

DOI: 10.21767/1791-809X.1000621

# The Relationship between War Trauma, PTSD, Anxiety and Depression among Adolescents in the Gaza Strip

Hana'Ahmed Qeshta<sup>1</sup>, Ahmed M AL\_Hawajri<sup>2</sup> and Abdelaziz M Thabet<sup>3\*</sup>

<sup>1</sup>MCMH-Ministry of Education, Palestine

<sup>2</sup>Director of Counseling Unit, Ministry of Education, Palestine

<sup>3</sup>Department of Child and Adolescent Psychiatry, School of Public Health, Al Quds University, Gaza, Palestine

\*Corresponding author: Abdelaziz M Thabet, Department of Child and Adolescent Psychiatry, School of Public Health, Al Quds University, Gaza, Palestine, Tel: 0599604400, 2834292; E-mail: abdelazizt@hotmail.com

Received date: 01 August 2018; Accepted date: 04 February 2019; Published date: 11 February 2019

Copyright: © 2019 Qeshta H, et al. This is an open-access article distributed under the terms of the creative commons attribution license, which permits unrestricted use, distribution and reproduction in any medium, provided the original author and source are credited.

Citation: Qeshta H, Hawajri AMA, Thabet AM (2019) The Relationship between War Trauma, PTSD, Anxiety and Depression among Adolescents in the Gaza Strip. Health Sci J Vol.13.No.1:621.

## Abstract

**Aim:** The study aimed to investigate the relationship between war trauma and PTSD (Post-Traumatic Stress Disorder), anxiety and depression problems among secondary school students in Gaza Strip.

**Method:** The study sample consisted of 408 randomly selected secondary school students (204 boys and 204 girls). Adolescents were interviewed using socio-demographic questionnaire, Gaza Traumatic Events Checklist, Birlson Self-Rating Depression Scale, and Revised Children's Manifest Anxiety Scale.

**Results:** The results showed that the most common reported traumatic experiences by adolescents were watching mutilated bodies in TV (93.1%), hearing shelling of the area by artillery (92.4%), hearing the loud voice of drones (90.4%), forced to leave you home with family members due to shelling (67.6%), and Inhalation of bad smells due to bombardment (67.6%). Mean traumatic events were 10.

There were statistically significant differences toward boys. Our results showed that 25.5% showed partial PTSD and 16.4% of children showed full criteria of PTSD. PTSD was more in children with family monthly income less than 1700 NIS. Using cut-off point of the scale, 92 of children reported anxiety (22.2%). There were statistically significant differences in anxiety in favour of girls. Anxiety was more in children from poor families (monthly income less than 1700 NIS). Using cut-off point of the scale, 139 of children reported depression (34.1%). Depression was more in children from poor families (monthly income less than 1700 NIS).

The results showed that there was significant correlation between total traumatic events reported by children and

total PTSD, re-experiencing, avoidance and arousal. There was statistical correlation between anxiety and depression, anxiety and PTSD and there was statistical significant correlation between PTSD and depression.

**Keywords:** Adolescents; Anxiety; Depression; Gaza Strip; PTSD; Trauma

## Introduction

The extended effects of wars and conflicts depend on a complex interaction of different factors that include demographic considerations and the specific nature of the individual's war and traumatic experiences [1]. However, research on war conflicts and other survivors of traumatic experiences found that more time spent in potential danger can lead to increased levels of trauma and subsequently affecting their mental health [2-4]. The Palestinians generally and Gazans' people specially experienced a new wide range of war trauma that affected everything in their life which reflected negatively on their mental health. During the war many of the Gazans' people lost their families, children and many close relatives in addition to some families completely lost. Furthermore, they lost their work, possessions, cultural continuity and places they love which considered one of the most significant factors in mental health instability [5-7].

The DSM-IV-TR (Diagnostic and Statistical Manual of Mental Disorders-Fourth Edition (Text Revision)) has made some modifications, which have attempted to compensate for the difference in symptom presentation in children and adolescents. These current criteria focus on re-experiencing, avoidance and hyperarousal; however even these broad categories of criteria may manifest themselves differently in children which then may lead to failure to fully capture PTSD symptoms displayed in a younger population [8].

While, Khamis in study of Palestinian children found that 34.1% of the children diagnosed as Post-Traumatic Stress

Disorder (PTSD) [9]. Moreover, Elbedour et al. [10] in study of Palestinian children found that 68.9% were reported as PTSD cases. Furthermore, Thabet et al. [5] in study of Palestinian children and families, showed that children experienced a mean number of 8 traumatic events, 138 children out of 197 (70.1%) were likely to present with PTSD, 33.9% were rated as having anxiety symptoms of likely clinical significance, 42.7% were rated as having significant mental health morbidity by their parents. Scrimin et al. [11] in study of 58 school-age children three years after the terrorist attack in Beslan, Russia in 2004. The analysis of the UCLA PTSD Index data revealed that overall, 17 (29.3%) children met criteria for PTSD three years after the terrorist attack. Of these, 15 had been directly exposed to the attack (50% of directly exposed group) and only 2 had been indirectly exposed to the attack (7% of indirectly exposed group) and no significant differences were found in relation to gender. Gender differences in rates of exposure and trauma-related symptom profiles have been investigated. Women are more frequently exposed to childhood sexual abuse, domestic violence and sexual assault, whereas men are more likely to have experienced natural disasters, motor vehicle accidents, and other accidents [12]. Women often exhibit higher rates of PTSD and some other trauma-related symptoms, such as internalizing disorders (i.e., anxiety and depression) and somatic complaints than men who experience more externalizing disorders (i.e., conduct and substance use) [12,13]. Thus, women may be more vulnerable to developing, or more willing to report experiencing, some adverse trauma-related symptoms than men. Moreover, Thabet et al. [13] in study sample consisted of 358 adolescents aged 15 to 18 years old age. The study showed that, the mean traumatic events reported by adolescents was 13.34. The results showed the mean total anxiety was 41.18, obsessive compulsive subscale was 8.90, generalized anxiety subscale was 4.46, social phobia was 6.99, separation anxiety was 6.16, physical injury fears were 5.48 and panic/Agoraphobia was 5.4. The results showed that girls had more anxiety problems than boys including all anxiety subscales. Regard PTSD, the study showed that 34.31% reported symptoms meeting criteria for partial PTSD, while 29.8% reported symptoms meeting criteria for full PTSD according to DSM-IV-TR. The results showed that girls reported more PTSD than boys. Similarly, study of children after war on 2014 on Gaza indicated that approximately 30 percent of the Palestinian children who were exposed to higher levels of war traumas have developed PTSD with excess risk for comorbidity with other disorders such as emotional symptoms and neuroticism [14]. Lee et al. [15] in study of the prevalence and associated factors of Post-Traumatic Stress Disorder (PTSD) symptoms among a sample of 57 students (29 boys and 28 girls) who survived the Sewol ferry disaster 20 months after that disaster. The results showed that 26.3% of participants were classified in the clinical group by the Child Report of Post traumatic Symptoms score, PTSD symptoms were positively correlated with the number of exposed traumatic events. Moreover, Thabet et al. [16] in study 251 children from 3 summer camps aged 6-16. The study showed that children commonly reported traumatic events such as hearing shelling of the area by artillery, hearing the sonic sounds of jetfighters and seeing images of dead and injured people on TV. Mean

