

Acute Stress Disorder in Palestinian Children in the Gaza Strip

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Authors' contributions

This work was carried out in collaboration between both authors. Authors AMT designed the study and wrote the protocol. Author SST performed the data collection and statistical analysis, managed the literature search. Author AMT wrote the first draft of the manuscript with assistance from author SST. Both authors read and approved the final manuscript.

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ABSTRACT

Aim: This study aimed to describe the range of acute traumatic stress disorder symptoms in a sample of displaced and non-displaced children and adolescents in the Gaza Strip.

Methods: This was descriptive analytic study. The study sample consisted of 381 children and adolescents ranging in age from 7 to 18 years. Regarding displacement status, 190 of them were non-displaced (50.1%) and 191 were displaced (49.91%). Ninety-four of displaced children were boys (49.22%), while, 73 of non-displaced children were boys (38.41%). One hundred seventeen of displaced children were girls (61.6%), 97 of non-displaced children were girls (50.8%). Children were assessed by a socio demographic questionnaire, the Gaza Traumatic Events Checklist, and Acute Stress Disorder Scale.

Results: The highest frequencies of reported traumatic events for both groups (displaced and non-displaced) were hearing shelling of the area, hearing the loud voice of Drones, and watching mutilated bodies in TV. However, displaced children reported more traumatic event such as forced to leave home with family members due to shelling, receiving pamphlets from Airplane to leave home at the border area to the city center, threatened by telephone to leave their homes for

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bombardment of homes, destruction of their personal belongings during incursion. Displaced children reported more traumatic events than non-displaced ones (Mean= 13.6 vs. 9.08). Boys reported more traumatic events. Using the DSM-V criteria, 10.0% of non-displaced children and 18.4% of displaced children had acute traumatic stress disorder. Displaced children reported more acute stress disorder, dissociative, re-experiencing, avoidance, and hyperarousal symptoms. Traumatic events were associated acute traumatic stress, re-experiencing, and hyperarousal symptoms.

Conclusion and recommendations: This study showed that Palestinian children and adolescents are victims of continuous war and trauma, and will develop new symptoms of acute stress disorder after exposure to war in the Gaza Strip. Such findings highlight the needs for better mental health services for children especially displaced populations who are not able to return to their homes due to the siege, in order to increase their coping abilities and resilience in face of adversities.

Keywords: Acute stress disorder; children; Gaza; trauma; war.

1. INTRODUCTION

The Middle East including Palestinian Territories region is known for having the largest number of refugees and internally displaced people in the world. During the twentieth century, several states in the region generated massive waves of refugees as a result of interstate conflicts, large-scale development projects, forced settlement of nomads, and ethnically motivated forced migration and internal civil wars [1].

During the summer of 2014, another wave of violence on Gaza started in July, and continued for 51 days (7th July–to 26th August 2014). Such violence and war lead to massive damage of Palestinian personal properties including homes, factories, and infrastructure. According to the United Nations for Relief and Work of Palestinians in the Middle East (UNRWA), 10,854 people, including 3,307 children, 2042 women and 401 elderly were injured and 1045 were killed. As of 22 August, a quarter of the total Gaza population were internally displaced as a result of the hostilities. Approximately 300,000 were sheltered in 85 UNRWA schools, 45,000 were hosted in non-UNRWA premises, and at least 137,400 more were in other hosting arrangements [2].

Displacement poses greater physical and psychosocial challenges and risks for children as they are more prone to abuse, neglect and exploitation. The United Nations provides the following definition for internally displaced persons: “Internally displaced persons are persons or groups of persons who have been forced or obligated to flee or to leave their homes or places of habitual residence, in particular as a result of or in order to avoid the effects of armed conflict, situations of generalized violence,

violations of human rights or natural or human-made disasters, and who have not crossed an internationally recognized State border” [3].

