The Arab Journal of Psychiatry (2018) Vol. 29 No.2 Page (131-144) (doi-10.12816/0051278)

Posttraumatic Stress and Growth among War-Exposed Orphans in the Gaza Strip

Abdelaziz M. Thabet, Alaa ElRabbaiy

أثر الصدمات الناجمة عن الحرب على قطاع غزة على الأطفال الايتام والعلاقة مع كرب ما بعد الرضح والنمو الايجابي بعد الرضح

عبد العزيز ثابت وعلاء الربعي

Abstract

Aim: The present study explored the impact of trauma on war-exposed orphans in the Gaza Strip reporting symptoms of posttraumatic stress disorder (PTSD) and posttraumatic growth (PTG). **Participants:** N=83 children attending the orphanage, El-Amal Institute, in Gaza city were included. **Method:** Measures were The Gaza Traumatic Events Checklist, Posttraumatic Stress Disorder Reaction Index (UCLA PTSD-RI), Posttraumatic Growth Inventory (PTGI), and a demographic questionnaire. **Results:** Participants experienced 3 to 28 traumatic events (M=11.19). Those aged 12-14 years reported more traumatic events than younger and older children; 49.4% reported no PTSD symptoms, 32.5% reported partial PTSD, and 18.1% reported full criteria of PTSD. Children in the middle age group (12-14 years) reported higher levels of PTSD than younger and older groups. The PTGI scale found 78.31% reported they had a stronger religious faith with 70.7% stating they learned a great deal about how wonderful people are. Total posttraumatic growth among orphan children mean was 25.27. There was a statistically significant positive relationship between total traumatic events due to war and PTSD, numbness symptoms, and arousal symptoms. While, there was no correlation with PTG nor was there a correlation between PTSD and PTG. **Conclusion:** Orphaned children reported significant trauma and PTSD symptom levels, which suggests the need for governmental and non-governmental organizations to identify therapeutic programs to improve their daily functioning and productivity in future. Training is needed for caregivers in different institutions to ensure early detection of children with mental health problems and identify best ways to support.

Key words: Orphaned children, trauma, posttraumatic stress disorder, posttraumatic growth, Gaza Strip

Declaration of interest: None

Introduction

UNICEF[1] and global partners define an orphan as a child under 18 years of age who has lost one or both parents to any cause of death. By this definition, there were nearly 140 million orphans globally in 2015, including 61 million in Asia, 52 million in Africa, 10 million in Latin America and the Caribbean, and 7.3 million in Eastern Europe and Central Asia. This large figure represents not only children who have lost both parents, but also those who have lost a father but have a surviving mother or have lost their mother but have a surviving father.

UNICEF[2] and numerous international organizations adopted the broader definition of orphan in the mid-1990s as the AIDS pandemic began leading to the death of millions of parents worldwide, leaving an ever-increasing number of children growing up without one or more parent. So the terminology of a 'single orphan' – the loss of one parent – and a 'double orphan' – the loss of both parents – was used to convey this growing crisis.

Most research about childhood traumatic grief and posttraumatic stress disorder (PTSD) has been conducted in the West. If such symptoms are left untreated, children are at risk for depression, reduced psychological functioning, and anger issues.[3] Orphaned youth have been regarded as a vulnerable population in need of care and protection. In particular, orphaned children are more prone to psychosocial challenges and mental health risks than non-orphaned youth. Thienkrua et al,[4] assessed trauma experiences and the prevalence of symptoms of PTSD and depression among children in tsunami-affected provinces in southern Thailand. Results showed prevalence rates of PTSD symptoms of 13% among children living in camps, 11% among children from affected villages, and 6% among children from unaffected villages (camps vs unaffected villages,); for depression symptoms, the prevalence rates were 11%, 5%, and 8%, respectively. Thabet et al.,[5] in a study of orphaned children in a similar setting, showed that out of 112 children who completed self-report questionnaires, 55 (49.0%) reported depression, 32 (28.5%) reported anxiety levels that were above the clinical cut-off in the RCMAS, and 44 children (39.3%) scored within the severe spectrum of the CPTSD-RI (post-traumatic stress)

range. Another study examined the mental health of over 900 children who were matched in three comparison groups: those orphaned due to AIDS, those orphaned from other causes, and non-orphaned children. Results showed those orphaned due to AIDS had significantly higher levels of depression, anxiety, and posttraumatic stress (PTS) symptoms compared to the other groups.[6] Longitudinal follow-up in findings from a study revealed that the prevalence of depression was higher for HIV orphans than other groups in South Africa while stigma, bullying, abuse, violence, and food insecurity increased the likelihood for anxiety, PTSD, and depression for HIV orphans. Loss had negative consequences on their physical and mental health.[7] Another study examined rates of potentially traumatic events and associated anxiety and emotional/behavioral difficulties among 1258 orphaned and abandoned children in five low- and middle-income countries. The study aimed to help policy makers and care providers recognize that (a) children and caregivers are willing to report experiences of potentially traumatic events, (b) those who report such events are at higher risk for experiencing additional events, (c) resulting symptomatology indicates a need for appropriate mental health services, and (d) boys are as vulnerable as girls, indicating an equal need for protection.[8]

