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Traumatic events exposure and psychological trauma in children victims of war in Gaza  
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# **Traumatic events exposure and psychological trauma in children victims of war in the Gaza Strip**

## **Abstract**

The present article studies war-related trauma and its effects on children living in the Gaza Strip, 6 months after the attack launched by the Israeli army on July 8, 2014, which lasted for 51 days. The objective was twofold: (a) to identify the prevalence of exposure to traumatic events and (b) to examine the symptoms of traumatic stress in children as described by their parents or tutors using the Harvard Trauma Questionnaire (HTQ). Data from 1,850 male and female children aged between 6 and 15 years living in the Gaza Strip were collected throughout the months of February and April 2015, that is 6 months after the attack]. Results showed that the majority of the children were exposed to bombardments and residential area destruction (83.51%), were confined at home unable to go outside (72.92%), were witness to the profanation of mosques (70.38%), were exposed to combat situations (66.65%), and saw corpses (59.95%). A sample of 275 males (28.3%) and 232 females (26.5%) showed diagnoses of posttraumatic stress disorder (PTSD). Gender and age were independent of PTSD. The presence of this pathology was positively related to the number of trauma events experienced. The type of traumatic experience was hardly related to age and gender. A greater protection on behalf of the families against exposure to traumatic events could explain these differences.

**Keywords:** trauma, war, children, victim, psychological trauma, post-traumatic stress disorder.

## **Introduction**

Several studies have reported the effect of exposure to war and political violence on civilian population in different countries (Ayazi, Lien, Eide, Swartz, & Hauff, 2014; Bentley, Thoburn, Stewart, & Boynton, 2011; De Fouchier et al., 2012; Gómez-Varas, Valdés, & Manzanero, 2016; Mollica, Brooks, Tor, Lopes-Cardozo, & Silove, 2014, 1992; Stanciu & Rogers, 2011; Vinson & Chang, 2012). Most of these studies have centered their attention on evaluating the presence of posttraumatic stress disorder (PTSD), and associated disorders, such as anxiety or depression (Basoglu, Jaranson, Mollica, & Kastrup, 2001; Gootzeit & Markon, 2011; Steel et al., 2009). In Latin American populations, Allodi and Cowgill (1982), in a study with victims of torture, found emotional problems of anxiety and depression in 39% to 41% of the cases; Eisenman, Gelberg, Liu, and Shapiro (2003), with refugees from political violence, indicated the presence of PTSD in 18% of the cases; and Sabin, Cardozo, Nackerud, Kaiser, and Varese (2003), with Guatemalan refugees, found rates of 9% for PTSD, 17% for anxiety, and 48% for depression. In a different sociocultural context, like South Sudan, Ayazi et al. (2014) evaluated a sample of survivors 4 years after the end of the armed conflict, finding PTSD symptoms in 16.53% of the male participants. A meta-analysis performed by Fazel, Wheeler, and Danesh (2005) including 20 articles on the effect of stress on refugee populations showed a prevalence of 9% for PTSD and of 5% for depression, whereas Steel et al.'s (2009) meta-analysis of 161 articles (181 surveys) reported rates of 30.6% and 30.8% for PTSD and depression, respectively. In any case, the variability observed across the different studies on prevalence of PTSD and depression among victims of conflicts is very large and is influenced by numerous factors, such as reported torture, number and cumulative exposure to potentially

traumatic events, time since conflict, residency status, and assessed level of political terror (Steel et al., 2009).

Psychological damage could appear not only in the short and midterm but also in the long term. An exploration of psychological disorders in long-term refugee women living at the Sahrawi camps in Tindouf (Algeria) showed that 80.64% of the interviewed women had received psychological assistance, 100% rated positively on somatization, 90.3% on obsessive compulsive, 93.5% on interpersonal sensitivity, 96.8% on depression, 93.5% on anxiety, 77.4% on hostility, 87.1% on phobic anxiety, 90.3% on paranoid ideation, and 90.3% on psychoticism (Guarch-Rubio & Manzanero, 2017). In the Balkans, studies on the population surviving the Albanokosovar repression and political oppression from 1996 to 1999 (Eytan, Guthmiller, Durieux-Paillard, Loutan, & Gex-Fabry, 2011) showed indicators for PTSD in 14.5% in 2007, while Silove, Ivancic, Rees, Bateman-Steel, and Steel (2014) found a 4.9% prevalence of PTSD 4 years after the East-Timor conflict. Actually, different studies have shown that PTSD can become chronic in between 15% and 20% of victims of war and other conflicts (Eytan et al., 2011; Sabin et al., 2003; Stammel et al., 2013). Sabin et al. (2003), with refugees from Chiapas 20 years after their forced displacement, found that 12% of the sample fulfilled criteria for PTSD while 54% and 39% showed anxiety and depression symptoms, respectively. Similarly, Gómez et al. (2015), evaluating victims of torture of the Chilean military dictatorship, found that, after 40 years, 16.7% presented PTSD, and 54.5% and 45.5% anxiety and depression symptoms, respectively.

