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ORIGINAL CONTRIBUTION

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Exposure to war trauma and PTSD among parents and children in the Gaza strip

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Abstract *Objective* Exposure to war trauma has been independently associated with posttraumatic stress (PTSD) and other emotional disorders in children and adults. The aim of this study was to establish the relationship between ongoing war traumatic experiences, PTSD and anxiety symptoms in children, accounting for their parents' equivalent mental health responses. *Methods* The study was conducted in the Gaza Strip, in areas under ongoing shelling and other acts of military violence. The sample included 100 families, with 200 parents and 197 children aged 9–18 years. Parents and children completed measures of experience of traumatic events (Gaza Traumatic Checklist), PTSD (Children's Revised Impact of Events Scale, PTSD Checklist for parents), and anxiety (Revised Children's Manifest Anxiety Scale, and Taylor Manifest Anxiety Scale for parents). *Results* Both children and parents reported a high number of experienced traumatic events, and high rates of PTSD and anxiety scores above previously established cut-offs. Among children, trauma exposure was significantly associated with total and subscales PTSD scores, and with anxiety scores. In contrast, trauma exposure was significantly associated with PTSD intrusion symptoms in parents. Both war trauma and parents' emotional responses were significantly associated with children's PTSD and anxiety symptoms. *Conclusions* Exposure to war trauma impacts on both parents' and children's mental health, whose emotional responses are inter-related. Both universal and targeted interventions should preferably involve families. These could be provided by non-governmental organizations in the first instance.

Key words war–Trauma – parents – child – PTSD

Introduction

Children directly or indirectly exposed to war conflict experience a variety of stressors, and many develop both short-term and long-term post-traumatic stress reactions [5]. Common symptoms and reactions in the aftermath of a potentially traumatic event include sadness, anger, fears, numbness, feeling jumpy or jittery, moodiness or irritability, change in appetite, difficulty in sleeping, nightmares, avoidance of situations that are reminders of the trauma, impairment of concentration, and guilt because of survival or lack of harm during the event [4, 47].

A number of studies have found a high prevalence of post-traumatic stress disorders (PTSD) among children exposed to war trauma, state-sponsored

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terrorism, or interpersonal violence. For example, a study in countries exposed to widespread political trauma estimated that the prevalence of lifetime PTSD is 37% in Algeria, 28% in Cambodia, 16% in Ethiopia, and 18% in Gaza [11]. The latter area in the Middle East has been subject to several studies on children's recollection of trauma experiences and their impact on their mental health. For example, the most common traumatic events reported by Palestinian children were, seeing victims' pictures on television, and witnessing bombardment and shelling, with between one-third and half of the children in different samples fulfilling criteria for PTSD [34, 44]. They were also likely to present with high rates of anxiety or depressive disorders [43, 44].

Similar evidence on the impact of war trauma has been established for adults by a number of studies [11]. For example, in a study of Rwandans, 24.8% of adults met symptom criteria for PTSD [31]. In a cross-sectional survey of war survivors who had experienced war-related stressors (combat, torture, internal displacement, refugee experience, siege, and/or aerial bombardment) in former Yugoslavia, participants reported experiencing a mean of 12.6 war-related events, with 22% and 33% having current and lifetime posttraumatic stress disorder (PTSD), respectively, and 10% current major depression [6].

Some studies aimed to identify mediating factors in the association between war trauma and other disorders among children. PTSD rates were particularly prominent if children had been displaced from their community, for example during the conflicts in Croatia and Bosnia [2, 23]. Both the type and the amount of the exposure are important [23, 28]. Other risk factors associated with PTSD symptomatology included proximity to the zone of impact [27, 33], degree of life threat [28, 32), and underlying socio-economic hardship [22].

The effect of parental and family variables has also been investigated. Children exposed to war conflict have been found to be protected by family cohesion [24, 25], positive home environment, and mothers' perceptions of a functional family [53]. Previous studies have established an association between parents' and children's general psychopathology following war and political conflict [15, 35, 39]. This relationship can vary at different stages in the child's development [52]. Recent studies have specifically examined the mechanisms underlying links in PTSD symptoms within families. Qouta et al. [34], for example, suggested that the impact of maternal responses on children is different for the PTSD subscales of intrusion and avoidance. Better understanding of how children and parents respond to similar conflict is important for the development of interventions, therefore this was the rationale for this study.

The aims were to investigate: (a) the independent association between exposure to war trauma with parents' and children's mental health symptoms; (b) whether the association between trauma exposure and child mental health problems remains after accounting for parental mental health responses; and (c) whether this association applies equally to PTSD, anxiety and other mental health problems.

Methods

In order to address the previous aims, the following research hypotheses were tested:

(a) Exposure to war trauma would be independently associated with PTSD among parents and children.
(b) This association for children would remain after accounting for their parents' emotional responses.
(c) The association between trauma exposure would only apply to PTSD, but not to other anxiety or mental health problems.