PTSD symptoms was 18.37, intrusion mean was 8.98, avoidance symptoms subscale mean was 9.49. Almost sixty percent of children had posttraumatic stress disorder symptoms, 21.9% of children had anxiety and 50.6% had depression. Numbers of traumatic events was associated with PTSD, avoidance, arousal symptoms, anxiety, and depression. Silwala et al. [17] in a study assessed the prevalence of Post-Traumatic Stress Symptoms (PTSS) and depressive symptoms and explored potential risk factors among adolescents exposed in 2015 to two major earthquakes in Nepal. They were 893 students aged 11–17 in school grades 7–10. They lived in two districts affected by the earthquakes: Sindhupalchok and Kathmandu. The prevalence of PTSS in the Sindhupalchok and Kathmandu districts were 39.5% and 10.7% and depression symptoms were 40.4% and 23.2% respectively.

More recently, Thabet et al. [7] in study of 61 children from 2 community centers in one refugee camp in the Gaza Strip. This study showed that children commonly reported traumatic events such as watching pictures of killed and wounded people on TV (90.7%), hearing the shootings and bombardment due to fighting in the streets (85.2%), and Hearing arrest or kidnapping of someone or a friend (77.8%). For PTSD, 29.6% of children were considered as PTSD, 24.1% of children reported anxiety disorder and 22.2% of children reported depression. The results showed that there was significant association between total traumatic events reported by children and PTSD and total anxiety. In addition, total anxiety was associated with total PTSD.

The last war on Gaza Strip was in August 2014, it was considered the most destructive one in comparison with two previous wars, which lasted for 51 day. This war caused killing 2,145 Palestinians, 578 of them were children and adolescents, about 11,000 others had been wounded, more than 500,000 Palestinians internally displaced at the height of the hostilities, over 100,000 still displaced, and approximately 18,000 housing units destroyed or severely damaged (OCHA, 2014) <https://www.ochaopt.org/reports/situation-reports>.

The study objectives were 1) To identify the levels of war trauma related to secondary school students in Gaza Strip 2) To find prevalence of depression, PTSD, and anxiety among secondary school students in Gaza Strip 3) To examine the relationship between war trauma, PTSD, depression and anxiety among secondary school students in Gaza Strip.

## Method

### Participants

A simple random sample of 408 secondary school students from governmental schools was taken using the proportional ratio between the gender and governorates. Out of 408 students, 204 (or 50%) are female and 204 (or 50%) are male. 135 students (33.1%) aged 16 years old, 138 students (33.8%) aged 17 years old and 135 students (33.1%) were at 18 years old.

The researcher expected that the study will take 10 months starting from October 1<sup>st</sup> 2014 till August 1<sup>st</sup> 2015.

## Instruments

The researcher will develop the study instruments according to literature review and will benefit from other ready tools.

## Socio-demographic questionnaire

Socio-demographic Questionnaire consisted of variable that contained in the study that include age, sex, place of residence, number of sibling, family income and other variables that may affect the psychological conditions of the children.

**Gaza Traumatic Events checklist (51 days war):** This scale contains 28 item, that checked by "yes" or "no" and which measures the traumatic events that children experience during wars and it helps identify the types of traumatic events that encounter the Palestinian children in Gaza strip. The scoring of the scale ranged between 0 for those who choose "No" and 28 for those who choose "Yes". In this study, the Cronbach's Alpha was 0.81 [14].

**PTSD Scale for DSM-IV (Arabic version):** The items of the A PTSD scale indices are keyed to DSM-IV criteria and can provide preliminary PTSD diagnostic information. Self-reports for children and adolescents exist, as well as a parent report of PTSD symptoms [5]. The adolescent Version (for adolescent aged 13 years and older) contains a total of 22 questions, have also been administered in school classroom settings. A 5-point Likert scale from 0 (none of the time) to 4 (most all the time) is used to rate PTSD symptoms. Only 17 items were included in the total score because two items were not DSM-IV criteria and three items were repeated symptoms. Although there is limited information about the specific cut-off score for a particular trauma type or population, a cut-off score of 38 has been proposed in the literature Steinberg. In this study, the Cronbach's Alpha was 0.83.