Usually, children and women are considered vulnerable victims in war situations. In some armed conflicts, they are often used as a weapon of war and may suffer violence subjected to persecution, discrimination, oppression, sexual violence, and slavery. In war, situations of violence and food shortages affect children's cognitive

and physical development, as well as their mental health. Several revisions of studies (Attanayake et al., 2009; Bronstein & Montgomery, 2011; Dimitry, 2012) have analyzed prevalence of mental disorders among children exposed to war. Attanayake et al. (2009) used a systematic review and metaregression analysis, including 17 studies and 7,920 children, and found a higher prevalence rate of mental disorders (PTSD, depression, and anxiety disorders) among children exposed to conflict than among the general population. Bronstein and Montgomery (2011) showed percentages between 19% and 54% for PTSD and between 3% and 30% for depression. Dimitry (2012) reviewed the literature on the mental health of children and adolescents living in areas of armed conflict in the Middle East and found that prevalence of PTSD in children and adolescents was estimated to be 5% to 8% in Israel, 23% to 70% in Palestine, and 10% to 30% in Iraq; data showed that the number of conflict-related traumatic experiences correlates positively with prevalence of mental, behavioral, and emotional problems; this author identified that level and type of trauma exposure, age, gender, socioeconomic adversity, social support, and religiosity mediated the effects. Studies about the lifetime prevalence of mental disorders in children living in the United States found that 4% of 13- to 18-year-olds would suffer PTSD (Merikangas et al., 2010), and 11% would suffer major depressive disorder (Avenevoli, Swendsen, He, Burstein, & Merikangas, 2015).

The whole Palestine region, and the Gaza Strip in particular, have undergone persistent conflict for decades, implying repetitive exposure to violence and war, and clearly affecting the psychological state and health of the population, and the quality of their life (Thabet, Abed, & Vostanis, 2001; Thabet & Thabet, 2016), adding urgency to the need to understand and address the implications of war-related trauma among this population. Recently, several studies have noted the psychopathological consequences

of war in the Gaza Strip among adult women (Sousa, 2013), adolescents (Thabet, El-Buhaisi, & Vostanis, 2014), and preschool children (Thabet, Abu-Khusah, & Vostanis, 2014) and have assessed the memories of traumatic events among adults (Manzanero, López, Aróztegui, & El-Astal, 2015).

Thabet and Vostanis (2000), in a longitudinal study with Palestinian children between 7 and 12 years old, found that 40.6% of the children showed moderate to severe PTSD. In a previous study, Thabet and Vostanis (1999) assessed 239 children aged between 6 and 11 years and found that 41% reported moderate/severe PTSD reactions, being the total number of experienced traumas the best predictor of presence and severity of PTSD. More recently, they have showed that anxiety and depression disorders in children (4-6 year old) from Gaza Strip may be mediated through the mother's mental health (Thabet et al., 2014). Massad et al. (2009) evaluated children from the Gaza Strip aged between 3 and 6 years, finding behavioral problems in 31.3% to 56.3% of the children and emotional problems in 12.5% to 21.4%. Shehadeh, Loots, Vanderfaeillie, and Derluyn (2015) evaluated children between 3 and 10 years old whose parents were prisoners in Israel or lived in Palestine, finding PTSD symptoms in 25.3% of the children whose parents had been made prisoners and 4.3% in the rest.

On July 8, 2014, the Israeli army launched an attack against the population of Gaza Strip that lasted for 51 days, causing the death of 2,147 people, 530 of them children, 302 women, and 64 unidentified. This attack caused the destruction of infrastructures, particularly water supplies and sewerage, while the destruction of dwellings left more than 500,000 people homeless. Approximately 50,000 of them took refuge in UNRWA (United Nations Relief and Works Agency for Palestine Refugees in the Near East) schools. Other people found refuge with family or friends, in overcrowded conditions and lacking essential resources.

Aiming to further understand the effect of this event on children, the present study assessed exposure to traumatic events and posttraumatic symptoms in children from the Gaza Strip between December 30, 2014, and May 17, 2015. The assessment is based on the application of the Harvard Trauma Questionnaire (HTQ), developed by the Harvard Program in Refugee Trauma (Mollica et al., 1992) in its Iraqi Version–Arabic (Shoeb, Weinstein, & Mollica, 2007).