The loss of parents during childhood, also referred to as orphanhood in the present study, has generally been considered as stressful and is deemed a risk factor for poor mental health in children.[9] In war zones like the Gaza Strip, many children become orphans due to repeated wars or are otherwise separated from their families. Wanting to help, non-governmental organizations (NGOs) may set up orphanages or homes to support orphaned or separated children. Although children frequently get placed in orphanages by parents who face significant economic pressure, this action deprives children of the family care that has been shown consistently to be one of the strongest supports for children's well-being.[10,11] Longitudinal follow-up in 2009 showed significantly worse mental health among those orphaned due to AIDS, compared to the other groups.[12] In a study on depression in AIDS-orphaned children, symptoms were reported to be higher for orphaned children in southern India. Kumar et al.[13] concluded that MCA analysis showed being a child orphaned by AIDS had the highest effect on the intensity of depression. Children orphaned by AIDS experienced significantly greater depressive symptoms than children who had been orphaned for other reasons. Similar findings were discussed in a study involving 200 children, aged between 7 and 17 years - with 100 being orphaned children placed in four orphanages (experimental group) and 100 non-orphans from two public schools in Accra, Ghana (control group). [14] The prevalence of anxiety symptoms in the orphaned children was 75% while for the non-orphaned group, 11% were anxious. Regarding the symptoms of depression in the orphaned group, results demonstrated that 41% of the orphaned children were mildly-to-severely depressed. For the non-orphaned group, 40% were mildly-to-severely depressed. A study on the prevalence and correlates of depression, PTSD, and suicidality among youth in institutional care in Jordan found high rates of mental illness (45% depression, 24% PTSD, 17% depression/PTSD, 27% suicidality).[15] Similarly, high rates of PTSD, depression and anxiety were found in street children who had survived the 2010 earthquake in Haiti;[16] of the N=128 children studied (*n*=120 boys, *n*=8 girls; ages 7 to 14 years), 14.94% reported severe PTSD symptoms, 13.28% reported anxiety and 29.69% reported depression.

In 2017, a study on the prevalence rates of PTSD, anxiety and depression among orphaned children was conducted in the Gaza Strip. The study sample consisted of N=81 orphaned children from the Al-Amal Institute for Orphans. Results showed the mean PTSD score were 35.79, intrusion symptoms was 19.77, avoidance symptoms was 14.30 and mean arousal symptoms was 13.65; 55.6% of orphaned children showed moderate PTSD symptoms and 34.6% reported severe symptom levels. Girls reported significantly more PTSD, avoidance, and arousal symptoms than boys. A child living in a city experienced more PTSD symptoms than those children live in a camp or a village. The study showed that 67.9% had experienced depressive symptoms. Depressive symptoms were higher in children from north Gaza than those coming from the other four areas of the Gaza Strip. Results showed that 30.9% of children rated as anxiety cases. Children aged 13 to 15 years old reported higher anxiety levels than children who were younger or older and children coming from north Gaza experienced greater anxiety symptoms than those coming from the other four areas of the Gaza Strip.[17]

The present study explored the impact of trauma on war-exposed orphans in the Gaza Strip reporting symptoms of PTSD and posttraumatic growth (PTG).

Method

Setting and participants

The El-Amal orphanage is one of two orphanages situated in the Gaza Strip. It has a total of 90 resident children between the ages of 8 and 17 years. The orphanage is registered as a non-governmental organization (NGO) run by local donations, and non-statutory (local and international) organizations. Large-size families who find it difficult to cope after the loss of one parent (usually the father) may approach orphanage for one or two of their children to be admitted. Children can retain contact with the remaining parent and relatives, and return home during school holidays. They can also be visited at the orphanage, to retain links with their natural extended family. The study sample consisted of children at the El-Amal Institute in Gaza city who agreed to participate (N=83).

Measures

Socio-demographic information form

Data were obtained from the records of each child in the orphanage. A questionnaire was designed to capture basic socio-demographic information. Information on the socio-demographic background of the children included age, gender, age at first admission to the facility, contact with parents or relatives during care, information regarding siblings in the same or other institutions, and reason for admission.

The Gaza Traumatic Events Checklist [18]

The checklist comprises 28 items covering three domains of events typical for the traumatic experiences in the last year (1) Witnessing acts of violence, e.g. killing of relatives, home demolition, bombardment, and injuries, (2) Having experiences of loss, injury and destruction in family and other close persons, and (3) Being personally the target of violence, e.g. being shot, injured, or beaten by soldiers. Respondents were asked whether they had been exposed to each of these events: (0) no (1) yes. The level of trauma was divided into mild (0-5 traumatic events), moderate (6-10 traumatic events), and severe (more than 11 traumatic events). This scale was used in previous studies in the area.[17] The internal consistency using Cronbach's alpha for the Arabic version in the present study was α=.72.

Posttraumatic Stress Disorder Reaction Index (UCLA PTSD-RI) - The University of California at Los Angeles.[19]

The child and adolescent version of the UCLA PTSD-RI is an instrument for the assessment of trauma exposure and posttraumatic stress symptoms among children and adolescents.[18] The UCLA PTSD-RI has been widely used and found to have sound psychometric properties among children and adolescents.[19,20] The present study used the latest version developed according to the Diagnostic and Statistical Manual of Mental Disorders 5th edition (DSM-5[18]) for PTSD. The section measuring PTSD symptoms has 20 items scored and two dissociative symptoms on a scale of 0-4 depending on the severity and burdensomeness of symptoms in the preceding month. PTSD total symptom severity score is calculated by summing severity scores for the 20 DSM-5 PTSD symptoms. Symptom cluster severity scores are calculated by summing the individual item severity scores for symptoms corresponding to a given DSM-5 cluster: Criterion B (items 1, 2, 3, 4, 5); Criterion C (items 6, 7); Criterion D (items 8,9, 10, 11, 12, 13, 14); and, Criterion E (items 15, 16, 17, 18, 19, 20). This index was also professionally translated and culturally adapted into the Arabic languages following the same procedures. The reliability of this measure using the Cronbach's alpha for the 20 items was a =.88.