**Depression Self-Rating Scale for Children–DSRS:** The DSRS-C is simple to use. It is brief and only takes a child a few minutes to complete. Children with poor reading skills or short-term auditory memory difficulties may require help in understanding the longer items, but the scoring patterns of younger children have been found to be very similar to those of their elder peers [18,19]. Explain that there is no right or wrong answer and that the important thing is to say how they have really felt. They were asked to choose whether the statement applied to them "most of the time", "sometimes" or "never". Item responses are simply scored in the direction of disturbance, i.e. depressive items score 2, "sometimes" items score 1, and non-depressive items score 0. For items 1, 2, 4, 7, 8, 9, 11, 12, 13 and 16 'mostly' scores 0, 'sometimes' scores 1 and 'never' scores 2. For items 3, 5, 6, 10, 14, 15, 17 and 18 'mostly' scores 2, 'sometimes' scores 1 and 'never scores 0. The item scores are summed to give the total score. In this study, the Cronbach's Alpha was 0.83 [19].

**Revised Children's Manifest Anxiety Scale (RCMAS):** RCMAS is designed to measure symptoms of generalized anxiety in children and youths. The 37 scale items are answered "Yes" or "No". Nine items comprise a Lie scale, thus symptom severity scores range from 0-28. The clinical cut-off score has been set to 18 [20]. Reliability by Cronbach's alpha has been found to be high (0.85) [21]. A high correlation ( $r=0.85$ ) has been found between RCMAS and other instruments measuring trait anxiety [22]. The Arabic version of RCMAS has been applied in several research projects conducted in Arabic Palestinian population [5,23]. The reliability of our Arabic version of the depression scale in this study was  $\alpha=0.86$ ; split half =0.80.

## Study Procedure

An ethical approval was approved for from School of Public Health at Al-Quds University and Ethical Helsinki Committee. Another letter obtained from the Ministry of Education was granted. Furthermore, A consent form was taken from the respondents (students) after clarifying the aim of the study and its objectives and grantee that they protected from any harm resulting from their agree or disagree for participation. Also, the researcher grantee that the collected information will be used for scientific research only and will be kept for this purpose. Data collection was conducted by 5 professionals with previous experience in data collection. A list of involved schools were randomly selected and were given to field workers in each area with age, sex, and place of residence of the students. In the selected schools, a random three classes were chosen and from the registration book of each class, randomly selected names of students were selected.

At the end 408 students from total of 420 study population responded to the interview. They were 204 girls and 204 boys. The students were completed the questionnaires after giving them through instructions by data collectors in the specified schools. Each student completed the questionnaire in 30 minutes. We collect the data from governmental schools during March 2015.

## Statistical Analysis

All analyses were carried out using Statistical Package for the Social Sciences SPSS ver. 23 for data entry and analysis. Frequencies and percentages of trauma, PTSD, anxiety and depression items were calculated. Independent t-test was conducted to find differences between two groups. Pearson's correlation coefficient tested the association between trauma, PTSD, anxiety and depression. Linear regression investigated the association between independent (traumatic events) and PTSD as dependent variable was conducted to find the predictor factors of psychopathology in children. A  $p$ -value  $\leq 0.05$  was considered statistically significant.

## Results

### Socio demographic characteristics of the children and adolescents

The sample consisted of 204 boys (50%) and 204 girls (50%). According to the selection criteria, the age range was 16-18 years, with a mean age of 17 years (SD=0.81). Regard place of residence, 70 of adolescents were from north Gaza (17.2%), 135 live in Gaza area (33.1%), 61 live in Middle area (15%), 94 live in Khan Younis (23%), and 48 live in Rafah area (11.8%). Regard place of residence, 68.9% live in family own house, 4.9% live in rented houses, 1.7% live in camps, and 24.5% live house with extended family. Regard siblings, families were of large size, as 21.1% of the participating families had 4 or less siblings, 48.8% had 5-7 siblings, and 30.1% had 8 or more siblings. Regard family monthly income, 58.8% of the families had a monthly income under 1700 NIS, 16.2% between

1701-2400 NIS, 15.7% had a monthly income 2401-4000 NIS, 9.3% had monthly income more than 4001 NIS. Regard fathers education, 4.8% fathers were uneducated, 22.2% had preparatory school education, 34.4% had elementary education, 29.8% had secondary education, 7.7% had university degree and 1.0% held a post graduate degree. Regard fathers job, 32.4% of fathers were unemployed, 14% were simple workers, 6.1% were skilled workers, 27.7% were civil employee and working, 12% were civil employee not at work and getting salary and 7.8% were merchants. For mothers education, 4.8% of mothers were uneducated, 22.2% had preparatory education, 34.4% had elementary education, 29.8% had secondary education, 7.7% had university degree, 1% held a post graduate degree. Regard mothers job, 88.5% of mothers were housewives, 1.2% were simple workers, 1% were civil employee and working and 7.1% were civil employee not at work and getting salary (**Table 1**).

**Table 1** Socio-demographic information of the children (N=408).

Variable	No	%
<b>Gender</b>		
Male	204	50
Female	204	50
<b>Place of residence</b>		
North Gaza	70	17.2
Gaza	135	33.1
Middle area	61	15
Khan Younis	94	23
Rafah area	48	11.8
<b>Type of residence</b>		
Own	281	68.9
Rented	20	4.9
Camp	7	1.7
With family	100	24.5
<b>No of siblings</b>		
Four and less	86	21.1
Five to seven siblings	199	48.8
Eight and more siblings	123	30.1
<b>Family monthly income</b>		
Less than 1700 NIS	240	58.8
1701-2400 NIS	66	16.2
2401-4000 NIS	64	15.7
More than 4000 NIS	38	9.3
<b>Paternal Job</b>		

Unemployed	132	32.4
Simple worker	57	14
Skilled worker	25	6.1
Civil employee and working	113	27.7
Civil employee not at work	49	12
Merchant	32	7.8
<b>Maternal job</b>		
House wife	361	88.5
Simple worker	5	1.2
Civil employee and working	4	1
Civil employee not at work	29	7.1

### Type and severity of traumatic events

The most common traumatic experiences reported by children were: watching mutilated bodies in TV (93.1%), hearing shelling of the area by artillery (92.4%), hearing the loud voice of drones (90.4%), forced to leave you home with family members due to shelling (67.6%) and Inhalation of bad

smells due to bombardment (67.6%). While, the least common traumatic experiences were: Witnessing arrest of a close relative by the army (10.8%), witnessing arrest of a friend and physical injury due to bombardment of your home (10.3). The study showed that Palestinian children in the Gaza Strip had experienced from 0-28 traumatic events with mean of 10 traumatic events (SD=4.79) (**Table 2**).