The objectives of the study were twofold: (a) to identify the prevalence of exposure to traumatic events, during the episode of the Israeli attacks during the summer of 2014, among male and female children aged 6 to 12 years living in the Gaza Strip; and (b) to examine the symptoms of traumatic stress after the event in these children as described by their parents or tutors, using the HTQ. All in all, this work is based on the need to know the effects of war on children to establish, wherever possible, public policies to prevent irreversible damage to this group through appropriate interventions designed specifically for the range and type of damage observed.

## **Method**

### *Participants*

UNRWA Elementary Schools in the five provinces of the Gaza Strip were selected, asking the collaboration of parents or tutors of children attending elementary education. 1,865 parents agreed to collaborate in the study, resulting in a sample of an equal number of children. Of the total sample, 15 did not adequately complete the questionnaire, lacking relevant data. Thus, the final sample was composed of 1,850 children, 973 male ( $M_{\text{age}} = 9.04$  years old,  $SD = 1.96$ ) and 877 female ( $M_{\text{age}} = 9.20$  years old,  $SD = 2.05$ ), from the 5 governorates that comprise the Gaza Strip: Rafah, Khan Yunis, Wustah, Gaza City and North Gaza.

### *Variables and instruments*

The Iraqi Version-Arabic of *Harvard Trauma Questionnaire* (HTQ) (Shoeb et al., 2007) allows to obtain information about a series of traumatic events and about the emotional symptoms associated to those events. This version of the HTQ was adapted for the present study with children and Palestinian cultural and language specificities in the following way. This questionnaire is divided in four sections:

- The first enumerates a number of traumatic events (38) and a yes/no question (see items in Table 1).
- The second corresponds to a section with two open questions, where the subject is asked to describe in more detail the event they perceived as the most traumatic. This section will not be analyzed in the present study due to the complexity that the analysis of open questions with a sample of 1,865 participants entails.
- The third section measures the risk of neurological complications that can arise from certain traumatic events (see items in Table 2).
- The fourth measures the symptoms of trauma and is composed of 44 items (see Table 3) that evaluate the severity or intensity of the symptoms on a 4-point Likert-type scale (1 = *not at all*, 2 = *a little*, 3 = *quite a bit*, 4 = *extremely*). The first 16 items aim to measure PTSD symptoms according to *Diagnostic and Statistical Manual of Mental Disorders* (4th ed.; *DSM-IV*; American Psychiatric Association, 1994) criteria, with a threshold of 2.5 or higher. The other 28 items quantify what the authors name “refugee specific,” which evaluates the impact that the traumatic events could have had on their perception of their own daily life. The overall scale of Section 4 also considers a threshold value of 2.5 or higher. The Cronbach’s alpha of the section in this sample was .962 and

interitem correlation was .368. The reliability found overcame the .35 value for all the 44 items.

### *Procedure*

The civil organizations in the Gaza Strip were asked in writing by the Department of Psychology of the Al-Azhar University–Gaza, for their collaboration in the application of the HTQ. When approval was obtained, an experienced and well-trained team (female psychologists and sociologists who worked with the families) went to the centers to meet the children's mothers. The day of the test application, the purpose of the study, and how to complete it were explained. Then, the mothers were orally asked for their consent to apply the test. Some of the mothers were still seeking shelter at the UNRWA schools, whereas others lived in their own homes. The application covered the entire Gaza Strip from north to south (North Gaza, Wustah, Khan Yunis, Rafah), including the border areas that had been directly affected by the war and the downtown areas.

Following the same procedure as in other similar studies with children, the parents (or guardians) answered the questionnaires in relation to their children, because, due to their young age, comprehension difficulties could arise if children were to perform the test themselves. The mothers were asked about the trauma that the war had caused their children.

The questionnaires were applied between January and May 2015, 6 months after the Israeli army carried out attacks on the Gaza Strip on July 8, 2014, which lasted for 51 days, resulting in serious damage to the population and to the cities and their infrastructures. The study was conducted 6 months after the end of the attacks due to difficulties in moving through the territory of the Gaza Strip during the previous period

and for security reasons. Thus, it was hoped that once the attacks ended, the situation would allow the study to be carried out.

This study is part of a research project regarding the assessment of psychological trauma in vulnerable refugees and asylum seekers (children and women) and was approved by the Ethics Committee from Complutense University of Madrid (Spain). It was endorsed by the UNHCR-Spain and declared of interest to the European Union, and it was possible thanks to the collaboration of the UNRWA schools. After the attacks of the summer of 2014, several institutions (the UNRWA's Community Mental Health Programme and Mercy Corps in Gaza) assisted Palestine refugees in the Gaza Strip, and asserted that children who could present some physical and psychological needs as a result of the war were adequately cared for. They collectively supported children and families through not only individual and group counseling but also targeted interventions aimed at enhancing psychosocial resilience and well-being. In this context, all the children and their families who participated in the study had the necessary psychological support.