Acute stress disorder (ASD) was first utilized as a diagnosis in the fourth edition of the Diagnostic and Statistical Manual of Mental Disorders (American Psychiatric Association, 1994) to describe post traumatic reactions after exposure to traumatic events. Diagnostic criteria specify that ASD may develop after an individual has been exposed to a threatening event that elicits a response of fear, helplessness, or horror (Criterion A). The presence of dissociative symptoms (Criterion B), re-experiencing symptoms (Criterion C), marked avoidance of the traumatic stimuli (Criterion D), and marked symptoms of hyperarousal (Criterion E) are also required. Additionally, the disturbance must persist between 2 days to 4 weeks after the onset of the traumatic event and cause clinically significant distress (Criterion F and G). The fifth edition of the Diagnostic and Statistical Manual of Mental Disorders diagnosis include a listing of dissociative symptoms (derealization, depersonalization, dissociative amnesia), but no longer stipulate that a specific number of dissociative symptoms must be present to meet the criteria for the disorder [4].

Criticisms about ASD have been voiced that question the additive benefit and clinical utility for creating another disorder that so closely resembles Post Traumatic Stress Disorder (PTSD) [5,6]. Some clinicians and researchers also disagree with the diagnostic emphasis placed on dissociative symptoms in the criteria for ASD [7,8]. Children’s post-disaster war adjustment includes a wide range of biological, cognitive, emotional, and behavioral components. PTSD had been identified as the

most commonly assessed mental health outcomes for child and adult disaster survivors [9]. We reviewed study of 93 patients 10–16 years old who were seen in an emergency department for having been assaulted or having been involved in a motor vehicle accident, and were interviewed within 4 weeks after the assault or accident to assess acute stress disorder. At initial interview, 18 (19.4%) of the 93 patients had acute stress disorder and 23 (24.7%) met all acute stress disorder criteria except dissociation [10]. Research in similar context showed that wars and internal violence carry negative consequences on children, including heightened aggression and violence, revenge seeking, insecurity, anxiety, depression, withdrawal, post-traumatic stress and somatic complaints, sleep disorders, fear and panic, poor school performance and engagement in political violence [11].

The aim of the current study was to describe the range symptoms of ASD in the aftermath of trauma due to 51 days war in a sample of displaced and non-displaced children and adolescents in the Gaza Strip.

2. METHODS

2.1 Participants

The target population consisted of 381 children ages 7 to 18 years, who were exposed to the war on the Gaza Strip between 7 July and 26 August 2014, and who lived in three localities of the Gaza Strip (North, Gaza, Middle area). As shown

in Fig. 1, 190 of children were non-displaced (50.1%) and 191 were displaced (49.91%). Ninety-four of displaced children were boys (49.22%), while, 73 of non-displaced children were boys (38.41%). One hundred seventeen of displaced children were girls (61.6%), 97 of non-displaced children were girls (50.8%). The displaced children sample (191) was selected randomly from 6 schools in Gaza city which were used as shelters for families who left their homes due to bombardment of the border areas. We selected a control group of non-displaced children (190), matched for age (7–18 years) from families living in regions of the Gaza Strip that had been non-displaced.

2.2 Study Procedure

Data were collected by 6 trained professionals (2 psychologists, 2 social workers, and 2 nurses). They were trained for six hours in data collection and interviewing techniques. The data were collected during Sept 2014, less than one year after finishing the war. Children completed self-administered questionnaires at shelters (displaced children), community centers, and homes with assistance from the data collectors. The completion of the self-administrative measures took at least 10 minutes for each child. Socio demographic information, measures of exposure to acute traumatic events and stress disorder were gathered from children by face-to-face interviews. Parents provided informed consent for their children’s participation in the study and they were assured of privacy protection.