**Table 2** Types of traumatic events due to 51 days' war on Gaza in children (N=408).

Traumatic events	Yes		No	
	No.	%	No.	%
Hearing shelling of the area by artillery	394	96.6	14	3.4
Watching mutilated bodies in TV	385	94.4	23	5.6
Hearing the loud voice of Drones	380	93.1	28	6.9
Hearing killing of a friend	322	78.9	86	21.1
Inhalation of bad smells due to bombardment	285	69.9	123	30.1
Witnessing demolition of big buildings	238	58.3	170	41.7
Forced to leave you home with family members due to shelling	238	58.3	170	41.7
Witnessing firing by tanks and heavy artillery at neighbours' homes	235	57.6	173	42.4
Threaten by telephone to leave the home for bombardment of home	217	53.2	191	46.8
Receiving pamphlets from Airplane to leave your home at the border and to move to the city centres	173	42.4	235	57.6
Hearing killing of a close relative	154	37.7	254	62.3
Deprivation from water or electricity during detention at home	138	33.8	270	66.2
Witnessing assassination of people by rockets	113	27.8	294	72.2
Threaten by shooting	107	26.2	301	73.8
Witnessing shooting of a friend	106	26	302	74
Destroying of your personal belongings during incursion	76	18.6	332	81.4
Witnessing shooting of a close relative	75	18.4	333	81.6
Witnessing killing of a friend	69	16.9	339	83.1
Witnessing firing by tanks and heavy artillery at own home	64	15.7	344	84.3

Witnessing killing of a close relative	55	13.5	353	86.5
Threatened with death by being used as human shield by the army to move from one home to home	50	12.3	358	87.7
Witnessing arrest of a friend	39	9.6	369	90.4
Threaten of killing of your closed relative in front of you	39	9.6	369	90.4
Shot by bullets, rocket, or bombs	36	8.8	372	91.2
Personal threat if killing by the army	34	8.3	374	91.7
Witnessing arrest of a close relative by the army	30	7.4	378	92.6
Physical injury due to bombardment of your home	29	7.1	379	92.9
Being arrested during the land incursion	29	7.1	379	92.9

### Differences in traumatic events according to socio-demographic variables

In order to find differences in traumatic events according to socio-demographic variables such as sex, age, place of residence, education, family monthly income a t-independent test was conducted. T-independent test was done in which mean of trauma was independent variable and sex of children was dependent variable. The results showed that the mean traumatic event in boys were 10.91 (SD=4.51) and 9.24 for girls (SD=4.06). There were statistically significant differences toward boys ( $t=3.9$ ,  $p=0.001$ ). There were no statistically significant differences in traumatic events and age of adolescents.

### PTSD symptoms

The most common post traumatic reactions in adolescents were: recurrent and intrusive distressing recollections of the

event, including images, thoughts, or perceptions (49%), acting or feeling as if the traumatic event were recurring (44.8%), intense psychological distress at exposure to internal or external cues that symbolize or resemble an aspect of the traumatic event (34.8%) (Table 3).

### Means and standard deviations of PTSD

The results showed mean total scores of PTSD was 25.92 (SD=11.83), mean re-experiencing symptoms was 9.63 (SD=4.69) mean avoidance was 8.39 (SD=4.89) and mean arousal was 7.90 (SD=4.69) (Table 4).

**Table 3** Post-traumatic distress symptoms in children (N=408).

	Scale items	Never/ Rarely	Sometimes	Much/ often
1	Recurrent and intrusive distressing recollections of the event, including images, thoughts, or perceptions.	19.9	31.1	49
2	Recurrent distressing dreams of the event	51.9	27.9	20.1
3	Acting or feeling as if the traumatic event were recurring	28.9	26.2	44.8
4	Intense psychological distress at exposure to internal or external cues that symbolize or resemble an aspect of the traumatic event	40	25.2	34.8
5	Physiological reactivity on exposure to internal or external cues that symbolize or resemble an aspect of the traumatic event	61.3	14.2	24.6
6	Efforts to avoid thoughts, feelings, or conversations associated with the trauma	40.7	26.7	32.6
7	Efforts to avoid activities, places, or people that arouse recollections of the trauma	52.2	19.9	27.9
8	Inability to recall an important aspect of the trauma	64.2	18.6	17.1
9	Markedly diminished interest or participation in significant activities	63.2	19.4	17.4
10	Feeling of detachment or estrangement from others	74.1	13	13
11	Restricted range of affect (e.g., unable to have loving feelings)	81.7	9.1	9.3

12	Sense of a foreshortened future (e.g., does not expect to have a career, marriage, children, or a normal life span)	64.7	14.7	20.6
13	Difficulty falling or staying asleep	60.8	17.9	21.3
14	Irritability or outbursts of anger	56.6	21.8	21.5
15	Difficulty in concentration	49.8	24	26.2
16	Hyper vigilance (On edge been easily distracted or had to stay)	45.1	22.1	32.9
17	Exaggerated startle response	51	20.1	28.9

**Table 4** Means and Standard deviations of PTSD.

	Mean	Std. Deviation
Total PTSD	25.92	11.83
Re-experiencing	9.63	4.69
Avoidance	8.39	4.89
Arousal	7.9	4.69

## Prevalence of PTSD

According to DSM-IV diagnosis method of PTSD of summing of (one re-experiencing, 3 avoidance and 2 arousal symptoms). The results showed that 129 of children (31.6%) showed no PTSD, 108 of children (26.5%) showed at least one criteria of PTSD (B or C or D), 104 showed partial PTSD (25.5%) and 67 of children showed full criteria of PTSD (16.4%).

