

The Relationship Between Trauma Due to War, Post Traumatic Stress Disorder and Fears among Palestinian Children

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Abstract

Aims: The aim of the study was to explore the relationship between trauma due to war, post-traumatic stress disorder, and fears among Palestinian children in the Gaza Strip.

Methods: The sample consisted of 449 children selected randomly from the entire Gaza Strip. Children were interviewed by self-administered set of questionnaires; Traumatic Events Checklist, post-traumatic stress disorder scale for children, Children Fears Inventory.

Results: Overall, Palestinian children reported a range of 0 to 17 traumatic events, with a mean number of 3.59 (SD = 2.92). There were no significant differences between boys and girls in reporting exposure to traumatic events.

Children commonly reported fears such as: 56.2% said that they scream when they see and hear the plane in the air, 54.3% said that had fears of strangers, 50% said that are afraid of heights, 47.4 said they afraid when their parents leave and they stay alone at home. Children reported from no fears to 19 type of fears, mean fears was 6.66.

Regard prevalence of post-traumatic stress disorder, 12.4% of children had reported full criteria of post-traumatic stress disorder. No differences in exposure to trauma according to place of residence or family monthly income. There was positive relationship between exposure to traumatic events and post-traumatic stress disorder and fears. Also, fears were associated with total post traumatic stress disorder and all subscales.

Conclusions: This study found that, children continued to experience substantial trauma, fears, and post-traumatic stress disorder after one and half years of war. Such findings highlight the mediating effect of fears between trauma and post-traumatic stress disorder. Which highlight the need for different types of interventions such as cognitive therapy, social skill training, and fear management for children with fears and post-traumatic stress disorder to improve children ability to cope with fears and post-traumatic stress disorder. Such programs could target children in schools or in local community based center by psychologists and psychiatrists. Parent should receive training courses for improve their abilities in early detection of children fears and mental health problems and their management.

Keywords: Children; Fears Gaza; PTSD; Traumatic events; War

Introduction

A number of studies conducted in Gaza Strip which showed high rate of exposure to trauma and mental health problems including post traumatic stress disorder, anxiety, and depression. In a study of Palestinian children in the Gaza Strip, 41% reported moderate to severe posttraumatic stress (PTS) reactions [1].

In contrast to peacetime disasters, stressors during war are generally multiple, diverse, chronic, and recurrent such as the exposure to bombardment, witnessing killing of close relatives and friends, displacement from the area [2-4].

Children emotional responses have been found to increase in line with the levels of violence encountered [5,6]. Thabet, *et al.* [6] in another study with 502 randomly selected Palestinian children from 16 districts of the Gaza Strip. Age ranged from 9 to 16 years. This study showed that 35.9% of children showed full criteria of post-traumatic stress disorder. Post-traumatic stress disorder and re-experiencing symptoms were more in girls. Also, children coming from families with family income less than \$300 and living in city. The children anxiety symptoms, 30.9% of children had anxiety disorder. No differences in anxiety disorder between boys and girls. Anxiety was more in children living in camps and family monthly income less than \$300.

Overall, the majority of studies conducted in the Occupied Palestinian Territories have emphasized the high rates of dysfunction and maladaptation in Palestinian children, and reported a high prevalence of common mental health problems and more severe disorders [4,6]. Thabet, *et al.* [7] in study relationship between trauma due to winter storm Alexa, post-traumatic stress disorder and other mental health problems of Palestinian children in Gaza Strip, found that mean post traumatic stress disorder symptoms was 28.82, intrusion symptoms was 7.4, avoidance symptoms was 10.08, and arousal symptoms was 11.33, 47.6% of children were considered as post traumatic stress disorder. Girls reported significantly more post traumatic stress disorder symptoms and avoidance symptoms compared to boys. Recently, Dawas and Thabet AA [8] in study a sample consisted of 400 secondary school students, the results showed that 24% adolescents had partial post traumatic stress disorder (PTSD), and 10.5% had full criteria of. Thabet and Vostanis [9] in a study include 200 parents and 200 children age 9 - 18 years, for children, mean traumatic events were 7.88, prevalence of PTSD in children was 70.1%; anxiety disorder (33.9%), general mental health problems rated by parents (42.7); conduct disorder (36.8%); hyperactivity (22.8%), emotional problems (24.4%), peers problems (60.1%), and prosocial problems (20.2%). Al-Sheikh N and Thabet AA [10] in study a sample consisted of 400 students (200 boys and 200 girls). The study showed that mean traumatic experiences reported was 12.19. Boys had been exposed more than girls. The study showed that 25% of adolescents reported partial PTSD and 9.3% had full criteria of PTSD. Boys reported more PTSD than girls.