Posttraumatic Growth Inventory (PTGI) short form [20,21]

The short form of the PTGI comprises 10 items with response choices ranging from 0-4 (0= I did not experience this change; 4= I experienced this change to a very great degree as a result of my crisis). The PTGI measures five domains of growth: (a) relating to others better (two items, e.g. I have a greater sense of closeness with others, I learned a great deal about how wonderful people are), (b) recognizing new possibilities (two items, e.g. New opportunities are available which wouldn't have been otherwise, I established a new path for my life, (c) a greater sense of personal strength (two items, e.g. I discovered that I am stronger than I thought I was, I know better that I can handle difficulties), (d) spiritual change (two items, e.g. I have a better understanding of spiritual matters), and (e) greater appreciation of life (two, e.g. I have a greater appreciation for the value of my own life, I have a stronger religious faith).[20, 21] The 21-item scale was translated to Arabic and back translated and validated.[22] Internal consistency using Cronbach's alpha for the Arabic version in this study was α=.88.

Study procedure

Permission from the Ministry of Social Welfare and Al Amal Association to approach the orphanages managers was granted. The local Helsinki research ethics committee approved the study. When the unit manager agreed, orphanage staff were approached and informed of the aims of the study. These were subsequently explained to the children, and consent was sought from both the key worker and the child. The second author undertook data collection. Children were interviewed at the institution, and potentially difficult questionnaire items were explained to them. Arrangements were made for children to access counseling and mental health support, if needed, and to opt out of the study at any stage. The caregivers also completed one of the questionnaires. The data was collected over a two-week period. Nine children did not take part, leaving a sample of 81 children who completed the mental health measures. Data were collected in August 2017.

Results

Statistical analyses

Statistical analyses were carried out using SPSS version 20 (IBM Inc., Chicago, IL). The trauma, PTSD, post traumatic growth experiences of children was exhibited using the mean values, and SD. T- independent test, and ANOVA tests for between-group comparison of continuous variables. Spearman's correlation coefficient tested the association between traumas, PTSD, PTG of children. A series of linear regression analysis were conducted to find the predictor factors in sociodemographic variables of orphaned children of trauma, PTSD, and PTG. A two-tailed p value <.05 was considered statistically significant.

Sociodemographic characteristics of the study sample

As shown in Table 1, the total number of children selected for the current study was N=83 orphaned children. The total number of boys was *n*=54 (65.1%); number of girls was n=29 (34.91%). The minimum age was 8 years and the maximum age was 17 years, Mean = 13 years (SD= 2.53). The age of children when they entered the orphanage was 5 years, mean = 8.23 years, SD = 2.42). Regarding number of siblings, 27.7% had less than 4 siblings, 39.8% had 5-7 siblings, and 32.5% had 8 and more siblings. Regarding area of residence, 24 children (29.9%) were from North Gaza, 41 children were from Gaza (49.4%), 6 children (7.2%) were from the middle area, 9 children (10.8%) were from Khan Younis, and 3 children (3.6%) were from Rafah. Regarding type of residence, 73 of the children lived in the city (88%), 6 children lived in villages (7.2%), and 4 in a camp (4.8%). As shown in Table 1, 20 fathers of the children died normally (24.1%), 27 fathers died due to chronic disease (32.5%), 14 fathers died due to road traffic accident (12 %), and 11 fathers were martyrs (13.3%).

Table 1. Sociodemographic characteristics of the study sample

	N	***%***
Gender		
Boy	54	65.1
Girl	29	34.9
Age mean =12.84 (SD= 2.53)		
Place of residence		
North Gaza	24	28.9
Gaza	41	49.4
Middle area	6	7.2
Khan Younis	9	10.8
Rafah	3	3.6
Type of residence		
City	73	88

Village	6	7.2
Camp	4	4.8
Number of siblings		
Less than 4	23	27.7
5 to 7 siblings	33	39.8
8 or more	27	32.5
Living outside		
With mother	62	74.7
Relatives	7	8.4
Grandmother	8	9.6
Other	6	7.2
Mother's education		
Illiterate	9	10.8
Primary	16	19.3
Elementary	17	20.5
Secondary	27	32.5
Diploma	4	4.8
University	10	12
Mother's job		
Housewife	74	89.2
Simple worker	3	3.6
Other	6	7.2
Cause of father absence		
Normal death	20	24.1
Chronic disease	27	32.5
Road traffic accident	10	12
Martyr	11	13.3
Other	15	18.1

Frequency of exposure to traumatic events in orphaned children in 2014 war on Gaza

Table 2 showed that the most common traumatic events were as follows: 92.3% of study participants reported hearing sounds of bombardment in different areas of the Gaza Strip, 86.3% reported constantly hearing the sound of drones, and 79.5% reported hearing about the death of a friend or neighbor during the war. The least reported of the traumatic events were as follows: 24.8% witnessed their father, brother, sister or other close relative being injured by shrapnel or bullets, 25% reported that a family member received death threats, and 25.8% reported being injured by shrapnel from a bomb, missile, or lead. The orphaned children reported from 3 to 28 traumatic events with the mean being 11.19 (SD=4.91).