**Differences between different socio-demographic variables such as sex, family monthly income and PTSD:** t independent test was performed to find sex differences in PTSD and subscales. The results showed that there were no statistically significant differences in total PTSD scores (Mean=26.98 girls vs. 24.87 for boys) ( $t=1.8$ ,  $p=0.07$ ) and also no significant for avoidance, and arousal subscales, but the girls reported more re-experiencing symptoms than boys ( $t=5.16$ ,  $p=0.001$ ). The

results showed that there were no significant differences in total means of PTSD age of children, place of residence. However, Post-hoc analysis using Tukey's statistical test showed that PTSD was more in children with family income less than 1700 NIS.

## Anxiety symptoms

The study showed that the most common anxiety symptoms reported by adolescents were: I get nervous when things do not go the right way for me (82.1%), I worry about what is going to happen (64.5%), It is hard to keep my mind on my school work (46.6%), I worry about what other people think about me (46.8%) and I wiggle in my seat a lot (45.6%). Using cut-off point of the scale, 92 of children reported anxiety (22.2%) (Table 5).

**Table 5** Anxiety symptoms in children (N=408).

		Yes		No	
		No.	%	No.	%
1	I have trouble making up my mind	122	28.5	286	66.8
2	I get nervous when things do not go the right way for me	335	82.1	73	17.9
3	Others seem to do things easier than I can	179	43.9	229	56.1
4	Often I have trouble getting my breath	161	39.5	247	60.5
5	I worry a lot of the time	176	43.1	232	56.9
6	I am afraid of a lot of things	152	37.3	256	62.7
7	I get mad easily	178	43.6	230	56.4
8	I worry about what my parents will say to me	189	46.3	219	53.7
9	I feel that others do not like the way I do things	122	29.9	286	70.1
10	It is hard to get to sleep at night	122	29.9	286	70.1

11	It is hard to keep my mind on my school work	190	46.6	218	53.4
12	I feel alone even when there are people with me	101	24.8	307	75.2
13	Often I feel sick in my stomach	102	25	306	75
14	My feelings get hurt easily	171	41.9	237	58.1
15	My hands feel sweaty	124	30.4	284	69.6
16	I am tired a lot	121	29.7	287	70.3
17	I worry about what is going to happen	263	64.5	145	35.5
18	Other children are happier than I	140	34.3	268	65.7
19	I have bad dreams	123	30.1	285	69.9
20	My feelings get hurt easily when I am fussed at	203	49.8	205	50.2
21	I feel someone will tell me I do things the wrong way	184	45.1	224	54.9
22	I wake up scared some of the time	128	31.4	280	68.6
23	I worry when I go to bed at night	98	24	310	76
24	I worry about what other people think about me	191	46.8	217	53.2
25	I wiggle in my seat a lot	186	45.6	222	54.4
26	I am nervous	140	34.3	268	65.7
27	A lot of people are against me	133	32.6	275	67.4
28	I often worry about something bad happening to me	269	65.9	139	34.1

**Differences between different socio-demographic variables such as sex, family monthly income and anxiety:** There were statistically significant differences in anxiety according to sex of adolescents in favour of girls ( $X^2=1.71$ ,  $df=2$ ,  $p=0.005$ ). There were no significant differences between the total means of anxiety ( $F=0.01$ ,  $p=0.98$ ) according to age of adolescents.

No significant differences between the total means of anxiety ( $F=1.32$ ,  $p=0.26$ ) according to number of siblings. There were no significant differences between the total means of anxiety and place of residence ( $F=1.304$ ,  $p=0.268$ ). The results showed that there were significant differences between the

total means of anxiety ( $F=3.935$ ,  $p=0.009$ ) according to family income in favor of those who have less than 1700 NIS.

### Depression symptoms

**The study showed that the most common depression symptoms reported by adolescents were:** I like talking with my family (68.4%), I can stick up for myself (63%), and I feel so sad I can hardly stand it (54.9%). Using cut-off point of the scale, 139 of children reported depression (34.1%) (Table 6).

**Table 6** Depression symptoms in children (N=408).

Depression items	Always	Sometime	No
I look forward to things as much as I used to	35.8	52.9	11.3
I sleep very well	40.9	45.1	14
I feel like crying	31.1	46.6	22.3
I like to go out to play	27.5	35.8	36.8
I feel like running away	40.4	33.6	26
I get tummy aches	13.2	45.8	40.9
I have lots of energy	9.3	31.4	59.3
I enjoy my food	40.2	51.7	8.1
I can stick up for myself	63	31.4	5.6
I think life isn't worth living	27.7	42.2	30.1

I am good at the things I do	42.6	51	6.4
I enjoy the things I do as much as I used to	29.9	52.5	17.6
I like talking with my family	68.4	23.3	8.3
I have bad dreams	50.7	40	9.3
I feel very lonely	52.7	33.6	13.7
I am easily cheered up	42.4	43.4	14.2
I feel so sad I can hardly stand it	54.9	35.3	9.8
I feel very bored	23.5	53.9	22.5

**Differences between different socio-demographic variables such as sex, family monthly income and depression:** t independent test was performed to find sex differences in Depression. The results showed that there were statistically significant differences in total Depression scores toward boys (mean=14.07 boys vs. 15.16 for girls) (t=2.32, p=0.02). There were no significant differences between the total means of depression and number of siblings.

The results showed that there were significant differences between the total means of depression (F=5.91, p=0.001) according to family income in favor of those who have less than 1700 NIS.