Fear is an inborn emotional reaction that is produced by the perception of present or impending danger, leading to avoidance of threat, thereby having clear survival value [11]. In children and adolescents, fear is quite prevalent as the developmental progression may trigger fear of pre-potent stimuli (e.g., water, heights), or because the young person is regularly confronted with novel stimuli and situations without having appropriate cognitive and coping responses [12]. Childhood fear has been a well-studied topic within the research field of developmental and clinical psychology for more than a century [13]. It is suggested that the fear response can limit the positive exploration of traumatic experiences, and hinder the integration of traumatic memories; thus, exacerbating the severity of PTSD [14].

Fear conditioning studies in adults have found that posttraumatic stress disorder (PTSD) is associated with heightened fear responses and impaired discrimination. Gamwell, *et al.* [15] in study examined the association between PTSD symptoms and fear conditioned responses in children from a highly traumatized urban population. Children between 8 and 13 years old participated in a fear conditioning study in addition to providing information about their trauma history and PTSD symptoms. Results showed that females showed less discrimination between danger and safety signals during conditioning compared to age-matched males. In boys, intrusive symptoms were predictive of fear responses, even after controlling for trauma exposure. However, in girls, conditioned fear to the danger cue was predictive of self-blame and fear of repeated trauma. Others, highlights that fear can increase the probability of picking up traumatic clues in the cognitive world, and this will in turn result in intrusive thoughts on traumatic experiences associated with hyper-arousal states [16]. It is also suggested that the fear response can limit the positive exploration of traumatic experiences, and hinder the integration of traumatic memories; thus, exacerbating the severity of PTSD [14,17]. Above all, fear may be also a mediator in the relation between trauma exposure and PTSD.

Aim of the Study

The aim of the study was to explore the relationship between trauma due to war, PTSD, and fears among Palestinian children in the Gaza Strip.

Methods

Sample

The sample consisted of 449 randomly selected children from the entire Gaza Strip. Children age ranged from 7 to 18 years.

Measures

Gaza traumatic events checklist [Thabet, *et al.* 2009]

The checklist was developed to reflect the particular circumstances of the regional conflict, which could not be captured by other war trauma measures, and has been reported previously (Thabet, *et al.* 2009, 2013). This consists of 20 traumatic items covering three domains of events typical of the war on Gaza: (1) witnessing personally acts of violence (e.g., killing of relatives, home demolition, bombardment, or injuries); (2) experiencing loss or injury of family and other close persons; and (3) being personally the target of violence (e.g., 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. The Cronbach alpha for the Gaza Trauma Events Scale was 0.80 and the split half was 0.75.

Arabic version of Children Fears Checklist (El Taib, 2000)

This checklist has been developed by El Taib. The child rates 20 items on different fears as 'Yes' or 'No'. The total score is 20 in all items. This checklist was tested in Egypt for 2000 children aged 9 - 12 years. Test-retest reliability was high ($r = 0.91$), with internal consistency 0.78. The validity of the checklist was externally assessed by a panel of experts who agreed on 90% of the items. In this checklist, fears range from specific fears, such as of the dark, to more complicated fears and reactions to such fears seeing people on the walls. In this study, the split half-reliability of the scale was $r=0.70$, and the internal consistency, calculated using Chronbach's alpha, was 0.80).

University of California, Los Angeles post traumatic stress disorder index for Diagnostic and Statistics Manual of Mental Disorders-Fifth Edition (DSM- IV - adolescent version [18].