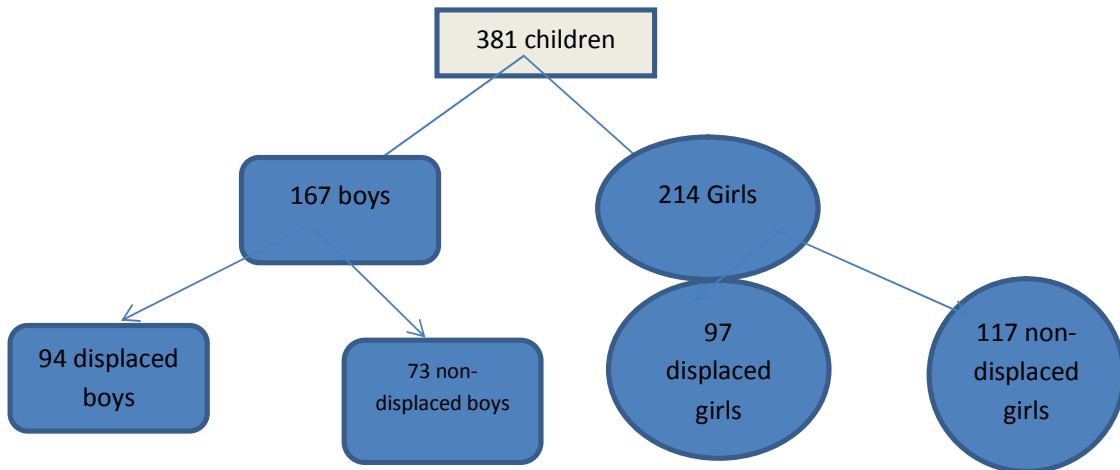


Fig. 1. Study sample N= 381

2.3 Measures

2.3.1 Socio-demographic questionnaire

The researcher prepared a questionnaire which included; name, gender, date of birth, place of residence, number of siblings, and other demographic information.

2.3.2 Gaza traumatic events checklist

The checklist was developed to reflect the particular circumstances of the regional conflict which could not be captured by other war trauma measures and had been reported previously [12,13,14]. This checklist consists of 28 items covering three domains of events typical of the war on Gaza: (1) hearing traumatic events (items number 1-4 include hearing about killing of relatives or friends) (2) witnessing trauma (items number 5-14, experiencing witnessing of home demolition, killing of others); and (3) personal experiences (items number 15-28, being personally the target of violence, being shot, injured, or beaten up by soldiers). The respondents rated whether they had been exposed to each of these events as (0) 'no' or (1) 'yes'. A total score was estimated. Responses to these items were highly internally consistent (Cronbach's alpha=.82).

2.3.3 Acute stress disorder scale

The ASD symptoms were assessed with the acute stress disorder scale [4]. The ASDS is a 14-item scale based on the DSM-V criteria, and each of the items is scored on a 5-point scale that indicates the severity of ASD symptoms from 0 (not at all) to 4 (very much).

The items that compose the scale include 2 assessing dissociation symptoms, 4 assessing intrusion symptoms, one negative mood, 2 assessing avoidance symptoms, and 5 assessing arousal symptoms. The ASDS is now a widely used self-report measure in trauma-related research and clinical settings, and has been demonstrated to have sound psychometric properties [15,16]. Children were classified as having ASD symptoms present when the responses were either "much" or "most of the time" to all of the ASD symptom questions (3 and 4), which is consistent with the Diagnostic and Statistical Manual of Mental Disorders. Acute stress reaction disorder were diagnosed according to DSM-V, presence of nine (or more) of the 14 symptoms from any of the five

categories of intrusion, negative mood, dissociation, avoidance, and arousal, beginning or worsening after the traumatic event(s) occurred. Responses to these items were moderately internally consistent (Cronbach's alpha=.74).