Setting and sample

The Gaza Strip is a narrow elongated piece of land, bordering the Mediterranean Sea between Israel and Egypt, and covers 360 km^2. It has high population density. About 17% of the population lives in the north of the Gaza Strip, 51% in the middle, and 32% in the south area. There is high unemployment, socio-economic deprivation, family overcrowding, and short life expectancy. Nearly two-thirds of the population are refugees, with approximately 55% living in eight crowded refugee camps. The remainder lives in villages and towns. Since September 2005, the population of the Gaza Strip has been exposed to regular incursions and shelling, resulting in at least 200 deaths and many more injuries, in the last 6 months alone.

The reports of the World Bank and the Palestinian Central Bureau of Statistics showed that the unemployment rate reached 25.3% in the Palestinian territory during the first quarter of 2006, distributed by 21.4% in the West Bank and 34.1% in the Gaza Strip. The estimated poverty rate among Palestinian households in the Palestinian territory during the second quarter of 2006 had increased dramatically to 65.8%, and distributed by 65% in the West Bank and 87.7% in the Gaza Strip. Just over half (55.6%) of the households were suffering deep poverty [29].

The study population included 100 families living in areas exposed to shelling, in the north and east of the Gaza Strip. Families with two children aged from 9

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to 18 years were included. A total number of 200 parents (100 mothers and 100 fathers) and 197 children agreed to take part in the study. Families were selected randomly from two villages, one camp, and one city. The selection was based on the proximity of the area to regular shelling, which was defined as 'households within visible distance of shelling (dust and pieces of shells)'. One street was selected in each area, and every other household that fulfilled the family selection criteria. In larger buildings, one flat from each floor was selected (area of Beit Lahia). Families were included if they consisted of both parents, with one boy and one girl, aged between 9 and 18 years, and had been in the area for the last year. If a family had both a boy and girl who fulfilled the selection criteria, each gender was selected alternatively. The same applied to age order within the siblings group. Families were approached until 100 agreed to participate, which was a convenience sample, partly based on previous studies in this field.

The data collection was carried out by three trained professionals of clinical psychology background, under the supervision of the first author. The data was collected during June 2006. Families were interviewed in their homes. One of the difficulties of this study was that, throughout the interviews, there was frequent shelling of the selected areas, for which reason the interviews had to be discontinued and repeated later by the same interviewers, although the two sets of interviews for the same family (incomplete and complete) were not compared, with the latter dataset being used in the analysis.

Measures

These were selected on the basis of previous use in similar studies across different cultural groups, and their standardization. As the instruments had been previously used in this population by the research team, no changes in wording were made during translation but, if difficulties were encountered in the understanding of certain statements, these were explained or discussed by the researchers.

Children

- The *Gaza Traumatic Events Checklist* was used, describing the most common traumatic experiences families could have faced in the Gaza Strip during the previous 6 months, including shelling of their area of residence. The checklist was revised from a version used in earlier research [43, 44], adapted for the nature of traumatic events occurring during the current conflict.
- The *Children's Revised Impact of Events Scale* (*CRIES-13*) [19, 38] measured symptoms of post-traumatic stress disorder (PTSD) over the previous 6 months. This included all eight items of the original Impact of Events Scale, as well as five items derived from the arousal criteria in the DSM-IV classification [3]. Individual items were rated according to the frequency of their occurrence during the past week (none = 0, rarely = 1, sometimes = 3, a lot = 5) and in relation to a specific traumatic events written at the top of the scale. In this study the revised IES was translated from English to Arabic and back translated. A cut-off score of 30 and above has been found to indicate the likelihood of presence of PTSD [30]. A total score was provided, as well as subscales scores for intrusion, arousal and avoidance PTSD symptoms.
- The *Revised Children's Manifest Anxiety Scale (RCMAS)* [36] is a standardised 37-item self-report questionnaire for children of 6–19 years. It measures the presence or absence of anxiety-related symptoms ('yes'/'no' answers) in 28 anxiety items and 9 lie items. A cut-off total score of 19 has been found to predict the presence of anxiety disorder [37].
- The *Strengths and Difficulties Questionnaire* (*SDQ*) [17] was completed by parents on their children's behavioural and emotional functioning. This standardized questionnaire includes 25 items on a 0–2 scale. The 25 SDQ items are grouped in the scales of hyperactivity, emotional, conduct, and peer relationships problems, as well as a prosocial scale. A score is estimated for each scale and a total difficulties score for the four problem scales. The total difficulties score, which did not include the prosocial items, was used in this study as a measure of generic psychopathology. The SDQ has previously been used in the Gaza child population by the research group [45].