The items of the UCLA PTSD indices are keyed to DSM-IV criteria and can provide preliminary PTSD diagnostic information. Self-reports for children and adolescents exist, as well as parent reports. The adolescent Version for aged 13 years and above includes 22 questions. 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 did not constitute DSM-IV criteria and three items were repeated symptoms were used [18]. The original English version of this scale was adapted to the Palestinian context (Cronbach α for Arabic Palestinian version was 0.89) [19].

In this study internal consistency using Cronbach’s alpha was = 0.90, with a split half of 0.86.

Study procedure

The data collection was carried out by eight trained psychologists and social workers, under the supervision of the first author. They were trained for six hours in data collection and interviewing techniques. The data was collected during 2010. Children completed self-administered questionnaires at home with assistance from the researchers. The completion of the self-administrative measures took at least one hour for each child. Sociodemographic information was collected from the parents, while measures for exposure to traumatic events and fears were completed by the children. Children were interviewed in their homes following informed consent from their parents. Data collection was conducted in May 2010.

Statistical Analysis

The analysis was conducted on the SPSS for Windows (version 23). Questionnaire data was normally distributed, for this reason independent t-test was used to investigate differences between two groups. Associations between continuous variables were measured by the Pearson’s correlation coefficient test. One-way ANOVA post hoc Tukey’s test was used to investigate differences between more than two groups. To test the fourth aim, a multivariate regression analysis was conducted, in which trauma scores were entered as the independent variable, each fear items entered as the dependent variable.

Results

Sociodemographic Profile

As shown in table one, regard to the area of residence, 34.3% of children lived in Gaza area, 19.2% in Khan Younis, 18.3% in the middle area, 16.3% in the northern Gaza Strip, and 12% in the Rafah area. Most of them lived in cities (64.2%), 25.5% in refugee camps and 10.3% in villages. According to family monthly income, 73.4% of families had less than \$300, 22.6% had \$301-625, and only 4% had a monthly income of more than \$626-750. In regards to employment status, 46.5% of children’s fathers were unemployed, 8.1% Unemployed and received benefit, and 13.6% were government employees, 7.1% were simple workers, 6% were skilled workers, 13.6% were governmental employee 3.5% were United Nations Relief and Works Agency for Palestine Refugees (UNRWA) employee, 2.3% were given unemployment benefits, 3.2% were farmers, and 9.7% were working in other jobs (Table 1).

Items	No.	%
Gender		
Boys	233	51.9
Girls	216	48.1
Area of residence		
North Gaza	73	16.3
Gaza	154	34.3
Middle area	82	18.3
Khan Younis	86	19.2
Rafah	54	12
Type of residence		
City	274	64.2
Village	44	10.3
Camp	109	25.5
Monthly family income		
Less than \$300	292	73.4
\$301-625	90	22.6
\$626-750	16	4
Father job		
Unemployed	202	46.5
Unemployed and received benefit	35	8.1
Simple worker	31	7.1
Skilled worker	26	6
Governmental employee	59	13.6
United Nations Relief and Works Agency for Palestine Refugees (UNRWA) employee	15	3.5
Unemployment benefit	10	2.3
Farmer	14	3.2
Other	42	9.7
Mothers job		
Housewives	422	94.0
Simple worker	6	1.3
Governmental employee	10	2.2
Other	11	2.4

Table 1: Sociodemographic characteristics (N = 449).

Exposure to Traumatic Events

As shown in table 2, the most commonly reported traumatic events experienced by children during the last war were: watching mutilated bodies and injured Palestinians on television (90.4%); deprivation from water or electricity during detention at home (44.6%); and forced internal displacement during the war (33.5%) (Table 2).

Overall, children reported a range of no traumatic events to 17 traumatic events, with a mean number of 3.59 (SD = 2.92). There were no significant gender differences in reporting traumatic events (t = -0.88, p = 0.37). The result showed no age differences in reporting traumatic events (F = 0.33, p < 0.71). Furthermore, there were no differences in exposure to trauma according to place of residence or family monthly income (Table 2).