Table 2. Frequency of exposure to traumatic events among orphaned children

No	Paragraph	Yes		No.	
		No.	%	No.	%
1	Hearing about the death of a friend or neighbor during the war	318	79.5	82	**20.5**
2	Hearing about the death of father, brother, sister, mother or other close relative during the war	187	46.8	213	**53.3**
3	Hearing the sounds of bombardment in different areas of the Gaza Strip	369	92.3	31	**7.8**
4	Constantly hearing the sound of drones	345	86.3	55	**13.8**
5	Witnessing the death of a friend	129	32.3	271	**67.8**
6	Witnessing the death of father, brother, sister, mother or other close relative	107	26.8	293	**73.3**
7	Witnessing a friend being injured by shrapnel or bullets	124	31.0	276	**69.0**
8	Witnessing father, brother, sister, mother or other close relative being injured by shrapnel or bullets	99	24.8	301	**75.3**
9	Witnessing their home demolished, and destroying by shelling or bulldozers	123	30.8	277	**69.3**
10	Witnessing a neighbor's home demolished by shelling or bulldozers	180	45.0	220	**55.0**
11	Witnessing father, brother, sister, mother, or other close relative arrested	128	32.0	272	**68.0**
12	Witnessing a friend being arrested	126	31.5	274	**68.5**
13	Seeing images of wounded and the remains of the martyrs on TV	227	56.8	173	**43.3**
14	Witnessing high-rise apartment towers flattened and the bombing	236	59.0	164	**41.0**
15	Witnessing people being killed by rockets	190	47.5	210	**52.5**
16	Being exposed to physical injury as a result of the bombing of their home	120	30.0	280	**70.0**
17	Exposure to injury by shrapnel from a bomb, missile, or lead	103	25.8	297	**74.3**
18	Exposure to detention at home and deprived of water, food and electricity	127	31.8	273	**68.3**
19	Being intimidated by threats of getting shot	123	30.8	277	**69.3**
20	Having their personal belongings destroyed during an incursion	108	27.0	292	**73.0**
21	Being threatened that they will be killed	114	28.5	286	**71.5**
22	Having family members being threatened that they will be killed	100	25.0	300	**75.0**
23	Being at serious risk of being used as a human shield in order to catch a neighbor	115	28.8	285	**71.3**
24	Being forced to leave their home with family members due to shelling	134	33.5	266	**66.5**
25	Being exposed to arrest during invasion	155	38.8	245	**61.3**
26	Being exposed to inhalation of bad smells due to bombardment	212	53.0	188	**47.0**
27	Being exposed to threats by telephone to leave the home to bombing	194	48.5	206	**51.5**
28	Receiving threats to leave the home in the border areas and to go to the city center via leaflets from planes	**194**	**48.5**	**206**	**51.5**

Differences in trauma and socio-demographic variables

There were no statistically significant differences in exposure to trauma related to gender. In order to find the differences in trauma and age of children, we recoded the age into 8-11 years (group 1), 12-14 years (group 2), and 15-17 years (group 3). One Way ANOVA test using Tukey test was conducted. Post hoc test showed that children in the second group (12-14 years) reported more traumatic events than the other two groups ($F(2, 82)= 3.3$, $p=.04$, partial $\eta p^2=0.06$). Furthermore, analysis showed no significant differences in total trauma and number of siblings, cause of father death, or other socio-demographic variables.

Prevalence of PTSD symptoms

Using PTSD-V, the mean score for PTSD symptoms was 36 (SD= 19.89), mean intrusion symptoms was 19 (SD=8.71), mean avoidance symptoms was 8 (SD=3.59), mean numbness was 9 (SD=3.27), mean arousal symptoms was 10 (SD=4.33), and dissociation symptoms mean was 7 (SD=2.77).

Table 3. Means and standard deviation of PTSD and subscales

	Mean	***SD***
Total PTSD	36.00	19.89
Intrusion	19.00	8.71
Avoidance symptoms	8.00	3.59
Numbness symptoms	9.00	3.27
Arousal symptoms	10.00	4.33
Dissociation symptoms	7.00	2.77

Table 4. Prevalence of PTSD in orphaned children

Cases of PTSD	N	%
No PTSD	41	49.4
Partial PTSD	27	32.5
Full PTSD	15	18.1

Socio-demographic variables and PTSD in orphaned children

In order to find differences in PTSD and subscales according to gender of children, an independent *t* test was done. The results showed that there were no significant differences in mean of PTSD and subscales according to gender. Post hoc test showed that children in the second group (12-14 years) reported more PTSD symptoms than the other two groups ($F (2/82) =5.60$, $p=0.002$, partial $\eta p^2=0.07$). Children living in the middle area of the Gaza Strip reported higher levels of PTSD than those live in the other four areas of the Gaza Strip ($F (4/82)=3.16$, $p=0.01$, partial $\eta p^2=0.07$). Furthermore, analysis showed no significant differences in total trauma, number of siblings or cause of death of fathers.

Means, standard deviations and percentage of posttraumatic growth (PTG)

Regarding posttraumatic growth, 78.31% reported having a stronger religious faith, 70.7% learned a great deal about how wonderful people are.