Parents

The following measures were completed independently by the child's parents:

- The *Gaza Traumatic Checklist* was also completed by parents. This includes the same items as for children.
- The *Posttraumatic Stress Disorder Checklist for parents* (PCL) contains 17 items adapted from the DSM-IV [3] PTSD symptom criteria. Respondents are asked to rate on a 5-point Likert scale (1 = *not at all* to 5 = *extremely*) the extent to which symptoms troubled them in the previous month. A total score was provided, as well as subscales scores for intrusion, arousal and avoidance PTSD symptoms. The PCL has been standardized [8]. The diagnosis requires the presence of one re-experiencing, three

avoidance and two hyperarousal symptoms, with each symptom being defined as positive if scored as 3 or above.

- The *Taylor's Manifest Anxiety Scale* (*MAS*) [41] measures symptoms of chronic anxiety. We used the Arabic version [40] with 50 items rated as 'yes'/'no'. Scores can be classified as 0–26 (no anxiety), 27–32 (mild anxiety), 33–40 (severe anxiety), and 41 and above (very severe anxiety). The latter two categories were grouped together, as indicating anxiety symptoms of clinical significance.

Statistical analysis

Frequencies and descriptive statistics are initially presented, including likely rates of psychiatric disorders, according to previously established cut-off scores. Between-group differences on questionnaire scores (trauma exposure and psychopathology) were estimated by non-parametric tests (Mann–Whitney for two groups and Kruskal–Wallis for multiple groups), as the questionnaire data was not normally distributed. The relationship between children's and parents' PTSD scores (also between respective anxiety scores) was estimated by Spearman rank correlation test. The association between exposure to trauma (total score as independent variable) and psychopathology in either the child or the parent was initially investigated by a series of univariate linear regression analyses, with the psychopathology score (total PTSD or PTSD subscale or total anxiety score) as the dependent variable. In a series of multivariate linear regression models all traumatic events were entered as covariates, with each measure of psychopathology (child or parent) as the dependent variable, to test out the predictive value of particular types of trauma. Finally, in two multiple liner regression models, trauma exposure and parental emotional scores (PTSD or anxiety) were entered as covariates, with children's emotional scores (PTSD or anxiety respectively) as the independent variable.

Results

Sociodemographic data

The boys' mean age was 12.8 years (SD = 2.5), and the girls' mean age was 13.2 (SD = 2.51). Palestinian families consisted of large number of children, as 39 (19.5%) had 4 or less children, 92 families (46.0%) had 5–7 children, and 69 families (34.5%) had 8 or more children. About 48 children (24%) lived in the city, 102 (51%) lived in villages, and 50 children (25%) lived in refugee camps. The fathers' mean age was 43.6 years (SD = 7.14), and mothers' mean age was 39.48 years (SD = 6.83). The majority of families (130, or 65.0%) had a very low monthly income of less than \$265, 27 families (13.5%) had an income of \$271–560, and 43 families (21.5%) had a monthly income of more than \$560.

Traumatic events experienced by children

The most frequently reported traumatic events were, watching mutilated bodies and wounded people on TV (98.5%), witnessing signs of shelling on the ground (94.9%), and hearing shelling of the area by artillery (92.9%) (Table 1). Children experienced a mean number of eight traumatic events (SD = 2.55). Boys were more significantly exposed to trauma than girls (Mann–Whitney test: $z = 1.95$, $P = 0.050$). Children in high income families experienced significantly less traumatic events than the other two income groups (Kruskal–Wallis test, chi-square 9.18, df = 2, $P = 0.010$). There was no association between children's age and exposure to trauma (Spearman rank correlation $r = -0.071$, $P = 0.32$).

Table 1 Type of traumatic experiences by parents and children

Traumatic events	Parents ($N = 200$)		Children ($N = 197$)	
	No	%	No	%
Watching mutilated bodies and wounded people on TV	197	98.5	193	98.5
Witnessing the signs of shelling on the ground	190	95	186	94.9
Hearing the sonic sounds of the jetfighters	188	94	176	89.8
Witnessing bombardment of other homes by airplanes and helicopters	186	93	170	86.7
Hearing shelling of the area by artillery	186	93	182	92.9
Witnessing firing by tanks and heavy artillery of neighbours' home	174	87	146	74.5
Hearing about killing of a friend	167	83.5	139	71.3
Witnessing assassination of people by rockets	158	79	147	75.0
Hearing about killing of a close relative	141	70.5	119	61.0
Witnessing firing by tanks and heavy artillery on your home	127	63.5	146	74.5

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Table 2 Mean scores and frequencies of children above the established cut-off scores of PTSD, anxiety, and other mental health problems ($N = 197$)

Mental health problem and Measure	No	Mean	SD	%
PTSD according to IES-13	138	36.93	11.79	70.1
SDQ Total difficulties	77	14.90	7.08	42.7
SDQ Conduct problems	71	3.05	2.38	36.8
SDQ Hyperactivity problems	43	4.66	2.36	22.8
SDQ Emotional problems	46	2.85	2.28	24.4
SDQ peer relationship problems	114	4.27	2.14	60.1
Anxiety according to RCMAS	35	15.82	5.2	33.9

Children's psychopathology and association with trauma exposure

The mean scores on the mental health measures are presented in Table 2. Children reported different reactions to traumatic events on the CRIES-13, the most common reactions being: insomnia (40.5%), exaggerated startle (39%), and trying to remove memories from their mind (39%). Considering the CRIES-13 cut-off score of 30 [29], 138 children out of 197 (70.1%) were likely to present with PTSD, or 69% of the boys and 71.1% of the girls.