Post-hoc analysis according to Tukey’s statistical test was done and indicated; the total means of depression according to family income “Less than 1700 NIS, 1700-2400 NIS, 2410-4000 NIS, 4001 and more” as shown in the **Table 7**, there

were negative correlation between depression and family income” toward families with family income less than 1700NIS. We can find that most of population their family monthly income less than 1700 NIS

**Relationship between total trauma and PTSD, anxiety and depression in adolescents:** Pearson correlation test was done to find the association between total trauma and PTSD, anxiety and depression in adolescents. The results showed that there was significant correlation between total traumatic events reported by children and total PTSD (r=0.26, p=0.001), re-experiencing (r=0.22, p=0.001), avoidance (r=0.26, p=0.001), and arousal (r=0.18, p=0.01). There was statistical correlation between anxiety and depression (r=0.60, p=0.001), anxiety and PTSD (r=0.61, p=0.001) and there was statistical significant correlation between PTSD and depression (r=0.47, p=0.001) (**Table 7**).

**Table 7** Pearson correlation test between total trauma and PTSD, anxiety and depression in adolescents.

	1	2	3	4	5	6
<b>Trauma</b>	1					
<b>Depression</b>	0.09	1				
<b>Anxiety</b>	0.09*	0.60**	1			
<b>PTSD</b>	0.26**	0.47**	0.61**	1		
<b>Re-experiences</b>	0.20**	0.28**	0.37**	0.72**	1	
<b>Avoidance</b>	0.22**	0.26**	0.30**	0.69**	0.38**	1
<b>Hyperarousal</b>	0.14**	0.45**	0.58**	0.75**	0.46**	0.43**

\*Statistical correlation between anxiety and depression  
 \*\*Statistical correlation between anxiety and PTSD

**Prediction of PTSD by traumatic events**

In order to test the predictive value of specific traumatic events on PTSD symptoms, total PTSD was entered as the dependent variable in logistic regressions, with 28 types of traumatic events as the covariates. The events that were significantly associated with PTSD were: receiving pamphlets from Airplane to leave your home at the border and to move to the city centers (β=0.12, p=0.01), witnessing arrest of

someone or a friend (β=0.11, p=0.01), hearing killing of a friend (β=0.14, p=0.01), threaten by telephone to leave the home for bombardment of home (β=0.12, p=0.01), forced to leave you home with family members due to shelling (β=0.14, p=0.01), deprivation from water or electricity during detention at home(β=0.12, p=0.01), hearing the loud voice of Drones (β=0.11, p=0.01) (R2=0.12, F=9.3, p=0.001) (**Table 8**). In order to test the predictive value of specific traumatic events on

PTSD symptoms, total PTSD was entered as the dependent variable in logistic regressions, with 28 types of traumatic

**Table 8** Regression analysis of PTSD and traumatic events.

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
	B	Std. Error	Beta	Lower Bound		Upper Bound	
Constant	13.21	2.52		5.25	0.001	8.26	18.16
Receiving pamphlets from Airplane to leave your home at the border and to move to the city centres	2.83	1.17	0.12	2.42	0.02	0.53	5.13
Hearing killing of a friend	3.18	1.41	0.11	2.25	0.02	0.4	5.95
Threaten by telephone to leave the home for bombardment of home	3.33	1.15	0.14	2.89	0.001	1.06	5.6
Forced to leave you home with family members due to shelling	2.81	1.17	0.12	2.4	0.02	0.51	5.1
Deprivation from water or electricity during detention at home	3.03	1.22	0.12	2.49	0.01	0.63	5.42
Hearing the loud voice of Drones	4.94	2.22	0.11	2.23	0.03	0.58	9.29

## Discussion

The most common traumatic experiences reported by children were: watching mutilated bodies in TV (93.1%), hearing shelling of the area by artillery (92.4%), hearing the loud voice of drones (90.4%), forced to leave you home with family members due to shelling (67.6%) and Inhalation of bad smells due to bombardment (67.6%). While, the least common traumatic experiences were: witnessing arrest of a close relative by the army (10.8%), witnessing arrest of a friend and physical injury due to bombardment of your home (10.3). The researcher proposed that for continuous exposure for direct effects of war, since the Palestinian people have been suffering for long time of wars 2008/2009; 2012; and the last one was on 2014. So the population generally and young children specially have a compound effects of these wars and suffer from different types of war trauma that affect their psychological condition.

The results of current study consistent with the results of Thabet et al. [13], they showed that the most common traumatic experiences reported by children were; 1) Hearing loud noises of drones; 2) Hearing shelling of the nearby area by artillery.; 3) Hearing the sonic sounds of fighter jets; 4) Watching mutilated bodies on television. However, the results of the current study consistent with the results of Al-Arjani et al. [24] that found 92.8% of martyrs' children witnessing photos of martyrs' and injured in TV, 71.6% witnessing raids attack of houses and streets by missiles and 66.8% exposure to long hours wait on checkpoints. And consistent with the study results of Thabet et al. [5] which showed that both children and parents reported a high number of experienced traumatic events. Both war trauma and parents' emotional responses were significantly associated with children's PTSD and anxiety symptoms.

Boys statistically significantly reported severe traumatic events than girls. The researchers hypothesized that for long-term exposure of wars and conflicts in the area that contributed for different levels of trauma among children. The results showed than mean traumatic event in boys were 10.91 (SD=4.51) and 9.24 for girls (SD=4.06), there were statistically significant differences toward boys. The researcher attributed that for mobility of male children and their connection to fathers more than the female children did. The male children move freely and go here and there, but female children connected to their mothers and stay at home. The results were consistent with the study of Thabet et al. [5] that showed that boys reported more exposure to severe traumatic events than girls did. Moreover, the authors reported that Palestinian children in the Gaza Strip had experienced from 3-17 traumatic events with mean of 7.5 traumatic events.

Moreover, our study showed that prevalence of PTSD was 16.4%. Moreover, Dawas et al. [25] in study a sample consisted of 400 secondary school students. The results showed that 10.5% had full criteria of PTSD. Our prevalence rate of PTSD was lower than the rate found in study aimed to find the prevalence rate of PTSD, anxiety and depression among orphaned children in Gaza Strip, which showed that 34.6% showed severe PTSD [26]. Our results were consistent with Thabet et al. [7] study a sample consisted of 449 children selected randomly from the entire Gaza Strip, which showed that 12.4% of children had reported full criteria of post-traumatic stress disorder. The current study showed that there were significant differences in total PTSD and subscales according to family monthly income. Total PTSD was more in families with monthly income less than 1700 NIS. The researcher proposed that the families with high income satisfied positively with different types of traumatic events, because they were able to secure the basic life needs during

the war, but the families with low income have intensified problems in addition to traumatic problems. The current study consistent with the results of Thabet et al. [26] that found children coming from families with incomes of less than \$ 300/month, living in a city, whose parents had less than elementary education were found to suffer more frequently from PTSD.