Traumatic events	%	
	Yes	No
Watching mutilated bodies in TV	90.4	9.6
Deprivation from water or electricity during detention at home	44.6	55.4
Forced internal displacement during the war	33.5	66.5
Witnessing demolition of neighbors' homes	29.8	70.2
Witnessing firing by tanks and heavy artillery at neighbors' homes	26.6	73.4
Being detained at home during the war	25.3	74.7
Threaten by shooting	22.6	77.4
Witnessing shooting of a friend	14.3	85.7
Destroying of your personal belongings during incursion	13.7	86.3
Witnessing killing of a friend	13.6	86.4
Witnessing firing by tanks and heavy artillery at own home	10.1	89.9
Shooting by bullets, rocket, or bombs	8.3	91.7
Witnessing killing of a close relative	7.6	92.4
Beating and humiliation by the army	6.3	93.7
Exposure to burn by bombs and phosphorous bombs	5.4	94.6
Threaten by shooting	4.1	95.9
Being exposed to danger by used as human shield by the Israeli army	4.1	95.9

Table 2: Percentages of type of traumatic experiences.

Frequency of fears in children

The study showed that the most commonly reported fears were: 56.2% said that they scream when they see and hear the plane in the air, 54.3% said that had fears of strangers, 50% said that are afraid of heights, 47.4 said they afraid when their parents leave and they stay alone at home (Table 3). Children reported from no fears to 19 type of fears, mean fears was 6.66 (SD = 4.22).

Fear items	Yes		No	
	N	%	N	%
Scream when I see and hear the plane in the air	251	56.2	196	43.8
Fears of strangers	242	54.3	204	45.7
I am afraid of heights	224	50.0	224	50.0
I am afraid when my parents leave me at home alone	212	47.4	235	52.6
I am afraid when me teacher talk loudly or scream on other children	205	45.9	242	54.1
My heart start pounding and I ran when I see a cat or a dog	196	43.8	252	56.3
I had fears of death when I am sick and had fever	186	41.7	260	58.3
I'm scared of when I am in dark places	183	40.8	265	59.2
I am afraid of walking alone in the stress	161	36.1	285	63.9
I feel dizzy when I see a cat of a dog	159	35.6	288	64.4
I had fears of being in close places	140	31.3	308	68.8
I am afraid to talk in front of others	124	27.7	323	72.3
When I see a cockroach , my hear start to pound and I had fears	109	24.4	338	75.6
I shut my eyes and my face at the garden of when u see a flying butterfly or bee.	100	22.4	347	77.6
I am afraid to go to be at night in darkness	96	21.4	352	78.6
My teeth starting clinging when my teacher ask me to write the whiteboard in front of others	89	19.9	359	80.1
I had fears of going to toilet at night when there is no light	84	18.8	363	81.2
I am afraid of going to school	81	18.1	367	81.9
I am afraid of people even I know that they will not harm me	78	17.4	370	82.6
I had fears and trembled on riding a car	71	15.8	377	84.2

Table 3: Frequency of fears in children.

Differences in fears and sociodemographic variables

In order to find differences in mean fears according to sociodemographic variables, independent t test and one-way ANOVA were conducted.

There were significant difference in total fear scores toward girls (boys vs. girls) (5.44 vs 7.97) ($t(447) = -6.65, p < 0.001$). Fears were more in children living in north of Gaza than those living in the other four areas (Gaza, middle area, Khan Younis, and Rafah) ($F(444/4) = 13.04, p = 0.001$). However, there were no significant differences in fears according to type of residence (village, camp, city), number of siblings, and family monthly income.

Children’s Post-traumatic Stress Reactions

The most common post traumatic symptoms were: 43.4% reported that when something reminded them of what happened during the war, they became very upset, afraid or sad; 31.5% were afraid that the event would happen again; 30.4% felt jumpy or easily startled, like when they heard a loud noise; and 30% tried to stay away from people, places, or objects that reminded them of what happened. The study showed that the prevalence rate of PTSD was 12.4%.