The present study showed that the mean score for posttraumatic growth symptoms among orphaned children was 25.27 (SD=6.91), relating to others mean score 5.19 (SD=1.84), new possibilities mean score 4.94 (SD=1.90), personal strength mean score 4.69 (SD=1.99), spiritual change mean score 5.84 (SD=1.95), and appreciation of life mean score 4.60 (SD=1.83).

Table 5. Means, standard deviations and percentage of posttraumatic growth (PTG)

	Mean	SD	%
1. I changed my priorities about what is important in life.	2.434	1.251	60.84
2. I have a greater appreciation for the value of my own life.	2.169	1.188	54.22
3. I am able to do better things with my life.	2.530	1.183	63.25
4. I have a better understanding of spiritual matters.	2.711	1.205	67.77
5. I have a greater sense of closeness with others.	2.361	1.175	59.04
6. I established a new path for my life.	2.410	1.159	60.24
7. I know better that I can handle difficulties.	2.301	1.187	57.53
8. I have a stronger religious faith.	3.133	1.102	78.31
9. I discovered that I am stronger than I thought I was.	2.386	1.248	59.64
10. I learned a great deal about how wonderful people are.	2.831	1.248	70.78

Table 6. Means and standard deviations of posttraumatic growth

Posttraumatic growth	Mean	SD
PTG-10 items	25.27	6.91
Relating to others	5.19	1.84
New possibilities	4.94	1.90
Personal strength	4.69	1.99
Spiritual change	5.84	1.95
Appreciation of life	4.60	1.83

Differences in PTG and socio-demographic variables

There were no significant differences in PTG according to gender, place of residence, type of residence, age, number of siblings, and cause of death of fathers.

Relationship between trauma, PTSD and PTG

Pearson correlation test showed that there was a statistically significant positive relationship between total traumatic events due to war and PTSD ($r(82) = 0.30$, $p < 0.001$), numbness symptoms ($r(82) = 0.48$, $p < 0.001$), and arousal symptoms ($r(82) = 0.44$, $p < 0.001$). No significant relationship between traumatic events, posttraumatic growth, and no relationship between posttraumatic disorder and posttraumatic growth.

Table 7. Pearson correlation Coefficient between trauma, PTSD and PTG

	1	2	3	4	5	6	7	8	9
1. Total traumatic events									
2. Total PTSD	.39**								
3. Intrusion	.20	.87**							
4. Avoidance symptoms	.06	.63**	.47**						
5. Numbness symptoms	.48**	.65**	.38**	.23*					
6. Arousal symptoms	.44**	.54**	.28**	.08	.26*				
7. PTG-10 items	-.11-	-.05-	-.02-	-.05-	-.07-	-.01-			
8. Relating to others	-.18-	.04	.09	-.01-	.01	-.02-	.76**		
9. New possibilities	-.08-	-.14-	-.13-	-.11-	-.04-	-.09-	.74**	.46**	
10. Personal strength	.06	.08	.10	.06	.01	.04	.68**	.35**	.45**
11. Spiritual change	-.09-	-.05-	-.09-	-.03-	-.04-	.06	.69**	.43**	.36**
12. Appreciation of life	-.11-	-.11-	-.05-	-.07-	-.18-	-.02-	.76**	.54**	.43**

Prediction of child's PTSD by traumatic events

In a multivariate regression model, total PTSD scores were entered as dependent variable, with each traumatic event variables in children as the independent variables. Total PTSD was predicted by witnessing death of a friend (β=0.30, t (82), p<0.001), hearing about the death of your father, brother, sister, mother or other close relative during the war (β=-0.28, t (82), p<0.001), being at serious risk of being used as a human shield to catch your neighbor (β=-0.23, t (81), p<0.02), constantly hearing the sound of drones (β=-0.21, t (82), p<0.03) R2=.29, F(4, 82) =10,42, p<.0.001.

Table 8. Multivariate regression model of prediction of child's PTSD by traumatic events

	Unstandardized Coefficients		**Standardized Coefficients**	**t**	**Sig.**	**95.0% Confidence Interval for B**	
	B	Std. Error	Beta			Lower Bound	Upper Bound
(Constant)	8.83	2.97		2.97	0	2.91	14.75
Witnessing death of a friend	4.75	1.55	0.3	3.06	0	1.66	7.83
Hearing about the death of father, brother, sister, mother or close relative during the war	4.47	1.51	0.28	2.95	0	1.46	7.49
Being put at serious risk of being used as a human shield to catch a neighbor	5.21	2.19	0.23	2.38	0.02	0.84	9.57
Constantly hearing the sound of drones	6.33	2.8	0.21	2.26	0.03	0.75	11.91

In a multivariate regression model, total depression scores was entered as dependent variable, with traumatic events in children as the independent variables. Total PTSD was negatively predicted by the statement '*Being put at serious risk of being used as a human shield to catch a neighbor'* (β=-0.27, t (82), p<0.01), and positively predicted by the statement '*Seeing images of wounded people and the remains of the martyrs on TV'*(β=0.27, t (8), p<0.01), and negatively predicted by threaten by killing(β=-0.20, t (8), p<0.05), R2 = .18, F(3, 82) = 7.2, p< .0.001.