In this study, using cut-off point of the scale, 22.2% of children reported anxiety. Our rate of anxiety was less than found in study of Thabet et al. [5] of 197 children aged 9-18 years, 33.9% were rated as having anxiety symptoms of likely clinical significance. Similarly, Ingridsdatter et al. [27] in study of a sample of 139 Palestinian adolescents 12 to 17 years old, an estimated 33 out of 139 adolescents (23.74%) scored above the cutoff (>18) on RCMAS and were categorized as likely cases of clinical anxiety. Moreover, our results rate of anxiety was less that found in children exposed to trauma due to war in Gaza Strip in which 30.9% of children were found to suffer from anxiety disorders [13].

Similar in study aimed to find the prevalence rate of PTSD, anxiety and depression among orphaned children in Gaza Strip, showed that 30.9% of children rated as anxiety cases [26]. The study results showed that there were statistically significant differences in anxiety and family monthly income toward families with monthly income less than 1700 NIS. The researcher hypothesized that socio-demographic variable usually plays a role in psychological factors which reflected on the families and their children psychological condition. The low income families suffering in achieving the basic needs and requirements and this expose them to stress, fear, anxiety and other psychological problems in addition to the traumatic events that generated by wars and conflicts in the area. Where Thabet et al. [13] found that anxiety was more frequently found in children living in camps than in a city or in a village, among children coming from families with monthly incomes of less than \$ 300/month and among children whose parents did not have an education.

Using cut-off point of the scale, 139 of children reported depression (34.1%). Low mood and depression often emerge during adolescence, nearly 6% of adolescents meet criteria for a depressive disorder at any given time, with the cumulative frequency of depression rising to as high as 20% by the end of adolescence. The results of the study consistent with the study of Thabet et al. [28] in study a sample included 374 children aged 6 to 17 years, The results showed that 237 of children had no anxiety or depression (63.5%), 95 children had either depression or anxiety (25.5%) and 41 children had comorbidity of depression and anxiety (11%). No gender differences in depression scores, and no statistical association between total trauma and depression scores. However, total depression scores were positively predicted by being forced to leave home under threat of war and being threatened with shooting, while physical injury due to bombardment of their home negatively predicted depression. Moreover, Ingridsdatter et al. [27] in study of a sample of 139 Palestinian adolescents 12 to 17 years old, showed that 52.21% scored above the recommended clinical cut-off of 15 in depression scale. Thabet [26] in study of 449 Palestinian children of 7 to 18 years, the rates of

significant anxiety and depressive symptoms were 20.5% and 22.3% respectively. Girls reported significantly more depressive symptoms than boys. More recently, Thabet et al. [26] in study aimed to find the prevalence rate of PTSD, anxiety and depression among orphaned children in Gaza Strip. The study sample consisted of 81 orphaned children from Al-Amal Institute for Orphans. The study showed that 67.9% of children reported depression. Depression was more in children from north Gaza had more depression than those coming from the other four areas of the Gaza Strip. Orchard et al. [29] in study of adolescents (N=100, aged 12-17 years), referred for depression to a routine public healthcare child and adolescent mental health service, in the south of England. Forty-two of the 100 young people met criteria for a depressive disorder as the primary diagnosis on the KSADS. Thirty-seven met criteria for MDD, three met criteria for MDD with psychosis, and two participants met criteria for schizoaffective depressive disorder [30-33].

## Conclusion

The finding of the current study suggest a collective assessment for war related trauma and follow up of the mental health problems among different age groups to test the connection between war trauma and other variables. War related traumas have dramatic effects upon the school age children and so wide spread as to assume far-reaching consequences for the community and society as a whole. However, it is imperative that government, institutions and organizations dealing with trauma recognize that in spite of very pressing material needs, structured research and data are essentially lacking elements in the pursuit of long term solutions.

It is vital to develop a deeper understanding of the repercussions of such overwhelming trauma. Considering the consequences of war traumatic events on the psychological well-being of the school age children is the vital part in recognizing the war effects. Upon the finding of the study, it is essential to develop a recognized program for monitoring and evaluation of the children psychological conditions on a periodical basis. This program should be followed by trained psychiatrists and psychologists to define the consequences of war-related traumas and measuring the mental health problems among the children groups. The connection between war trauma and mental health problems call alerts for deep investigation and follow up on a standard basis.

## Clinical Implications

This study showed that there is need for providing psycho-education and trauma-focused therapy, including cognitive behavioral techniques for secondary school students by the school counselor. Provide psychosocial support for school age students since they're in real need for such services that mediate the trauma effects including psycho-education and trauma-focused therapy, including cognitive behavioral techniques, establish educational programs including instructions on how the community participates in helping,

supporting and cooperate with the martyr's children to pass traumatic events utilizing play and art therapy. Establishing programs that suitable for children using the comfortable environment and recognized approaches such as cognitive behavioral approaches. Offer emotional support, understanding, patience and encouragement. Demonstrate the effective therapy for children with psychological problems and PTSD using Trauma-focused, individual and group CBT.