2.4 Statistical Analysis

The analysis was conducted using the Statistical Package for Social Sciences (SPSS 20 for windows, SPSS Inc. Chicago, Illinois, USA). Prevalence rates were given as percentages and other descriptive data were given as percentages and means and standard deviations. Categorical variables were analysed using independent t and chi-square tests to find out differences in trauma and acute stress disorder among both groups. One-way ANOVA post hoc Tukey was used to investigate differences between more than two groups. Associations between continuous variables were measured using the Pearson's correlation coefficient test. In order to find the predictors of acute stress symptoms, multivariate regression analysis was conducted, in which each traumatic events were entered as the independent variables, and total acute traumatic stress symptoms entered as the dependent variable.

3. RESULTS

3.1 Demographic Characteristics of the Study Sample

As shown in table one, the sample consisted of 381 adolescents. The ages ranged from 7 to 18 years, with a mean of 11.83 years (SD=2.55). Displaced children's mean age was 12.07 (SD=2.57) and the mean age of non-displaced children was 11.60 (SD=2.51). No significant differences between the two groups ($t = -1.81$, $p = ns$). As shown in table one, the sample consisted of 381 adolescents. The ages ranged from 7 to 18 years, with a mean of 11.83 years (SD=2.55). Displaced children's mean age was 12.07 (SD=2.57) and the mean age of non-displaced children was 11.60 (SD=2.51). No significant differences between the two groups ($t = -1.81$, $p = ns$). Regarding area of residence, 36.3% of non-displaced children lived in north Gaza area compared to 65.4% of displaced, 56.8% of non-displaced live in Gaza city and 34.6% of displaced children live in Gaza, and 6.8% of non-displaced children live in middle area and none of displaced children was from

middle area. Regarding family monthly income, 80.5% of non-displaced children's families had income less than 300 US\$ compared to 90.6% displaced children. Displaced children were coming from families with significantly less monthly income ($\chi^2= 13.07$ df = 1, $p=0.003$).

3.2 Exposure to Traumatic Events

As shown in table two, the highest frequencies of reported traumatic events by both groups (displaced and non-displaced) were hearing shelling of the area (49.1% vs. 48.8%), hearing the loud voice of Drones (48.3% vs. 47.5%), and watching mutilated bodies in TV (47.2% vs. 45.9%). While, displaced children experienced significantly traumatic event such as forced to leave their home with family members due to shelling of the area (44.6% vs. 23.1%) ($\chi^2= 79.10$ df = 1, $p=0.001$), receiving pamphlets from airplane to leave their home at the border area to the city center (44.1% vs. 14.2) ($\chi^2= 138.10$, df = 1, $p=0.001$), threatened by telephone to leave their home for bombardment of their home (44.1% vs. 14.2%) ($\chi^2= 13.8$, df =1, $p=0.001$), destroying of their personal belongings during incursion (28.6% vs. 10.2%) ($\chi^2= 53.53$, df = 1, $p=0.001$).

Overall, children reported 0 to 28 traumatic events, with a mean = 11.23 (SD=4.92). Independent t test was conducted. Displaced children reported more traumatic events than non-displaced ones (Mean = 13.6 vs. 9.08) ($F= 10.48$, $p=0.001$). Non-displaced females reported more traumatic events toward boys ($t=3.17$, $p=0.001$). No sex differences were observed in reporting traumatic events in displaced children ($t=1.32$, $p=0.18$).

Age was grouped into 7-11, 12-15 and 16-18 years age groups. Post Hoc test using One Way ANOVA showed that non-displaced children aged 16-18 years reported more traumatic events than less than 11 and 12-15 years ($F= 7.75$, $p=0.001$). No age differences were found in displaced children ($F= 0.90$, $p=0.43$). No differences in family monthly income according to exposure to trauma in both groups ($F= 1.90$, $p=0.11$).

3.3 Children's Acute Traumatic Stress Symptoms

The most common acute post traumatic symptoms were intense distress at reminders

(54.73%), exaggerated startle response (52.74%), irritable or aggressive behavior (47.26%), Inability to remember important aspect of event (46.88%), and altered sense of reality (46.27%) (Table 3).