Table 9. Multivariate regression model of prediction of child's posttraumatic growth by traumatic events

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
	B	Std. Error	Beta			Lower Bound	Upper Bound
(Constant)	21.21	2.13		9.95	0.00	16.97	25.45
Being put at serious risk of being used as a human shield to catch a neighbor	-5.91	2.24	-0.27	-2.64	0.01	-10.38	-1.45
Seeing images of wounded people and the remains of martyrs on TV	5.91	2.21	0.27	2.68	0.01	1.52	10.31
Being threatened that you will be killed	-3.99	1.99	-0.20	-2.01	0.05	-7.95	-0.04

Discussion

The present study explored the impact of trauma on war-exposed orphans in the Gaza Strip reporting symptoms of posttraumatic stress disorder (PTSD) and posttraumatic growth (PTG). Findings indicate that orphaned children reported on average 11.9 traumatic events. Children aged 12 to 14 years reported more traumatic events than those either younger or older than themselves. The study findings demonstrate the negative effects of traumatic events on the mental health of orphaned children living in the Gaza Strip. Such findings were consistent with previous studies in the Gaza Strip, which showed that even after the end of war, children still had the memories of the trauma due to war and conflict in the area.[23] The results showed that 49.4% reported no PTSD, 32.5% reported partial PTSD, and 18.1% reported full criteria for PTSD. Children in the second age group (12-14 years) reported more PTSD symptoms than the other two age groups. Children living in the middle area of the Gaza Strip reported more PTSD symptoms than those living in the other four areas studied. Thabet et al.[5] returned similar findings in a study of mental health problems among 115 orphan children aged 9 to 16 years in the Gaza Strip. In that study, 49.0% reported depression, 28.5% reported anxiety, 39.3% scored within the severe spectrum of the PTSD range, and 43.7% were within the likely clinical psychiatric range according to the Strengths and Difficulties Questionnaire (SDQ). This was consistent with a study of 250 children from families who had martyrs in Gaza Strip governorates.[24] The most common traumatic event for children who had lost their fathers in the current conflict was witnessing images of martyrs on TV with 92.8% reporting that they had experienced this. Children who had lost their father in the current conflict reported more than five traumatic events each (M=7.83 for boys vs. 6.23 for girls). There were significant differences between trauma levels according to age in favor of older children between ages 13 to 16 years. Schaal at al.,[25] investigated the levels of trauma exposure and the rates of mental health disorders and described risk factors of posttraumatic stress reactions in 194 Rwandan widows and 206 orphans who had been exposed to the genocide. Participants reported having been exposed to a high number of different types of traumatic events with a mean of 11 for both groups. Widows displayed more severe mental health problems than orphans: 41% of the widows (compared to 29% of the orphans) met symptom criteria for PTSD and a substantial proportion of widows suffered from clinically significant depression (48% versus 34%) and anxiety symptoms (59% versus 42%) even 13 years after the genocide. Over one-third of respondents of both groups were classified as suicidal (38% versus 39%). Regression analysis indicated that PTSD severity was predicted mainly by cumulative exposure to traumatic stressors and by poor physical health status. In contrast, the importance given to religious/spiritual beliefs and economic variables did not correlate with symptoms of PTSD. Similarly, Cluver et al.,[12] in a 4-year longitudinal follow-up of AIDS-orphaned children with control groups of other-orphans and non-orphans in South Africa, the results showed that AIDS-orphaned children showed higher depression, anxiety, and posttraumatic stress disorder (PTSD) scores in the years 2005 and 2009 when compared with other-

orphans and non-orphans. Hermenau et al.,[26] in study of 89 Tanzanian children who had lost at least one parent were compared to 89 matched non-orphans (mean age: 11 years; 51% boys). Orphans reported significantly more experiences of neglect, but not of abuse. A group comparison revealed more depressive symptoms, posttraumatic stress symptoms, and aggressive behavior among orphans. Neglect, abuse, and stigmatization correlated with orphans' internalizing and externalizing problems, yet only neglect and stigmatization were related to orphans' depression severity. Perceived stigmatization moderated the relationship between neglect and depression.

In an earlier study on the El-Amal orphanage, Thabet et al.,[18] aimed to find the prevalence rate of PTSD, anxiety and depression among orphaned children in the Gaza Strip and found the mean PTSD score was 35.79 with 19.77 for intrusion symptoms, 14.30 for avoidance symptoms and 23.65 for arousal symptoms. In total, 55.6% of orphaned children reported experiencing moderate and 34.6% showed severe PTSD symptoms. Girls reported significantly more PTSD, avoidance, and arousal symptoms than boys. A child living in a city had more PTSD symptoms than those children live in a camp or a village. Woollett et al.,[27] found a similar pattern in a study of HIV-positive adolescents aged 13 to 19 years (N=343) who accessed five pediatric antiretroviral clinics in Johannesburg. The results showed that 27% were symptomatic for depression, anxiety, or PTSD; 24% reported suicidality. Peer violence was significantly correlated to all mental health problems, as was hunger, being inappropriately touched, being hit, and being female. Those reporting sickness in the past year were symptomatic. High exposure to violence was evident. Additionally, not feeling safe at home or in the community increased risk for all mental health disorders. Knowing one's HIV status was protective as was having dreams for the future.