According to a cut-off score of 19 or more on Revised Children's Manifest Anxiety Scale, 35 children (33.9%) were rated as having anxiety symptoms of likely clinical significance. According to a SDQ cut-off score of 17 or above, 77 children (42.7%) were rated as having significant mental health morbidity by their parents. Children living in inner-city areas were rated significantly higher on total SDQ scores (broad mental health problems)—K–Wallis test: chi-square = 6.25, df = 2, $P = 0.044$). Children's age was significantly associated with total PTSD ($r = 0.24$, $P = 0.001$) and anxiety symptoms ($r = 0.22$, $P = 0.003$).

In a univariate linear regression analysis, exposure to traumatic events was significantly associated with PTSD symptoms (CRIES-13 scores): $B = 1.31$, 95% CI = 0.48–2.13, $P = 0.002$. When this analysis was repeated separately for each PTSD subscale, the association remained significant for intrusion symptoms ($B = 1.11$, $P < 0.001$), avoidance ($B = 0.36$, $P = 0.047$), and arousal symptoms ($B = 0.86$, $P < 0.001$). When each traumatic event was entered as an independent variable in a multiple regression model (without other independent variables in the model), with total CRIES-13 scores as the dependent variable, no single traumatic event was significantly associated with PTSD symptoms.

The number of experienced potentially traumatizing events was also associated with total anxiety (RCMAS) scores: $B = 0.53$, 95% CI = 0.17–0.89, $P = 0.004$. In contrast, trauma exposure was not associated with general mental health problems (SDQ total scores): $B = 0.070$, 95% CI = −0.57 to 0.43.

Traumatic events experienced by parents

Parents reported similar frequencies of traumatic events to their children (Table 1). The most common traumatic events were, watching mutilated bodies and wounded people on TV (98.5%), witnessing the signs of shelling on the ground (95%), hearing sonic sounds of jetfighters (94%), and witnessing bombardment of other homes by airplanes and helicopters (93%). Parents reported a mean number of 8.5 traumatic events (SD = 1.68). As among children, parents in the high income group experienced less traumatic events than the other two income groups (K–Wallis test: chi-square = 11.69, df = 2, $P = 0.03$). Parents' and children's ratings of exposure to trauma were significantly correlated (Spearman coefficient $r = 0.25$, $P < 0.001$).

Parents' psychopathology and association with trauma exposure

Parents reported different reactions to traumatic events, the most common reactions being: flashbacks (68.5%), intrusive memories (59%), and amnesia (51%). Considering a cut-off score of 50 or more on the PTSD scale, 120 parents (60%) had symptoms of potential clinical significance. Considering a cut-off score of 33 or more on the Taylor Anxiety Scale, 52 parents (26.0%) reported severe to very severe anxiety symptoms. There was no significant difference on PTSD or anxiety scores between the parents. Mothers reported higher anxiety scores (M–Whitney test: $z = 1.84$, $P = 0.065$) and PTSD intrusion scores than fathers ($z = 1.80$, $P = 0.071$), although neither trend reached statistical significance. Parents' age was significantly associated with PTSD symptoms ($r = 0.17$, $P = 0.013$), but not with trauma exposure or anxiety symptoms.

Parents' and children's ratings of PTSD symptoms were significantly correlated for the intrusion (Spearman $r = 0.34$, $P<0.001$) and arousal subscales ($r = 0.29$, $P < 0.001$), but not for the avoidance subscale ($r = 0.009$, $P = 0.90$), which explains the overall lack of association on total PTSD scores ($r = 0.10$, $P = 0.15$). Parents' and children's anxiety scores were also significantly correlated ($r = 0.30$, $P < 0.001$).

In a univariate linear regression analysis, and unlike their children, trauma exposure was not associated with total PTSD scores in parents: $B = 0.72$, 95% CI = −0.20 to 1.63, $P = 0.12$). This was not the pattern for all PTSD subscales, when the analysis was repeated with each subscale score as the dependent variable. Trauma exposure was associated with intrusion symptoms ($B = 0.32$, $P = 0.044$), but not with avoidance ($B = 0.05$, $P = 0.84$) or arousal symptoms ($B = 0.24$, $P = 0.20$). When each traumatic event was entered as an independent variable in a

Table 3 Association between exposure to trauma, parental responses, and children's PTSD and anxiety symptoms (multiple linear regression model)