3.3.1 Differences in mean and of acute stress disorder between displaced and non-displaced children

Mean acute stress disorder symptoms in displaced children was 6.54 (SD=3.30) and mean was 4.64 (SD = 3.2) in non-displaced children (Table 4). There were statistically significant differences in acute stress disorder ($t=-5.71$, $p=0.001$), dissociative symptoms ($t=6.17$, $p=0.001$), re-experiencing symptoms ($t=-3.62$, $p=0.001$), avoidance of the traumatic stimuli symptoms ($t=-2.30$, $p=0.001$), and hyperarousal symptoms ($t=-4.02$, $p=0.001$) toward displaced children.

Using cut-off point of 8 and more symptoms for diagnosis of acute traumatic stress disorder, 108 of children (28.4%) reported acute traumatic stress symptoms (much/all the time) and 273 of children reported no symptoms (70.9%). Comparing both groups, 38 of non-displaced children had acute traumatic stress symptoms (10.0%) and 70 displaced children had acute traumatic stress symptoms (18.4%). Displaced children significantly reported acute traumatic stress symptoms than non-displaced children ($\chi^2= 12.8$, df = 1, $p<0.001$). No sex differences in acute stress disorder and other subscales in non-displaced children. However, displaced boys were significantly reported more dissociative symptoms than girls ($t=2.23$, $p=0.02$).

Post Hoc Tukey test showed that non-displaced children aged 12-15 years reported more acute post stress disorder than children age less than 11 years and 16-18 years-old ($F= 7.98$, $p=0.001$). Non-displaced children aged 12-15 years were significantly reported more dissociative symptoms than the other two age groups ($F= 5.12$, $p=0.007$). Meanwhile, there were no significant differences in acute stress disorder symptoms and age group in non-displaced children ($F= 0.21$, $p=0.88$).

3.3.2 Relationship between total traumatic events reported by children and total acute traumatic stress symptoms

Pearson correlation coefficient test was conducted to find the relationships between

traumatic events and post-traumatic stress disorder for displaced and non-displaced children. For displaced children, there were significant association between total traumatic events reported by children and total acute traumatic stress symptoms ($r=0.17$, $p = 0.01$), dissociative symptoms ($r=0.18$, $p = 0.001$), and hyperarousal symptoms ($r=0.27$, $p = 0.001$). For non-displaced children, there were significant association between total traumatic events reported by children and total acute traumatic stress symptoms ($r=0.30$, $p = 0.001$), dissociative symptoms ($r=0.26$, $p = 0.001$), re-experiences symptoms ($r=0.14$, $p = 0.001$), and hyperarousal symptoms ($r=0.45$, $p = 0.001$) Table 5.

3.3.3 Predictors of a diagnosis of acute stress disorder (ASD) in the aftermath of trauma

In a multivariate regression model, each traumatic event was entered as an independent variable, with total acute stress reactions scores as the dependent variable for displaced and non-displaced children. For non-displaced children, four traumatic events were significantly associated with total acute stress disorder: threaten of killing of closed relative in front of him ($B=0.17$, $p=0.02$), being arrested during the land incursion ($B=0.20$, $p=0.003$), hearing killing of a friend ($B=0.16$, $p=0.001$), personal threat of killing by the army ($B=0.16$, $p=0.01$).

For displaced children, four traumatic events were significantly associated with total acute stress disorder: threaten by shooting ($B=0.14$, $p=0.04$), deprivation from water or electricity during detention at home ($B=0.21$, $p=0.002$), being arrested during the land incursion ($B=0.23$, $p=0.001$), hearing killing of a friend ($B=0.16$, $p=0.001$), witnessing firing by tanks and heavy artillery at own home ($B=0.16$, $p=0.02$).