Post hoc test using Tukey’s test showed that younger aged children (7 - 11 years) had more PTSD symptoms than the older age groups (12 - 18 years) ($F(444/3) = 4.28, p = 0.01$). Also, children living in families with less \$300 reported more PTSD symptoms than those with higher monthly income ($F(444/3) = 6.01, p = 0.003$). Children living in cities had more PTSD than those live in a camp or a village ($F(444/3) = 4.05, p = 0.01$).

Relationships between traumatic events, PTSD, and fears

In order to find the relationship between traumatic events due to war and fears, Pearson correlation coefficient test was performed. Result showed that there was significant correlation between total traumatic events and total fears ($r = 0.33, p = 0.001$), total PTSD ($r = 0.44, p = 0.001$), intrusion ($r = 0.46, p = 0.001$), avoidance ($r = 0.29, p = 0.001$), arousal ($r = 0.41, p = 0.001$). Fears were significantly correlated with total PTSD ($r = 0.46, p = 0.001$), intrusion ($r = 0.44, p = 0.001$), avoidance ($r = 0.40, p = 0.001$), and arousal ($r = 0.39, p = 0.001$) (Table 4).

	Total traumatic events	Fears	Total PTSD	Intrusion	Avoidance
Total traumatic events	1.00				
Fears	.33**	1.00			
Total PTSD	.44**	.46**	1.00		
Intrusion	.46**	.44**	.90**	1.00	
Avoidance	.29**	.40**	.88**	.67**	1.00
Arousal	.41**	.39**	.89**	.73**	.66**

Table 4: Pearson correlation coefficient test between traumatic events, PTSD, and fears.

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Relationship between traumatic events and fears

Series of multiple linear regression analysis was conducted in which the total fears was the dependent variable and each of the 20 traumatic events was entered as independent variables. The results indicated that total fears was related to the following traumatic events: were detained at home during incursion ($\beta = 0.23, p < 0.001$), deprivation of going to the toilet and leaving the room at home because of the firing and shelling in the area ($\beta = 0.20, p < 0.001$), and witnessed firing by tanks and heavy artillery at own home ($\beta = 0.15, p < 0.001$) were positively predicted total fears in children (Table 5).

	Unstandardized Coefficients		Standardized Coefficients	t	p	95.0% Confidence Interval for B	
	B	Std. Error	Beta			Lower Bound	Upper Bound
(Constant)	7.40	.31		23.67	0.001	6.78	8.01
Were detained at home during incursion	2.76	.59	.23	4.70	.001	1.60	3.91
Deprivation of going to the toilet and leaving the room at home because of the firing and shelling in the area	2.08	.49	.20	4.21	.001	1.11	3.06
Witnessed firing by tanks and heavy artillery at own home	2.55	.79	.15	3.21	.001	.99	4.11

Table 5: Multiple regression coefficients of influence of traumatic events on total fears.

Relationship between total PTSD and fears

Another series of multiple linear regression analysis was conducted in which the total PTSD was the dependent variable and each of the 20 fears was entered as independent variables. The results indicated that total PTSD was related to the following fears: I had fears of death when I am sick and had fever ($\beta = 0.26, p < 0.01$), When I see a cockroach, my hear start to pound and I had fears ($\beta = 0.17, p < 0.01$).

I am afraid to talk in front of others ($\beta = 0.14, p < 0.01$), my teeth starting clinging when my teacher ask me to write the whiteboard in front of others ($\beta = 0.13, p < 0.01$), I am afraid of heights ($\beta = 0.12, p < 0.01$), I had fears of strangers ($\beta = 0.09, p < 0.04$). I had fears of going to toilet at night when there is no light ($\beta = 0.09, p < 0.04$)