Model	Independent variable	*B*	95% CI	Significance
Model of association with children's PTSD symptoms (total CRIES-13 scores as dependent variable)	Children's trauma exposure	1.36	0.55–2.18	0.001
$R^2 = 0.076$	Parents' PTSD symptoms	0.19	0.04–0.33	0.014
Model of association with children anxiety symptoms (total RCMAS scores as dependent variable)	Children's trauma exposure	0.40	0.07–0.73	0.018
$R^2 = 0.21$	Parents' anxiety symptoms	0.30	0.21–0.39	<0.001

multiple regression model, with total PTSD scores as the dependent variable, two events were significantly associated with parents' PTSD symptoms:

Witnessing bombardment by airplanes and helicopters: $B = 8.36$, 95% CI = 0.74–15.96, $P = 0.032$; and Witnessing firing of their own home by tanks and heavy artillery: $B = 4.60$, 95% CI = 0.82–8.39, $P = 0.017$.

The total number of experienced traumatic events was not associated with anxiety symptoms in parents ($B = 0.21$, 95% CI = −0.34 to 0.75, $P = 0.45$).

Relationship between trauma exposure, parental and child psychopathology

The association between trauma exposure and either PTSD or anxiety symptoms in children, was subsequently tested accounting for equivalent parents' responses, in two multiple linear regression models. Children's PTSD symptoms were predicted by both trauma exposure, as measured by the Gaza Traumatic Events Checklist ($B = 1.36$, 95% CI = 0.54–2.17, $P = 0.001$) and parents' PTSD scores ($B = 0.18$, 95% CI = 0.038–0.33, $P = 0.014$) (Table 3—two independent variables entered, both reported in the table). Similarly, children's anxiety symptoms were predicted by both trauma exposure ($B = 0.39$, 95% CI = 0.07–0.73, $P = 0.018$), and parents' anxiety scores ($B = 0.30$, 95% CI = 0.21–0.39, $P < 0.001$). The addition of parents' gender or the children's age as a covariate, because of their independent association with some of the dependent variables, did not alter the findings. The low R^2 values indicate that other factors may have been involved, but not captured by this study.

Discussion

As with other types of acute and chronic trauma, exposure to war and political conflict has been found to independently impact on adults' and children's mental health, predominantly associated with internalizing disorders such as PTSD, anxiety and depression. Studies in recent years also indicated the association between parental and child responses [35, 39], although little is known on the underlying mechanisms, i.e. whether these are the same as for other types of trauma [14], or whether different mechanisms operate for different types of psychopathology. This study explored further this relationship in relation to PTSD and anxiety symptoms among Palestinian exposed to shelling and other forms of military violence. One difference from previous studies was that exposure to trauma was ongoing *during* the data collection, rather data on mental health symptoms being collected *after* the cessation of conflict. This might be relevant to some of the findings, particularly those concerning parents' responses.

The impact of parental emotional responses on children's mental health is neither unique not specific to this kind of trauma. This association has previously been established among parents and children exposed to other types of acute or chronic adverse life events, although different mechanisms have been shown to underpin this relationship. For example, parents suffering from psychiatric disorders have been found to affect their children's emotional and behavioural functioning predominantly through impaired parenting capacity [7, 18]. Exposure to domestic violence, family breakdown and homelessness have both direct impact on children, as well as indirectly through their mothers' maladaptive coping and parenting strategies [21, 48].

Exposure to war trauma was significantly associated with all measures of PTSD, including its three subscales, and with anxiety. The impact appeared related to the total number and severity of events, without any single event predicting PTSD symptoms. The lack of association between trauma and general mental health problems, predominantly of behavioural and social nature, as measured by the SDQ, was not surprising, as such generic measures usually reflect longstanding problems (in behavioural, emotional and social functioning) which are related to parenting, school or developmental difficulties, rather than acute trauma-induced distress [45, 50]. Such mental health problems may have been related to longstanding adversities and life events, which were not measured in this study, but these, were not found to be specifically associated with exposure to trauma. The latter may have a cumulative effect on previous

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risk factors [49]. This mechanism has been found to operate in children with oppositional defiant disorders, but not neurodevelopmental conditions such as ADHD [16]. In contrast, trauma exposure appeared to be specifically associated with anxiety and PTSD presentations. Future longitudinal research would improve the understanding of such mechanisms between different types of traumatic or other life events, and different kinds of psychopathology.

Parents and children had experienced high rates of similar events. As previous trauma research has shown, children can be affected directly by exposure to trauma and by adults' reactions, i.e. through primary and secondary traumatization [12]. Some mechanisms of direct impact have been found to apply independently to both parents and children such as loss of control, loss of self-image (particularly if family members have been injured), fears of death and harm, and isolation from their social networks [9]. Children can also experience increased dependency and fear of abandonment [9]. Parental reactions can be influenced by past traumas [10], and they can in turn adversely affect children through changes in their parenting capacity and family functioning [4]. For example, Henry et al. [18] established tighter parental monitoring and reported beliefs on the importance and purpose of the family following the 11th September terrorist attacks in the US. The population of our study was faced with additional adverse circumstances such as unemployment, overcrowding, occupation, and proximity to war activities, all of which factors are likely to impact on families' coping strategies and well-being.