4. DISCUSSION

This is the first study to examine predictors of a diagnosis of acute stress disorder (ASD) in the aftermath of trauma in a sample of children and adolescents after 51 days of war in Gaza on 2014 summer time. The study showed that the most commonly reported traumatic events experienced by both groups (displaced and non-displaced) during the last war were hearing shelling of the area by, hearing the loud voice of Drones, and watching mutilated bodies in TV.

Displaced children reported significantly traumatic event such as forced to leave you home with family members due to shelling, receiving pamphlets from airplane to leave their home at the border and to move to the city center, threatened by telephone to leave the home for bombardment of home, destruction of their personal belongings during incursion. Such traumatic events were reported previously in Gaza Strip in the last 10 year [14,17,18].

Table 1. Demographic characteristics of sample (N = 381)

Variable name	Non-displaced		Displaced	
	No.	%	No.	%
Child sex				
Boys	73	38.4	94	49.2
Girls	117	61.6	97	50.8
Age range from 7-18 years with mean 11.86 y (SD = 2.53)				
Less than 11 years	90	47.4	69	36.1
12-14 years	80	42.1	103	53.9
15-18 years	20	10.5	19	9.9
Area of residence				
North Gaza	69	36.3	125	65.4
Gaza	108	56.8	66	34.6
Middle area	13	6.8	0	0.0
Number of siblings				
Less than 4	45	23.7	27	14.1
5-7	93	48.9	77	40.3
8 and more	52	27.4	87	45.5
Monthly family income				
Less than 300 US \$	153	80.5	173	90.6
301-750 US \$	22	11.6	15	7.9
751-1000 US \$	12	6.3	1	.5
More than 1000 US \$	3	1.6	2	1.0

Table 2. Percentage of traumatic experiences by both groups of total sample (No. = 381)

Traumatic events	Non-displaced		Displaced	
	No.	%	No.	%
Hearing shelling of the area by artillery	186	48.80	187	49.10
Hearing the loud voice of Drones	181	47.50	184	48.30
Watching mutilated bodies in TV	175	45.90	180	47.20
Inhalation of bad smells due to bombardment	146	38.30	167	43.80
Deprivation from water or electricity during detention at home	105	27.60	137	36.10
Hearing killing of a friend	93	24.40	147	38.60
Witnessing firing by tanks and heavy artillery at neighbours homes	93	24.40	147	38.60
Forced to leave you home with family members due to shelling	91	23.90	127	33.30
Threaten by telephone to leave the home for bombarment of home	88	23.10	170	44.60
Witnessing assassination of people by rockets	74	19.40	110	28.90
Receiving pamphlets from airplane to leave your home at the border and to move to the city centers	62	16.30	112	29.40
Threaten by shooting	54	14.20	168	44.10
Hearing killing of a close relative	48	12.60	128	33.60
Destroying of your personal belongings during incursion	46	12.10	79	20.70
Witnessing shooting of a close relative	39	10.20	109	28.60
Witnessing shooting of a friend	32	8.40	58	15.20
Threaten of killing of your closed relative in front of you	31	8.10	63	16.50
Witnessing firing by tanks and heavy artillery at own home	21	5.50	56	14.70
Witnessing killing of a friend	20	5.20	90	23.60
Personal threat if killing by the army	19	5.00	56	14.70
Physical injury due to bombardment of your home	19	5.00	30	7.90
Threatened with death by being used as human shield by the army to move from one home to home	16	4.20	40	10.50
Witnessing arrest of a friend	16	4.20	38	10.00
Shot by bullets, rocket, or bombs	14	3.70	25	6.60
Witnessing killing of a close relative	14	3.70	26	6.80
Being arrested during the land incursion	12	3.10	47	12.30
Witnessing arrest of a close relative by the army	10	2.60	27	7.10
Being arrested during the land incursion	8	2.10	18	4.70