## References

- Jagodic GK (2000) Long-term consequences of war on children in Croatia. *Sarajevo 2000: The psychosocial consequences of war.* 208-210.
- Eth S (2001) PTSD in children and adolescent. In Oldham J, Riba M (Eds.). *Evaluation and assessment of PTSD in children and adolescents.* Review of Psychiatry. Washington, DC: American Psychiatric Publishing, Inc. 1: 1-31.
- Kaysen D, Resick PA, Wise D (2003) Living in danger the impact of chronic traumatization and the traumatic context on posttraumatic stress disorder. *Trauma Violence Abuse* 4: 247-264.
- Norris FH, Murphy AD, Baker CK, Perilla JL (2003) Severity, timing, and duration of reactions to trauma in the population: an example from Mexico. *Biol Psychiatry* 53: 769-778.
- Thabet AA, Tawahina AA, Sarraj EE, Vostanis P (2008) Exposure to war trauma and PTSD among parents and children in the Gaza strip. *Eur Child Adolesc Psychiatry* 17: 191-199.
- Thabet AA, Thabet S (2015) Trauma, PTSD, Anxiety, and Resilience in Palestinian Children in the Gaza Strip. *Br J Education, Society Behavioural Sci* 11: 1-13.
- Thabet AA, Thabet S (2018) Psychosocial problems in refugee children victims of community violence in Gaza Strip. *Int J Neurol Nursing* 4: 2456-5229.
- Carrion VG, Weems CF, Ray R, Reiss AL (2002) Toward an empirical definition of pediatric PTSD: The phenomenology of PTSD symptoms in youth. *J Am Acad Child Adolesc Psychiatry* 41: 166-173.
- Khamis V (2005) Post-traumatic stress disorder among school age Palestinian children. *Child Abuse Negl* 29: 81-95.
- Elbedour S, Onwuegbuzie AJ, Ghannam J, Whitcome JA, Hein FA (2007) Post-traumatic stress disorder, depression, and anxiety among Gaza Strip adolescents in the wake of the second Uprising (Intifada). *Child Abuse Negl* 31: 719-729.
- Scrimin S, Moscardino U, Capello F, Altoe G, Steinberg AM, et al. (2011) Trauma reminders and PTSD symptoms in children three years after a terrorist attack in Beslan. *Social Sci Med* 72: 694-700.
- Tolin DF, Foa EB (2006) Sex differences in trauma and posttraumatic stress disorder: A quantitative review of 25 years of research. *Psychol Bull* 132: 959-992.
- Kimerling R, Weitlauf JC, Iverson KM, Karpenko JA, Jain S (2014) Gender issues in PTSD. In Friedman MJ, Keane TM, Resick PA (Eds.). *Handbook of PTSD: Science and practice (2nd Edn.)*. New York, NY: The Guilford Press : 313-330.
- Thabet A, EL-Buhaisi O, Vostanis P (2014) Trauma, PTSD, anxiety, and coping strategies among Palestinians adolescents exposed to War on Gaza. *Arab J Psychiatry* 25: 71-82.
- Khamis V (2015) Coping with war trauma and psychological distress among school-age Palestinian children. *Am J Orthopsychiatry* 85: 72.
- Lee SL, Ji Kim, Noh E, Chae J (2018) Factors associated with post-traumatic stress symptoms in students who survived 20 months after the Sewol ferry disaster in Korea. *J Korean Med Sci* 12: e90.
- Thabet AA, Thabet S, Vostanis P (2016) The relationship between war trauma, PTSD, depression and anxiety among Palestinian children in the Gaza Strip. *Health Sci J* 10: 1-8.
- Silwala S, Dybdahlb R, Chudala R, Sourandera A, Liend L (2018) Psychiatric symptoms experienced by adolescents in Nepal following the 2015 earthquakes. *J Affect Disord* 234: 239-246.
- Birleson P (1981) The validity of depressive disorder in childhood and the development of a self-rating scale: A research report. *J Child Psychol Psychiatry* 22: 73-88.
- Birleson P, Hudson I, Buchanan DG, Wolff S (1987) Clinical evaluation of a self-rating scale for depressive disorder in childhood (Depression self-rating scale. *J Child Psychol Psychiatry* 28: 43-60.
- Montgomery LE (1974) Validity of two measures of anxiety in children. *J Abnorm Child Psychol* 2: 293-298.
- Lengua LJ, Sandler IN (1996) Self-regulation as a moderator of the relation between coping and symptomatology in children of divorce. *J Abnorm Child Psychol* 24: 681-701.
- Reynolds CR, Richmond BO (1985) *Revised Children's Manifest Anxiety Scale (RCMAS): Manual*: WPS, Western Psychological Services.
- Thabet AAM, Vostanis P (1998) Social adversities and anxiety disorders in the Gaza Strip. *Arch Dis Child* 78: 439-442.
- Al Arjani S, Thabet A, Vostanis P (2008) Coping strategies of traumatized children lost their father in the current conflict. *Confl Health* 226-237.
- Dawas M, Thabet AA (2017) The relationship between traumatic experience, post-traumatic stress disorder, resilience, and post-traumatic growth among adolescents in Gaza Strip. *Glob J Intellect Dev Disabil* 5: 2017.
- Thabet AA, Elheloub MW, Vostanis P (2017) Prevalence of PTSD, depression and anxiety among orphaned children in the Gaza Strip. *EC Pediatrics* 5: 159-169.
- Ingridsdatter I, Nielsen L, Kolltveit S, Thabet AA, Christian T, et al. (2012) Risk factors for PTSD, anxiety, and depression among adolescents in Gaza. *J Traumatic Stress* 25: 164-170.
- <https://www.ochaopt.org/reports/situation-report>
- <https://dsm.psychiatryonline.org/doi/book/10.1176/appi.books.9780890425596>
- Thabet AA, Thabet S, Vostanis P (2018) The relationship between trauma due to war, post-traumatic stress disorder and fears among palestinian children. *EC Pediatrics* 7: 171-178.
- Thabet AA, Tawahina A, Sarraj E, Vostanis P (2009) Comorbidity of Anxiety and Depression in Palestinian Children after War on Gaza. *Arabpsynet E J* 24: 31-37.
- Thabet AA, Vostanis P (2014) Impact of trauma on Palestinian children's and the role of coping strategies. *Br J Med Med Res* 5: 330-340.