In terms of experiences of posttraumatic growth, 78.31% reported having a stronger religious faith, 70.7% reported having learned a great deal about how wonderful people are. The present study showed that the mean score of total posttraumatic growth among orphan children was 25.27, relating to others mean score was 5.19, new possibilities mean score was 4.94, personal strength mean score was 4.69, spiritual change mean score was 5.84, and appreciation of life mean score 4.60. Such findings of high spiritual change were consistent with studies in the Gaza Strip using PTG-21 items. In a study of 381 randomly selected students at four universities in Gaza, Thabet et al.,[28] found posttraumatic growth was 67.34, appreciation of life was 7.17, new possibilities were 12.25, the personal strength was 10.62, and spiritual change was 6.82. Boys had significantly more posttraumatic growth than girls and girls reported significantly more spiritual changes than boys. Similarly, a study of child survivors of war showed that 40.5% believed more strongly in God, 33% reported being better able to appreciate each new day more, 32% felt able to accept the way things turned out as being somehow better, 28.8% understood religious matters better, 28.5% tried to have the best relationships to others; mean score of total posttraumatic growth among study participants was 46.00, relating to others mean score was 15.30, new possibilities mean score was 10.86, personal strength mean score was 8.04, and appreciation of life mean score was 6.54, spiritual change mean score was 5.25. Tedeschi and Calhoun,[20-21] made a compelling argument that the individual exposed to crises not only survives, but also experiences major psychological growth in some areas of development that surpass what was present before the struggle with crises occurred. They identified five domains of the experience of posttraumatic growth survivors when experiencing adversity: greater appreciation of life, recognition of new possibilities, greater sense of personal strength, more intimate relationships with others, and spiritual change. As this relates to the current study, there were significant positive relationships between total traumatic events due to war and PTSD, numbness symptoms, and arousal symptoms and the results suggest that trauma severity was not associated with posttraumatic growth. Salter and Stallard[29] examined PTG among a population of children, aged 7 to 18 years, who had been involved in a road traffic accident. Results indicated that 42% of the children in the study reported some evidence of PTG following the road traffic accident although 37% were also identified as experiencing PTSD. Such findings were consistent with Cryder et al.,[30] in study of children who experienced Hurricane Floyd in 1999. Results indicated that there was a significant correlation between indicators of posttraumatic growth and the children's competency beliefs. Although both social support and ruminative thinking correlated with positive competency beliefs, they did not correlate directly with posttraumatic growth or with each other. Unlike previous research, the results of the present study found that trauma severity was not associated with posttraumatic growth. Van der Schoot et al.,[31] examined the relationship between posttraumatic stress reactions, PTG, and quality of life in a large sample (N=1770) of primary school children. Results indicated that posttraumatic stress reactions and PTG were positively correlated, supporting previous research suggesting the two constructs can co-exist. Wang et al.,[32] examined the relationships among several risk and protective factors for depression symptoms using structural equation modeling. Cross-sectional data were collected from 755 AIDS orphans and 466 children of HIV-positive parents aged 6 to 18 years in 2006–2007

in rural central China. Participants reported their experiences of traumatic events, perceived HIV-related stigma, perceived social support, future orientation, trusting relationships with current caregivers, and depression symptoms. They found that the experience of traumatic events and HIV-related stigma had a direct contributory effect on depression among children affected by HIV/AIDS. Trusting relationships together with future orientation and perceived social support mediated the effects of traumatic events and HIV-related stigma on depression. Yendork and Somhlaba's[14] study of 200 children in Accra, Ghana, which comprised 100 orphans placed in orphanages and 100 non-orphans – all aged between seven and 17 years, revealed that orphans had significantly stronger perceptions of social support from friends than non-orphans did. Conversely, they found that non-orphans had significantly stronger perceptions of support from families than orphans did. However, both the orphans and non-orphans reported high levels of self-efficacy and resilience. Regression analyses also revealed that self-efficacy emerged as a significant positive predictor of resilience for the orphaned children whereas self-efficacy and perceived social support emerged as significant positive predictors of resilience for the non-orphans. Woollett et al.,[33] identified elements of resilience in a group of perinatally infected HIV positive adolescents attending HIV clinics. In-depth interviews were conducted with 25 purposively selected HIV positive adolescents (15 girls, 10 boys) between the ages of 13 to 19 years in Johannesburg. Despite marked stressors in the lives of these adolescents, a high degree of resilience was described. Characteristics of resilience in this group included a pertinent set of beliefs, including a belief in fate and recognition of personal strength for having managed adversity. Character traits such as a pragmatic acceptance about one's life, actively taking responsibility, and a robust self-esteem were evident. Social behaviors included the ability to pursue and access adults and healthcare to meet developmental needs, having a desire to support and help others and challenging HIV related stigma.

Study Limitations

First, the present cross-sectional design did not allow for causal links to be made for specific risk factors associated with trauma due to war, symptoms of PTSD and posttraumatic growth. Studies based on longitudinal designs would potentially be more beneficial in understanding the life experience of orphaned children. The second limitation is that the study only obtained participants from one of the two orphanages in the Gaza Strip, and thus does not generalize to all children who lost their parents in the Gaza Strip. Finally, the absence of studies conducted amongst this specific segment of the population before and after the repeated wars in Gaza Strip made it impossible to compare the results from the present study, however interesting it would be to view the differences over time.