Unlike earlier studies, the most common traumatic event in recent research with this population [33], has been watching mutilated bodies on television. Although this finding per se does not demonstrate a specific effect of media on families and their children, it is important to consider potential implications, as Palestinian families spend increasing time watching news and other programmes about the conflict, without alternative leisure or other activities. For example, there could be a differential impact between watching or being told about events on television, and having experienced those events. In an earlier study, for example, we found that children whose houses had been demolished by shelling in the Gaza Strip significantly reported more PTSD and phobic symptoms, while children living in non-bombarded areas were more likely to report anticipatory anxiety symptoms [43].

The pattern of parents' and children's emotional responses was somewhat different, i.e. trauma exposure was particularly associated with PTSD intrusion symptoms. Specific events, namely witnessing firing of their home by tanks and heavy artillery, and bombardment by aircrafts and helicopters, were found to have a specific impact on parents. In an earlier study, Laor et al. [25] found that families' responses to a missile attack were explained by destruction of their house and displacement, rather than by mere distance from the missile impact. The nature of the traumatic events might have been implicated in the different mechanisms of affecting parents during this conflict. Qouta et al. [35] particularly highlighted the sudden and non-predictable violence that characterizes the conflict in the Gaza Strip, i.e. shelling, bombardment and incursions; being prevented from helping wounded family members; and burying their dead with dignity and according to their religious rules.

Intrusion symptoms such as fears and nightmares might develop early as an acute response among people being in a continuous state of 'high alert', while avoidance symptoms might develop later, or in response to different types of traumatic situations. Avoidance could also operate as a coping strategy in similar circumstances. As the political conflict in the region of the study is relatively chronic, with intermittent phases of escalation rather than a complete peace process, its impact on children may thus be different from a 'new' emerging threat.

Interviewing during a period of such exposure is not necessarily different from interviewing vulnerable children who experience family or community violence and abuse, i.e. there is no evidence that these could cause harm. However, there could be implications on interviewing techniques that could elicit children's experiences. For example, Henry et al. [18] found a variation of responses, depending on the explicit (or not) reference of the interview to specific traumatic events (in that study, these were terrorist attacks).

The rates of PTSD and anxiety symptoms among parents and children were of sufficient severity to require assessment and intervention. Parents' and children's scores were significantly correlated for PTSD intrusion and arousal (but not for avoidance), as well as for anxiety symptoms. Overall, parental responses were found to contribute to children's PTSD and anxiety presentations. Previous studies established a stronger impact of maternal responses on younger (pre-school) children [16, 41]. Although we did not find age differences in this study, the sample was much older (9–18 years) than the previous cohorts.

The study has a number of limitations. A longitudinal component may have helped understand better the changes in psychopathology among children and their parents, in relation to changes in trauma exposure. As the study focused on the measurement of acute trauma-induced stress, which is relatively nar-

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row, the future inclusion of potentially confounding factors such as parenting ability, family functioning, support networks, coping strategies, and cultural perceptions of trauma or mental health [26], could also improve the understanding of such mechanisms. Other constraints were reliance on self-reports, and lack of information on families' perceptions of other important factors such as work and financial conditions, separation from relatives, activism, and harassment.

Although beyond the direct remit and aims of the study, the findings have implications for the development of interventions and services. Involving parents in the assessment and intervention is important in promoting consistent strategies, responses to external adversities, and relative stability within the immediate family group, while avoiding if at all possible separation with their children [5]. This level of family input is not realistic for specialist mental health services in circumstances of widespread conflict [20], but could form the objective of non-governmental organizations (NGOs), as part of universal or targeted initiatives during and after the crisis. Families can be involved at different levels of phased psychosocial programmes, which aim at minimal disruption of protective factors, re-establishment of remaining protective factors, and provision of compensatory supports [1]. Group psychoeducational programmes are a cost-effective mean of reaching a large number of families by a limited number of staff.

More focused interventions are also emerging and appear promising such as multi-family groups, combining education, support and therapeutic tasks [51]. Dybdahl [13] described and evaluated a psychosocial intervention for mothers following the war in Bosnia, whose aim was to promote young children's development and well-being through parental involvement, support and education. Particular importance was attributed to the mother–child interaction during the healing process. Positive outcomes were established in several aspects of functioning, namely mothers' mental health, children's weight gain and psychosocial functioning.

As such programmes usually target resettled populations, or the local community after termination of the acute conflict, when a considerable degree of safety and stability has been achieved, there is lack of evidence or consensus on whether and how to respond during external conflict, particularly when this is longstanding and there is no migration or significant population movement (such as the case of families in the Gaza Strip and the West Bank). In a previous trial during the same conflict, we found no significant difference in the impact of a relatively inactive group debriefing crisis intervention for children, compared to group education on post traumatic symptoms, or no intervention [46]. One potential explanation for this finding was the non-involvement of parents in the intervention, who may have maintained children's emotional distress. More service initiatives and studies are needed in areas of actual ongoing conflict. Previous post-conflict programmes and interventions could be adapted to the Palestinian context, or integrated with existing international initiatives such as offered by Unicef, with subsequent evaluation, which often lacks from similar non-governmental programmes.