## **Results**

### *Traumatic events exposure*

Table 1 shows the percentage of children that were exposed to the different kinds of traumatic events. As can be observed, most of the children were exposed to bombardments and residential area destruction (83.51%), were confined to their homes (72.92%), were witness to mosque desecration (70.38%), were forced to flee (53.95%), were witness to chemical attacks (48.05%), lacked food or clean water (46.11%), were forced to leave their hometown (43.08%), had a relative that suffered physical harm

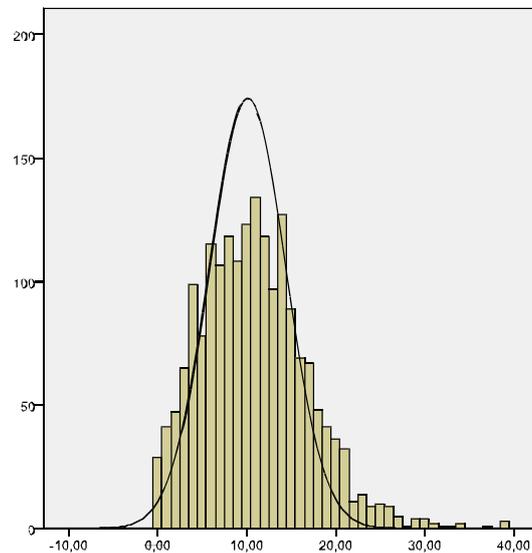
(42.11%), suffered from disease without being able to access medical care (39.89%), or were witness to someone being physically harmed (39.46%) or murdered (34.65%).

*Table 1. Percentage of children who have suffered traumatic events according to their gender and age.*

Trauma Events	Male	Female	Total
1. Searched his or her home	13.9	13.0	13.5
2. Searched (frisked)	7.5	5.4	6.5
3. Property looted or destroyed	22.3	18.9	20.8
4. Forced to leave his or her hometown	44.3	41.7	43.1
5. Imprisoned	7.0	5.1	6.1
6. Diseases without being able to access to medical care	41.1	38.5	39.9
7. Lack of food or clean water	48.1	43.9	46.2
8. Forced to flee	56.1	51.5	54.0
9. Lacked shelter	34.4	30.1	32.4
10. Witnessed mosques desecration	72.0	68.9	70.6
11. Arrest, torture, or execution of important family members	18.9	16.4	17.7
12. Witnessed mass execution of civilians	31.0	27.8	29.5
13. Witnessed shelling, burning, or razing of residential areas	84.7	82.2	83.6
14. Witnessed chemical attacks	48.5	47.7	48.2
15. Exposed to combat situation	65.9	67.5	66.6
16. Serious physical injury	9.3	10.3	9.7
17. Used as a human shield	6.2	5.9	6.1
18. Physical injury of family member	44.0	40.0	42.2
19. Witnessed corpses	62.0	57.7	60.0
20. Confined to home	74.1	71.7	73.0
21. Witnessed someone being physically harmed	43.1	35.6	39.6
22. Witnessed sexual abuse or rape	4.6	4.9	4.8
23. Witnessed torture	28.3	27.1	27.7
24. Witnessed murder	37.3	31.7	34.7
25. Forced to inform on someone	9.5	9.6	9.5
26. Forced to destroy someone's property	9.3	11.3	10.2
27. Forced to harm someone physically	8.2	7.6	8.0
28. Murder or violent death of family member	12.3	13.3	12.8
29. Murder or violent of friend's death	21.4	17.6	19.6
30. Disappearance of a family member	7.7	9.0	8.3
31. Disappearance of a friend	12.9	12.3	12.7
32. Family member kidnapped or taken as a hostage	5.0	5.4	5.2
33. Friend kidnapped or taken as a hostage	5.8	4.0	4.9
34. Someone informed on you placing you and your family	7.4	8.9	8.1
35. Physically harmed	12.5	11.1	11.8
36. Kidnapped or taken as a hostage	3.2	3.2	3.2
37. Sexually abused or raped	3.1	3.8	3.4
38. Tortured	9.7	10.1	9.9

Moreover, the results of the questionnaire show that 12.81% of the children lost a close family member due to a violent death, and 8.32% due to disappearance, 19.57% lost a friend, 11.78% were physically harmed, 9.73% of them severely harmed, 9.89%

were tortured, 6.11% were made prisoners, 3.41% were sexually assaulted, and 20.70% had their property looted or destroyed.