	Unstandardized Coefficients		Standardized Coefficients	t	p	95.0% Confidence Interval for B	
	B	Std. Error	Beta			Lower Bound	Upper Bound
(Constant)	11.45	.95		12.03	.001	9.58	13.32
I had fears of death when I am sick and had fever	6.38	1.13	.26	5.66	.001	4.16	8.59
When I see a cockroach, my hear start to pound and I had fears	4.85	1.31	.17	3.69	.001	2.27	7.44
I am afraid to talk in front of others	3.81	1.23	.14	3.09	.001	1.39	6.23
My teeth starting clinging when my teacher ask me to write the whiteboard in front of others	3.97	1.37	.13	2.90	.001	1.28	6.66
I am afraid of heights	2.86	1.09	.12	2.62	.01	.71	5.00
I had fears of strangers	2.28	1.10	.09	2.07	.04	.12	4.44
I had fears of going to toilet at night when there is no light	2.81	1.39	.09	2.03	.04	.08	5.55

Table 6: Multiple regression coefficients of influence of fears on PTSD.

Discussion

The study showed that, even after 16 months of exposure to war on 2009, children continued to report many traumatic events, but less than before. The explanation of the continuation of reporting of traumatic events could be due to the on-going conflict, stressors and threats of a new war on Gaza. Severity of trauma exposure was significantly associated with scores total PTSD an all subscales scores. Our findings were consistent with those of the Palestinian society in the Gaza Strip and West Bank studies [4,7-10,20]. i.e. that individuals who have already experienced traumatic events (survivors of war) are more vulnerable to severe stress reactions following a traumatic events. These individuals may be at greater risk for mental-health problems, including fears, and PTSD.

There was significant difference in total fear scores toward girls in children living in north of Gaza than those living in the other four areas (Gaza, middle area, Khan Younis, and Rafah). However, there were no significant differences in fears according to type of residence (village, camp, city), number of siblings, and family monthly income. Result showed that there was significant correlation between total traumatic events and total fears, total PTSD, intrusion, avoidance, and arousal. Fears were significantly correlated with total PTSD, intrusion, avoidance, and arousal.

More importantly, our study consistent with previous studies which showed that fear response can limit the positive exploration of traumatic events, and hinder the integration of traumatic memories; thus, exacerbating the severity of PTSD [14,17]. Furthermore, Zhou X, Wu X and An Y [21] in follow up study of Middle school students (N= 1435) 18 months after the Wenchuan earthquake, found that fear mediated the relationship between traumatic exposure and depression, which indicates that traumatic exposure has a positive and indirect association with depression via fear. Others reported that fear of traumatic clues also could lead to conditioned fear reactions [22] and elicit general worry about anything related to such traumatic clues, which could in turn result in depression. Zhou, *et al.* [23] examined the relationships between trauma exposure, fear, post-traumatic stress disorder, and sleep problems in 746 adolescents, of the 2008 Wenchuan earthquake in China at 1 year (T1) and 1.5 years (T2) after the earthquake. The results showed that fear and posttraumatic stress disorder 1 year after the earthquake played a mediating role in the relationship between trauma exposure at 1 year after the earthquake, and sleep problems at both 1 year and 1.5 years after the earthquake, respectively. In particular, posttraumatic stress disorder also had a multiple mediating effect in the path from trauma exposure to sleep problems via fear.

Conclusion

This study found that, children continued to experience substantial traumatic events, fears, and PTSD after one and half years of war. Such findings highlight the mediating effect of fears between traumatic events and PTSD. Which highlight the need for different types of interventions such as cognitive therapy, social skill training, and fear management for children with fears and PTSD to improve children ability to cope with fears and PTSD. Such programs could target children in schools or in local community based center by psychologists and psychiatrists. Parent should receive training courses for improve their abilities in early detection of children fears and mental health problems and their management. Further research in the field to evaluate the mediating effect of social and family support in protecting children from negative effect of traumatic events are needed.

Consent

All authors declare that 'written informed consent was obtained from the patient (or other approved parties) for publication of this report.

Ethical Approval

All authors hereby declare that all the research proposal and scales had been examined and approved by the appropriate Palestinian ethics committee and have therefore been performed in accordance with the ethical standards laid down in the 1964 Declaration of Helsinki.

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Competing Interests

Authors have declared that no competing interests exist.

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