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References

1. Ager A (1997) Tensions in the psychosocial discourse: implications for the planning of interventions with war-affected populations. Dev Pract 7:402–427
2. Ajdukovic M (1998) Displaced adolescents in Croatia: a source of stress and post traumatic stress reaction. Adolescence 33:209–217
3. American Psychiatric Association (1994) Diagnostic and statistical manual of mental disorders (4th ed). American Psychiatric Association, Washington DC
4. Banyard V, Rozelle D, Englund D (2001) Parenting the traumatized child. Psychother: Theor, Res, Pract, Train 38:74–87
5. Barenbaum J, Ruchin V, Schwab-Stone M (2004) The psychosocial aspects of children exposed to war: practice and policy initiatives. J Child Psychol Psychiatry 45:41–62
6. Basoglu M, Livanou M, Crnobaric C, Franciskovic T, Suljic E, Duric D, Vranesic M (2005) Psychiatric and cognitive effects of war in former Yugoslavia. JAMA 294:580–590
7. Berg-Nielsen TS, Vikan A, Dahl A (2002) Parenting related to child and parental psychopathology: a descriptive review of the literature. Clin Child Psychol Psychiatry 7:529–552
8. Blanchard E, Jones-Alexander J, Buckley T, Forneris C (1996) Psychometric properties of the PTSD Checklist (PCL). Behav Res Ther 34:669–673
9. Bronfman E, Biron-Campis L, Koocher G (1998) Helping children to cope: clinical issues for acutely injured and medically traumatized children. Profess Psychol: Res Pract 29:575–581
10. Browne A (1993) Family violence and homelessness: the relevance of trauma histories in the lives of homeless women. Am J Orthopsychiatry 63:370–384
11. De Jong J, Komproe I, Van Ommeren M, Masri M, Araya M, Khaled N, et al. (2001) Lifetime events and posttraumatic stress disorder in four postconflict settings. J Am Acad Child Adol Psychiatry 286:555–562

