounted for only 14.1% of the variance, $R^2 = .141$, $F(5, 194) = 6.34$, $p < .001$, whereas for the adolescents child maltreatment and war trauma experiences were significantly correlated with depression ($\beta = .437$, $p < .001$) and ($\beta = .297$, $p = .005$) accounting for 42.1% of the variance, $R^2 = .421$, $F(5, 94) = 13.69$, $p < .001$.

Further, the results revealed no significant correlation for the parents, whereas child maltreatment was significantly associated with suicidality for the adolescents ($\beta = .334$, $p = .006$) accounting for only 17.2% of the variance, $R^2 = .172$, $F(5, 94) = 3.896$, $p = .003$.

Discussion

We found that both adolescents and their parents had severely been affected by war and family violence. Although the adolescents were matched by abduction status, a significant proportion of their parents (63%) also reported a history of abduction. Although both generations reported high levels of trauma, lived under similar circumstances, and presented considerable psychopathology, the pattern of correlates of psychopathology was strikingly different for the generations. The parents' PTSD severity was associated with maltreatment they experienced during their childhood contrary to adolescents' PTSD severity, which was associated with war trauma and conforming expectedly to the dose-effect hypothesis (Blair, 2000; Klaric et al., 2007; Laufer et al., 1984; Neuner et al., 2004; Thabet et al., 2008). The same factors for PTSD were correlated with anxiety for both generations, and depression in both generations was associated with child maltreatment. Besides child maltreatment, both war trauma experienced and age, respectively, were associated with depression in adolescents and their parents. Although child maltreatment was associated with suicidality among adolescents, no variable was associated with suicide ideation for parents.

The unexpected finding of child maltreatment against parents experienced long ago compared to adolescents associated with PTSD confirms the link between childhood traumatic experiences and future psychopathological vulnerability (Andersen & Teicher, 2008; Dixon, Browne, & Hamilton-Giachristsis, 2005; McAdams-Chrisp, 2006; Norris, Byrne, Diaz, Friedman, Watson, & Kaniasty, 2002; Terr, 1991). In other words, maltreatment experienced, especially at home or in the hands of parents or caretakers, as a child does not just disappear. It appears to leave the victim nearly permanently psychologically vulnerable. Maltreatment experienced during childhood, resulting in vulnerability of parents in the face of new (war) trauma, especially among traditional African communities such as the IDP families in this study, could be exacerbated by lack of the cultural and social support (Iversen et al., 2008; Murthy, & Lakshminarayana, 2006) people normally receive, which in this case was destroyed by the war (El-Bushra & Sahl, 2005; Pedersen, 2002). In contrast, the adolescents who are less sophisticated in knowledge and value of the wider society as a source of social support might mainly rely on the family in times of adversity (Norris et al., 2002). Thus, the association of child maltreatment with suicidality among adolescents is reasonable as their life becomes unbearable when the very family abuses instead of protecting them.

Unfortunately, our study does not allow determination of when the traumatic events occurred, which would be necessary to determine the relative impact of events during different developmental periods. The survey, however, has several advantages, as it employed instruments that had been carefully developed, adapted, and validated in the context of the study. Although we aimed at an unbiased sampling of participants, we are aware that the sample is far from representative of the respective age groups in northern Uganda. The study was limited by the small number of households of the former IDPs, restricted to a radius of 12 kilometers to Gulu due to the security situation at that time, and the stringent inclusion criteria for the adolescents (those with living parents) and for adults with children in the eligible age group. The purpose of this study, however, was not to get an unbiased estimation of mental health of the population, but to compare the dynamics of trauma and mental health for two age groups. The selection of individuals living in the same household has the advantage that systematic differences between the two groups due to families' living conditions are avoided.

Our study also showed that across different generations, the northern Ugandans have been severely affected by the war, but the war seems to be more destructive for the adolescents than for the parents. Although this finding is perhaps closely associated with the context of the northern Uganda war, which primarily targeted adolescents, we have reason to assume that the impact of family violence in war areas might be underestimated. More studies are needed in addition to the ongoing traditional restorative justice system (Enomoto, 2011) to disentangle the complex interplay between developmental conditions, war, family violence, and mental health. Further, an additional qualitative approach may be needed to inform the development of appropriate family coping strategies in the aftermath of mass trauma. The simple view of the mental health of war-affected people by only war trauma is most probably oversimplified.

In conclusion, although both generations experienced severe war trauma and maltreatment as children, the impact of child maltreatment on psychopathology is a public health concern. The fact that parents' psychopathology was associated with the maltreatment they experienced while children, instead of the recently experienced war trauma, has demonstrated the long-lasting damage violence against children has on their future resilience in the face of adverse life experiences. These results have also shown a generational difference in appraising different types of trauma. Therefore, attempts to improve mental health in the aftermath of mass trauma should also consider prevention of family violence and child maltreatment.

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