Table 3. Percentage of acute traumatic stress symptoms

	No/ Little	Sometimes	Much/ most of the time
1. Intrusive distressing memories of event	65.42	12.19	22.39
2. Recurrent distressing dreams	47.51	19.65	32.84
3. Flashbacks/reliving	65.92	14.93	19.15
4. Intense distress at reminders	23.38	21.89	54.73
5. Numbing, detachment, reduced responsiveness	40.55	14.93	44.28
6. Altered sense of reality	33.08	20.65	46.27
7. Inability to remember important aspect(s) of event	33.92	19.2	46.88
8. Avoidance of thoughts, conversations, feelings	41.79	22.89	35.32
9. Avoidance of activities, places, physical reminders	45.02	18.66	36.07
10. Sleep disturbance	40.3	20.4	39.3
11. Hypervigilance	42.29	20.15	37.31
12. Irritable or aggressive behavior	36.07	16.67	47.26
13. Exaggerated startle response	30.85	16.42	52.74
14. Agitation or restlessness	38.31	15.42	46.27

Table 4. Mean and standard deviation of acute stress disorder in both groups (No. = 381)

		N	Mean	Std. deviation	Mean deviation	t	p
Total acute traumatic stress symptoms	Non displaced	190	4.64	3.20	-1.90	-5.71	.001
	Displaced	191	6.54	3.30			
Dissociative symptoms (Criterion B)	Non displaced	190	.48	.73	-.53	-6.17	.001
	Displaced	191	1.01	.92			
Re-experiencing symptoms (Criterion C)	Non displaced	190	1.65	1.36	-.49	-3.62	.001
	Displaced	191	2.14	1.28			
Avoidance of the traumatic stimuli symptoms (Criterion D)	Non displaced	190	.63	.78	-.19	-2.30	.02
	Displaced	191	.82	.83			
Hyperarousal symptoms (Criterion E)	Non displaced	190	1.87	1.65	-.68	-4.02	.001
	Displaced	191	2.55	1.63			

Table 5. Pearson correlation coefficients between in the traumatic events and acute traumatic stress disorder among displaced and non-displaced children

	Displaced	Non-displaced
	Total traumatic events	
Total traumatic events	-	-
Total acute stress	.17*	.40**
Dissociative symptoms	.18*	.26**
Re-experiencing symptoms	.06	.14*
Avoidance of the traumatic stimuli symptoms	.40	.06
Hyperarousal symptoms	.27**	.45**

* $p=0.05$, ** $p = 0.01$, *** $p = 0.001$

Palestinian children reported mean of 11.23 traumatic events; displaced children reported more traumatic events than non-displaced ones. There were significant differences between males and females in reporting traumatic events, children aged 12-15 years reported more traumatic events than less than 11 years and 15-18 years. Others found that exposure to war may include various traumatic events, such as exposure to bombings or air raids, physical injury, witnessing violence, loss of loved ones, displacement, and disruption of routine life, lack of educational structure, living in poor living conditions, and living with distressed adults [19].

This study showed that the most common acute stress traumatic symptoms reported by children were had spontaneous or cued recurrent, involuntary and intrusive distressing memories of the event, had exaggerated startle response, and were irritable, angry or aggressive behavior, had intense or prolonged psychological distress or physiological reactivity at exposure to internal or external cues that symbolize or resemble an aspect of the traumatic event. Others found a high number of somatic complaints and memory problems among children (aged 10–14) exposed to war in Sri Lanka [20]. In Kuwait, another study

reported an association between exposure to war-related trauma and poor subjective ratings of health and sleep quality among children aged 9 to 12 years living in Kuwait [21].

Our study showed that 28.4% of children reported acute traumatic stress symptoms. Displaced children significantly reported acute traumatic stress symptoms than non-displaced children. No statistically significant difference in acute stress according to sex. In our study, children aged 12-15 years reported more acute stress reactions than children who were less than 11 years and 15-18 years.