*Figure 1. Histogram of the number of traumatic events experienced by children (n = 1850).*

In Figure 1, a histogram of the number of traumatic events suffered by the children ( $M = 10.86$ ;  $SD = 5.98$ ) can be observed.

After analyzing the traumatic events exposure in terms of gender (see Table 1), results showed that, in general, gender was no related to the number of traumatic events, except for four events: forced to flee,  $\chi^2(1, N = 1848) = 4.083$ ,  $p < .05$ ; witnessed someone being physically harmed,  $\chi^2(1, N = 1845) = 10.637$ ,  $p < .001$ ; witnessed murder,  $\chi^2(1, N = 1846) = 6.227$ ,  $p < .05$ ; and murder or violent of friend's death,  $\chi^2(1, N = 1848) = 4.267$ ,  $p < .05$ . In all cases, the girls were less exposed than boys to those traumatic events, probably because, in Palestinian society, girls are more protected by their families; that is, girls are more likely to be at home (because they are not allowed to go outside alone), whereas boys are more likely to stay out on the streets because they are allowed to.

In terms of differences due to age, significant effects were only found for the following: Forced to leave his or her hometown and settle in a different part of the country with minimal services,  $F(1,1786) = 5.959, p < .05, \eta^2 = .003$ ; Witnessed mass execution of civilians,  $F(1,1845) = 4.559, p < .05, \eta^2 = .002$ ; Witnessed corpses,  $F(1,1846) = 5.715, p < .05, \eta^2 = .003$ ; Physically harmed,  $F(1,1844) = 6.225, p < .05, \eta^2 = .003$ . In these cases, children who experienced these traumatic events are older than the children who did not. However, effect sizes were very low.

### *Physical harm and neurological damage*

As there was no medical report on the matter, the possible neurological damages that children may have suffered can only be estimated from the information provided by their parents (see Table 2). Forty-seven children (2.54%) suffered injury to their body and to their head due to nearby explosions, 27 of these children suffered loss of consciousness as a result. Sixty-three children (3.40%) suffered injuries to their body, 43 lost consciousness. Three children (0.16%) suffered head injuries with loss of consciousness. All in all, 73 children (3.94%) suffered from loss of consciousness.

*Table 2. Percentage of Children Who Have Suffered From Physical Harm and Neurological Damage (N = 1,850).*

Injury	%
Injury to the body from a nearby explosion	6.05
Loss of consciousness	3.68
Injury to the head from a nearby explosion	2.70
Loss of consciousness	1.62
Neurological consequences	2.43
Memory deficits	1.08
Starvation	8.32
Loss of weight <sup>a</sup>	4.33 (4.32)

<sup>a</sup> Average of weight loss only when for positive answers (*SD* in parentheses).

## Trauma symptoms

The fourth section of the questionnaire analyzed trauma symptoms, and the results, in terms of age, can be found in Table 3. As mentioned in the materials section, the HTQ includes in the first 16 items according to the *DSM-IV* PTSD criteria. In both cases, PTSD and HTQ, the threshold is 2.5. As it can be seen, average scores in both indexes did not go above that score, and only Items 1 and 10 were above 2.5.

*Table 3. Average Scores (M) and Standard Deviations (SD) of Trauma Symptoms According to DSM-IV Criteria for PTSD (Items 1-16) and According to HTQ Criteria (Items 1-44).*