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12. Dirkzwager A, Bramsen I, Ader H, Van der Ploeg H (2005) Secondary traumatization in partners *and* parents *of* Dutch peacekeeping soldiers J Fam Psychology 19:217–226
13. Dybdahl R (2001) Children and mothers in war: an outcome study of a psychosocial intervention programme. Child Dev 72:1214–1230
14. Dyregrov A, Yule W (2006) A review of PTSD in children. Child Adoles Ment Health 11:176–184
15. Farhood L, Zurayk H, Chaya M, Saadeh F, Meshefedjian G, Sidani T (1993) The impact of war on the physical and mental health of the family: the Lebanese experience. Soc Sci Med 12:1555–1567
16. Ford J, Racusin R, Daviss W, Ellis C, Thomas J, Rogers K, Reiser J, Schiffman J, Sengupta A (1999) Trauma exposure among children with oppositional defiant disorder and attention deficit – hyperactivity disorder. J Consult Clin Psychol 67:786–789
17. Goodman R (2001) Psychometric properties of the strengths and difficulties questionnaire. J Am Acad Child Adol Psychiatry 40:1337–1345
18. Henry D, Tolan P, Gorman-Smith D (2004) Have there been lasting effects associated with the September 11, 2001, terrorist attacks among inner-city parents and children? Profess Psychol 35:542–547
19. Horowitz M, Wilner N, Alvapez W (1979) Impact of events scale: a measure of subjective stress. Psychosom Med 41:209–218
20. Jones L, Rrustemi A, Shahini M, Uka A (2003) Mental health services for war-affected children. Br J Psychiatry 183:540–546
21. Karim K, Tischler V, Gregory P, Vostanis P (2006) Homeless children and parents: short-term mental health outcome. Int J Soc Psychiatry 52:447–458
22. Khamis V (2005) Post-traumatic stress disorder among school age Palestinian children. Child Abuse Neglect 29:81–95
23. Kuterovac G, Dyregrov A, Stuvland R (1994) Children in war: a silent majority under stress. Br J Med Psychol 67:363–375
24. Laor N, Wolmer L, Cohen D (2001) Mothers' functioning and children's symptoms five years after a scud missile attack. Am J Psychiatry 158:1020–1026
25. Laor N, Wolmer L, Mayes L, Golomb A, Silverberg D, Weizman R, Cohen D (1996) Israeli preschoolers under scud missile attack: a developmental perspective of risk-modifying factors. Arch Gen Psychiatry 53:416–423
26. Leinonen J, Solantaus T, Punamaki RL (2003) Parental mental health and children's adjustment: the quality of marital interaction and parenting as mediating factors. J Child Psychol Psychiatry 44:227–241
27. Lonigan C, Shannon M, Taylor C, Finch J, Sallee F (1994) Children exposed to disaster: II. Risk factors for the development of post traumatic symptomatology. J Am Acad Child Adol Psychiatry 33:94–105
28. Nader K, Pynoos R, Fairbanks L, Al-Ajeel M, Al-Asfoor A (1993) A preliminary study of PTSD and grief among the children of Kuwait following the Gulf crisis. Br J Clin Psychol 32:407–416
29. Palestinian Central Bureau of Statistics: http://www.pcbs.gov/ps/ Checked June 2007
30. Perrin S, Meiser-Stedman R, Smith P (2005) The children's revised impact of events scale (CRIES): validity as a screening instrument for PTSD. Beh Cogn Psychotherapy 33:487–498
31. Pham P, Weinstein H, Longman T (2004) Trauma and PTSD symptoms in Rwanda: implications for attitudes toward justice and reconciliation. JAMA 292:602–612
32. Pynoos R, Frederick C, Nader K (1987) Life threat and posttraumatic stress in school-age children. Arch Gen Psychiatry 44:1057–1063
33. Qouta S, Punamaki R, El Sarraj E (1997) House demolition and mental health: victims and witnesses. J Soc Distress Homeless 6:203–211
34. Qouta S, Punamaki R, El Sarraj E (2003) Prevalence and determinants of PTSD among Palestinian children exposed to military violence. Eur Child Adol Psychiatry 12:265–272
35. Qouta S, Punamaki R, El Sarraj E (2005) Mother–child expression of psychological distress in war trauma. Clin Child Psychol Psychiatry 10:135–156
36. Reynolds C, Richmond B (1978) What I think and feel: a measure of children's manifest anxiety. J Abn Child Psychol 6:271–280
37. Reynolds C, Richmond B (1997) What I think and feel: a revised measure of children's manifest anxiety. J Abn Child Psychol 25:15–20
38. Smith P, Perrin S, Dyregrov A, Yule W (2003) Principal components analysis of the impact of events scale with children in war. Personality Indiv Diff 34:315–322
39. Smith P, Perrin S, Yule W, Rabe-Hesketh S (2001) War exposure and maternal reactions in the psychosocial adjustment of children from Bosnia-Herzegovina. J Child Psychol Psychiatry 42:395–404
40. Souife A (1976) Social psychology. El Anglo, Cairo (in Arabic)
41. Taylor J (1953) A personality scale of manifest anxiety. J Abn Soc Psychol 48:285–290
42. Thabet AA, Abdulla T, El Helou M, Vostanis P (2006) Effect of trauma on children's mental health in the Gaza Strip and West Bank. In: Greenbaum C, Veerman P, Bacon-Shnoor N (eds) Protection of children during armed political conflict: a multidisciplinary perspective. Intersentia, Antwerp, pp 123–1241
43. Thabet AA, Abed Y, Vostanis P (2002) Emotional problems in Palestinian children living in a war zone: a cross-sectional study. Lancet 359:1801–1804
44. Thabet AA, Abed Y, Vostanis P (2004) Comorbidity of post-traumatic stress disorder and depression among refugee children during war conflict. J Child Psychol Psychiatry 45:533–542
45. Thabet AA, Stretch D, Vostanis P (2000) Child mental health problems in Arab children: application of the strengths and difficulties questionnaire. Int J Soc Psychiatry 46:266–280
46. Thabet AA, Vostanis P, Karim K (2005) Group crisis intervention for children during ongoing war conflict. Eur Child Adol Psychiatry 14:262–269
47. Thienkrua W, Cardozo B, Chakkraband S, Guadamuz T, Pengjuntr W, Tantipiwatanaskul P, et al. (2006) Symptoms of posttraumatic stress disorder and depression among children in Tsunami-affected areas in Southern Thailand. Am Med Assoc 296:549–559
48. Tischler V, Vostanis P (2007) Homeless mothers: is there a relationship between coping strategies, mental health and goal achievement? J Comm Appl Soc Psychol 17:85–102
49. Vostanis P (2004) Impact, psychological sequelae and management of trauma affecting children. Curr Opinon Psychiatry 17:269–273
50. Vostanis P (2006) The strengths and difficulties questionnaire: research and clinical applications. Curr Opinion Psychiatry 19:367–372
51. Weine S, Raina D, Zhubi M, Delesi M, Huseni D, Feetham S, et al. (2003) The TAFES multi-family group intervention for Kosovar refugees. J Nerv Ment Dis 191:100–107
52. Wolmer L, Laor N, Gershon A, Mayes L, Cohen D (2000) The mother–child dyad facing trauma: a developmental outlook. J Nerv Ment Disease 188:409–415
53. Zahr L (1996) Effects of war on the behaviour of Lebanese preschool children: influence of home environment and family functioning. Am J Orthopsychiatry 66:401–408

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