Others reported prevalence rates for ASD which varied widely from 7% to 33% based on the type of precipitating trauma and differences in assessment methods [5,22]. This study's prevalence rate of ASD was less than the rate found in paediatric surgical children and adolescents injured in the Wenchuan earthquake of China (the prevalence of ASD was 54.3%). There were no significant differences among the age groups about the severity of ASD symptom. The proportions of ASD-positive were 44% in males and 63.6% in females that showed significant difference [23]. Forced migration,

involving displacement of individuals, families, and entire communities from their homes and lands, is one of the most psychologically devastating consequences of persecution, armed conflict, generalized violence, and other types of Human rights violations. Others postulated that migrants are repeatedly exposed to potentially traumatic events (PTEs) and experience crippling losses that begin even before they are dispossessed of their homes, possessions, livelihoods, communities, and systems of social support [24,25,26,27].

This study showed that there was significant association between total traumatic events reported by children and total acute traumatic stress symptoms, re-experiencing symptoms, and hyperarousal symptoms, but not with avoidance symptoms. Such findings were consistent with most of the studies which showed causal relationship between trauma and post traumatic symptoms. Non existence relationship between avoidance symptoms and acute post traumatic disorder could be the results of using avoidance as coping by children immediately after exposure to war traumatic events. Such an association was found in a study on the experiences of Palestinian children (aged 1–15) residing in the West Bank, witnessing traumatic events such as murder, physical abuse, destruction of property, and threats was associated with PTSD symptoms [28].

Five traumatic events were significantly associated with total acute stress disorder: deprivation of going to the toilet and leaving the room at home because of firing and shelling in the area; loss of a friend or relative; destruction of personal belongings and witnessing firing by tanks and heavy artillery at own home; being threatened of death by being used as a human shield by the army; and shot by bullets, rockets, or bombs. Studies showed that indirect exposure through the media and through the climate of threat of war also put children at risk of mental health problems. For example, a study was conducted to examine the responses of children (aged 14–17 years) following a terrorist attack in a school in Beslan, Russia during which a school with 1,300 adults and children was taken hostage and resulted in the death of 329 people and the injury of hundreds [29]. The findings of that study indicated that there were no significant differences in psychological, emotional, and behavioral responses between those directly and indirectly exposed to the attack, indicating that

both direct and indirect exposure to combat put children at risk.

5. RECOMMENDATIONS

This current study showed that Palestinian children and adolescents were at risk of developing acute stress disorder symptoms after exposure to war. Displaced children were more traumatized and had more symptoms than non-displaced children. Such findings highlight the need for mental health services for displaced populations, and not only for those directly traumatized by war, but also for the displaced populations to enable them to cope with the stress of isolation and social dislocation, and severe emotional or mood disturbances. We had to empower working NGOs, governmental, and UNRWA to establish multi-disciplinary mental health teams with psychosocial counselors, physical and occupational therapists and medical practitioners. They should work with primary care providers to train them in basic mental health assessment and interventions. They should develop outreach teams of psychosocial workers that incorporate trusted members of the displaced community. In addition, resources had to be identified for acute and chronic mental health care in different service provider's locations in the Gaza Strip. The teams had to have models of multi-disciplinary mental health care in acute crisis situations and had to go on to train other groups in the region.

6. STUDY LIMITATIONS

This study had some limitations. One of the limitations was that the sample of displaced and non-displaced children were exposed to similar traumatic events which make analysis between the two groups in absence of another control group in the area very difficult and may lead to bias.

Also, such study which follow immediately the war and traumatic events make it very difficult to study other risk and protective factors in Palestinian society such as coping, social support, family support, commodity with other psychiatric problems, and previous experiences.

7. CONCLUSION

Our study results showed that Palestinian children and adolescents were at risk of developing acute stress disorder symptoms after

exposure to war on Gaza. Displaced children were more traumatized and had more symptoms than non-displaced children. Such findings highlight the need for increasing mental health services for displaced populations in shelters, besides the governmental and other Non-governmental support of the families at risk.

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ETHICAL APPROVAL

It is not applicable.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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