Trauma Symptoms	Male		Female		Total	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
1. Recurrent thoughts or memories of the most hurtful or terrifying events	2.56	0.97	2.54	0.96	2.55	0.96
2. Feeling as though the event is happening again	2.27	0.94	2.27	0.97	2.27	0.96
3. Recurrent nightmares	2.23	0.99	2.20	0.99	2.21	0.99
4. Feeling detached or withdrawn from people	1.64	0.86	1.62	0.87	1.63	0.86
5. Unable to feel emotions	1.71	0.85	1.68	0.86	1.69	0.86
6. Feeling jumpy, easily startled*	2.21	1.05	2.07	1.01	2.15	1.03
7. Difficulty concentrating*	2.26	0.96	2.16	1.01	2.20	0.99
8. Trouble sleeping	2.03	0.95	2.04	0.98	2.03	0.97
9. Feeling on guard	2.04	0.94	2.05	0.99	2.05	0.96
10. Feeling irritable or having outbursts of anger**	2.54	1.05	2.36	1.03	2.46	1.05
11. Avoiding activities that remind the child of the hurtful event	2.18	0.99	2.18	1.01	2.18	1.00
12. Inability to remember parts of the most hurtful events	1.83	0.91	1.79	0.91	1.81	0.91
13. Less interest in daily activities	2.06	0.94	1.96	0.93	2.01	0.93
14. Feeling as if the child doesn't have a future	1.85	0.97	1.79	0.97	1.82	0.97
15. Avoiding thoughts or feelings associated with the hurtful events	2.05	0.95	2.11	0.98	2.08	0.96
16. Sudden emotional or physical reaction when reminded of the most hurtful events	2.16	0.95	2.11	0.99	2.13	0.97
PTSD (DSM-IV)	2.11	0.63	2.04	0.64	2.07	0.63
17. Poor memory**	2.02	1.03	1.83	0.96	1.93	0.99
18. Feeling exhausted*	2.04	0.99	1.94	0.98	1.99	0.98
19. Troubled by bodily pain or physical problems*	1.79	0.98	1.67	0.91	1.73	0.95
20. Feeling that the child has less skills than before	2.13	1.01	2.03	0.99	2.08	1.00
21. Difficulty paying attention**	2.26	1.00	2.04	0.96	2.15	0.99
22. Feeling unable to make daily plans**	2.09	0.93	1.92	0.91	2.01	0.93
23. Having difficulty dealing with new situations	2.03	0.91	1.99	0.93	2.01	0.92

24.	Feeling that the child is the only one who suffered these events**	1.69	0.90	1.57	0.85	1.63	0.88
25.	Feeling that others don't understand what happened to him or her	1.80	0.93	1.74	0.94	1.77	0.93
26.	Feeling guilty for having survived	1.50	0.81	1.45	0.80	1.47	0.81
27.	Blaming himself or herself for things that have happened	1.44	0.77	1.39	0.75	1.42	0.76
28.	Spending time thinking why God is making the child go through such events*	1.99	1.04	1.87	0.98	1.93	1.01
29.	Feeling a need for revenge**	2.30	1.20	2.09	1.13	2.20	1.17
30.	Feeling others are hostile toward the child	1.78	0.94	1.71	0.95	1.74	0.94
31.	Feeling no trust in others	1.80	0.90	1.73	0.87	1.77	0.89
32.	Feeling that the child has no one to rely upon but God	2.29	1.18	2.22	1.19	2.25	1.18
33.	Hopelessness	1.61	0.87	1.61	0.87	1.61	0.87
34.	Feeling powerless to help others	1.73	0.87	1.66	0.87	1.70	0.88
35.	Feeling ashamed of the hurtful or traumatic events that have happened to the child	1.42	0.79	1.45	0.84	1.44	0.81
36.	Feeling humiliated by their experience	1.64	0.94	1.59	0.91	1.62	0.92
37.	Feeling that the child is a jinx to himself or herself and his or her family	1.40	0.78	1.35	0.74	1.38	0.76
38.	Finding out or being told by other people that the child has done something that the child can't remember	1.63	0.86	1.56	0.83	1.60	0.85
39.	Feeling as though the child is split into two people and one of him is watching what the other is doing	1.47	0.81	1.42	0.77	1.45	0.79
40.	Ruminations, poor concentration, lack of initiative, boredom, sleep problems, tiredness, and somatic complaints**	2.23	1.08	2.05	1.03	2.14	1.06
41.	Sensation of the heart being squeezed	1.98	0.99	1.95	1.00	1.7	1.00
42.	Irritability, nervousness, lack of patience, and anger outbursts**	2.62	1.07	2.34	1.06	2.48	1.07
43.	Feeling of tightness in the chest and a choking sensation*	1.92	1.03	1.79	0.97	1.86	1.00
44.	Tired soul	2.20	1.08	2.15	1.10	2.18	1.09
Total Score 1-44**		1.97	0.58	1.88	0.58	1.92	0.58

Note. DSM-IV = Diagnostic and Statistical Manual of Mental Disorders (4th ed.; American Psychiatric Association, 1994); PTSD = posttraumatic stress disorder; HTQ = Harvard Trauma Questionnaire.  
\* $p < .05$ . \*\* $p < .01$ .

The ANOVA showed significant differences according to gender on the following items: feeling jumpy, easily startled,  $F(1, 1751) = 5.905, p < .5, \eta^2 = .003$ ; difficulty concentrating,  $F(1, 1751) = 4.060, p < .5, \eta^2 = .002$ ; feeling irritable or having outbursts of anger,  $F(1, 1751) = 11.838, p < .1, \eta^2 = .007$ ; poor memory,  $F(1, 1751) = 15.771, p < .1, \eta^2 = .009$ ; feeling exhausted,  $F(1, 1751) = 4.058, p < .5, \eta^2 = .002$ ; troubled by bodily pain or physical problems,  $F(1, 1751) = 6.278, p < .5, \eta^2 = .004$ ;

difficulty paying attention,  $F(1, 1751) = 20.370, p < .1, \eta^2 = .012$ ; feeling unable to make daily plans,  $F(1, 1751) = 9.860, p < .1, \eta^2 = .006$ ; feeling that the child is the only one who suffered these events,  $F(1, 1751) = 6.586, p < .1, \eta^2 = .004$ ; spending time thinking why God is making the child go through such events,  $F(1, 1751) = 3.800, p = .05, \eta^2 = .002$ ; feeling a need for revenge,  $F(1, 1751) = 11.197, p < .1, \eta^2 = .006$ ; ruminations, poor concentration, lack of initiative, boredom, sleep problems, tiredness, and somatic complaints,  $F(1, 1751) = 12.873, p < .1, \eta^2 = .007$ ; irritability, nervousness, lack of patience, and anger outbursts,  $F(1, 1751) = 29.746, p < .1, \eta^2 = .017$ ; feeling of tightness in the chest and a choking sensation,  $F(1, 1751) = 5.416, p < .5, \eta^2 = .003$ ; and also in the average total scores in the HTQ (Items 1-44),  $F(1, 1751) = 7.339, p < .1, \eta^2 = .004$ . In all cases, males scored higher than females, although in general the effect sizes were low.

The Pearson's correlation coefficients (bilateral) about age and trauma symptoms were calculated and showed significant relationships on the following items: Feeling as if the child doesn't have a future,  $r(1846) = .069, p < .01$ ; avoiding thoughts or feelings associated with the hurtful events,  $r(1846) = .057, p < .05$ ; feeling exhausted,  $r(1849) = .059, p < .05$ ; troubled by bodily pain or physical problems,  $r(1844) = .060, p < .01$ ; feeling that the child has less skills than before,  $r(1843) = .092, p < .001$ ; spending time thinking why God is making child go through such events,  $r(1847) = .047, p < .05$ ; and sensation of the heart being squeezed,  $r(1847) = .058, p < .05$ . In all these symptoms, older age involved higher scores.

When the relationship between the number of experienced traumatic events and the total score on the HTQ trauma symptom (Items 1-44) was analyzed, a positive correlation between the two was found,  $r(1850) = .539, p < .001$ . The same was found for total score on the DSM trauma symptoms (Items 1-16),  $r(1850) = .523, p < .001$ .

Total scores on HTQ trauma symptom and total score on DSM were highly related,  $r(1850) = .923, p < .001$ .

### *Posttraumatic Stress Disorder*

Looking at individual cases, 275 males (28.3%) and 232 females (26.5%) scored higher than 2.5 in the PTSD score (*DSM-IV*). No significant relationship was found between gender and PTSD,  $\chi^2(1, N = 1850) = 0.759, p = .38$ ; or between age and PTSD,  $F(1, 1849) = 1.125, p = .289; \eta^2 = .001$ . The presence of PTSD was related to the number of traumatic events experienced,  $F(1, 1864) = 301.494, p < .001; \eta^2 = .139$ . The number of traumatic experiences were higher in children diagnosed for PTSD ( $M = 14.49, SD = 6.01$ ) than in children without that disease ( $M = 9.49, SD = 5.37$ ).

### **Discussion**

The present article studies war-related trauma and its effects on a large sample of children living in the Gaza Strip 6 months after the attack launched by the Israeli army on July 8, 2014, which lasted for 51 days. Thus, it focuses on war trauma effects on children, which is a particularly vulnerable group and, therefore, critical to study. Moreover, as conflict in this region is ongoing, there is a pervasive need to understand and address the implications of war-related trauma among this population to establish adequate and tailored policies and clinical interventions.

The traumatic symptomatology found in the total sample fulfills the criteria for PTSD diagnosis in 26% to 30% of the cases and is related to the number of trauma events experienced. Comparing these numbers with the study (Thabet & Vostanis, 2000) carried out in the Gaza Strip 6 months after the start of the peace process initiated by the Middle East Oslo agreement, with children who had been brought up during the military conflict in the area between 1987 and 1993, it can be said that the PTSD

prevalence found in the present study is around 10% lower. This difference could be explained by the intervention programs implemented since then by UNRWA and other nongovernmental organizations in the Gaza Strip to promote children's mental health, which would indicate their effectiveness. Comparing the current data with those obtained by Shehadeh et al. (2015) before the bombardments of summer 2014 (albeit in slightly younger children), we can state that now the prevalence of PTSD is higher than that found at that time, whose data showed a 4.3% prevalence of PTSD in the children evaluated, and it is similar to the prevalence found in children whose parents are in prison (25.3%). In any case, they showed a much higher prevalence of PTSD than that found in the general population of children in countries such as the United States (Merikangas et al., 2010). Present data suggest that children in the Gaza Strip were psychologically affected by the Israeli attacks that took place during the summer of 2014, fulfilling by a wide margin the criteria set by DSM-IV for PTSD.

With regard to differences due to age or gender, the effects found are generally low in size, so they should be interpreted with caution as effects that were found may be spurious. In any case, significant positive relationships were found between traumatic symptomatology and age, perhaps as a consequence of several factors such as the higher exposure to traumatic experiences and a higher conscience of the gravity of the situation, of the consequences of the events, and of the subsequent situation. The perpetuation of the harm caused by the traumatic event is determined by the period following the initial traumatic event itself (Keilson, 1979). Conversely, the exposure to previous traumatic events and stress accumulation affect the development of PTSD and also have a negative impact on mental health. Inhabitants of the Gaza Strip have been suffering from the Palestinian–Israeli conflict for decades, with the bombardments that took place at Christmas 2008 being most notorious, as they had already affected the

children from the older group. Resilience is also a factor to take into account, considering coping and problem-solving abilities as good resilience predictors (Huijts, Kleijn, Emmerik, Noordhof, & Smith, 2012; Leaman & Gee, 2012).

On the contrary, data showed significant differences according to gender, probably due to the better protection girls tend to receive from their families, which corroborates what other studies on the same population group had already observed (Massad et al., 2009; Shehadeh et al., 2015; Thabet, Ibraheem, Shivram, Winter, & Vostanis, 2009). The lower degree of exposure to trauma could explain the lower psychological and physical harm found in females, in contrast to data about the general population of minors showing a higher prevalence of PTSD in female children (Merikangas et al., 2010), but in the same direction as the data showing that family environment and parental functioning emerged as moderators of the exposure–outcome association for PTSD in children (Slone & Mann, 2016). In any case, the main factor seems to be trauma exposure, as systematic reviews have shown (Dimitry, 2012).

Nevertheless, regardless of the observed psychological harm, no significant effects due to gender, age, or interaction between them were found when considering the development of PTSD, unlike certain previous studies (Bronstein & Montgomery, 2011). There is increasing evidence among scientific literature of the psychopathological consequences, including depression, anxiety disorders, PTSD, or personality disorders, in adult life of traumatic events occurred during childhood and preadolescence. The amount, type, and severity of the traumatic events as well as the age at which they have occurred could very well be risk factors for the appearance of psychological disorders during adulthood. Weil et al. (2004), in a study on hospitalized patients in four Chilean hospitals, measuring psychopathological symptoms, interpersonal problems, and social role as well as PTSD, and affective and somatization

disorders diagnosis attempted to study the relationship between psychological trauma and adult symptoms. They found a high correlation between childhood trauma and stress disorders in adulthood, with a statistically significant association between childhood trauma and PTSD, somatization, and affective disorders.

Nonetheless, this study has some limitations. The cross-sectional, descriptive nature of the design precludes causal inferences. Specifically, the design does not allow determining whether the symptoms found are exclusively linked to the experience of war in all children and not to other factors (e.g., child abuse or neglect, mental problems in the family, etc.). Moreover, as data are based exclusively on the HTQ, this study shares the same limitations of this instrument: It is based on the DSM-IV (see a critique of these criteria in Marshall, Schell, & Miles, 2013; McNally et al., 2014; Shevlin & Elklit, 2012), and in fourth section about trauma symptoms, some items overlap with each other, resulting in redundant information provided by the respondents. Moreover, as children's trauma exposure and symptoms have been reported by their parents or tutors, there could be some kind of inaccuracy and bias; further research is needed to compare parents' and children's reports regarding child symptomatology. Similarly, there is a limitation regarding the generalizability of our results, as the sample was selected from schools belonging to the UNRWA, and results may differ in relation to the degree of impairment of children outside these institutions or even those not scholarized.

Despite these limitations, this study contributes to improve our comprehension of the psychological effects of war trauma on children and specifically about trauma exposure and symptoms in Gaza Strip children. Moreover, these results could have important clinical implications in the design of policies and interventions to prevent posttraumatic symptoms and disorders in this population. In this sense, our results

highlight the need to pay particular attention to male older children, which a priori could be considered those less vulnerable among children, and the convenience of a long-lasting monitoring of the mental health of those children who have been exposed to war-related trauma.

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