Conclusion and implications for intervention

Results revealed that, this sample of Palestinian orphaned children showed heightened vulnerability to psychological distresses. Given the high prevalence of PTSD, it is likely that orphaned children would benefit from psychosocial interventions to reduce their symptoms and enhance resilience. For this to happen, there must be provision of expert counselling services and the furnishing of life skills training such as stress management and coping skills, the formation and sustenance of healthy peer relationship, problem-solving and decision making skills, as well as conflict management skills. Life skills training on how to assist vulnerable children could also be made available to caregivers of orphaned children. The implementation of the intervention outlined above would significantly improve the psychological well-being and overall quality of life of the Palestinian orphaned children. The present study also sheds new light on the higher prevalence of mental health problems amongst children and adolescents. It thus paves the way for further specific studies of the social support, stigma, coping and resiliency strategies used by orphaned children in their battle with adversity.

Acknowledgement

We appreciated so much the support of Al Amal Orphanage administration for their help and to the children who participated in the study.

References

1. UNICEF. Monitoring the situation of children and women. 2012. http://www.childinfo.org/ pdf (accessed October 3 2018).
2. UNICEF. Orphans. http://www.childinfo.org/ pdf (accessed October 3 2018).
3. Howard B, Matinhure N, McCurdy SA, Johnson CA. Psychosocial disadvantage: preparation grieving remembrance and recovery for orphans in eastern Zimbabwe. Afr J AIDS Res. 2006 May; 5(1):71-83. doi: 10.2989/16085900609490368.
4. Thienkrua W, Cardozo BL, Chakkraband ML et al. Symptoms of Posttraumatic Stress Disorder and

Depression Among Children in Tsunami-Affected Areas in Southern Thailand.JAMA. 2006;296(5): 549-559. doi:10.1001/jama.296.5. 549.

5. Thabet L, Thabet AA, Vostanis P. Mental Health Problems among orphanage Children in the Gaza Strip. Adoption and Fostering Journal. 2007; 31 (2): 54-62.
6. Cluver L, Gardner F, Operario D (2007). Psychological distress amongst AIDS-orphaned children in urban South Africa. Journal of Child Psychology and Psychiatry. 2007, 48(8): 755–763.
7. Cluver L. Orkin M. Cumulative risk and AIDS-orphanhood: Interactions of stigma bullying and poverty on child mental health in South Africa. Social Science Medicine. 2009; 69(8): 1186-1193. http://dx.doi.org/101016/j.socscimed. 2009.07.033
8. Whetten K, Ostermann J, Whetten R, O'Donnell K. Thielman N. More than the loss of a parent: Potentially traumatic events among orphaned and abandoned children. Journal of Traumatic Stress. 2011; 24 (2): 174-182.
9. Morantz G, Cole D, Vreeman R, Ayaya S, Ayuku D, Braitstein P. Child abuse and neglect among orphaned children and youth living in extended families in Sub-Saharan Africa: What have we learned from qualitative inquiry? Vulnerable Children and Youth Studies. 2013; 8: 338–352. http://dx.doi.org/10. 1080/ 17450128.2013.
10. Dozier M, Zeanah CH, Wallin AR, Shauffer C. Institutional care for young children: Review of literature and policy implications. Social Issues and Policy Review. 2012;6: 1–25. http://dx.doi.org/10.1111/j.1751-2409.2011.01033.x
11. Huebner C, Boothby N, Aber JL, Darmstadt GL, Diaz A, Masten AS, Zeanah CH. Beyond survival: The case for investing in young children globally [Discussion paper]. Washington, DC: National Academy of Medicine. 2016.
12. Cluver LD, Orkin M, Gardner F, Boyes ME. Persisting mental health problems among AIDS-orphaned children in South Africa. Journal of Child Psychology and Psychiatry. 2012; 53(4): 363-370.
13. Kumar SG, Dandona R, Kumar GA, Ramopal SP, Dandona L. Depression among AIDS-orphaned children higher than among other orphaned children in southern India. International Journal of Mental Health System. 2014; 8:13. 10.1186/1752-4458-8-13
14. Yendork J, Somhlaba N. Stress coping and quality of life: An exploratory study of the psychological well-being of Ghanaian orphans placed in orphanages. Children and Youth Services Review. 2016;46:28-37.
15. Gearing RE, Brewer KB, Elkins J, Ibrahim R, MacKenzie MJ, Schwalbe CS. Prevalence and Correlates of Depression Posttraumatic Stress Disorder and Suicidality in Jordanian Youth in Institutional Care. Journal of Nervous Mental Disease. 2015; 203 (3): 175–181. doi:10.1097/NMD.
16. Derivois D, Cénat JM, Joseph NE, Karray A, Chahraoui K. Prevalence and determinants of posttraumatic stress disorder, anxiety and depression symptoms in street children survivors of the 2010 earthquake in Haiti four years after. Child Abuse and Neglect. 2017; 67: 174–181.
17. Thabet, AA, Elhelou M, Vostanis P. Exposure to war traumatic experiences posttraumatic growth and resilience among university students in Gaza. American Journal of Advanced Medical Sciences. AJAMS; 1 (1): 1-8.
18. Thabet AA, Abu Tawahina A, El Sarraj E, Vostanis P. Exposure to War Trauma and PTSD among Parents and Children in the Gaza Strip. European Child Adolescent Psychiatry. 2008; 17:191-199.
19. Steinberg AM, Brymer MJ, Decker KB, Pynoos RS. The University of California at Los Angeles Post-traumatic Stress Disorder Reaction Index. Curr Psychiatry Rep. 2004;6 (2):96–100.
20. Tedeschi RG, Calhoun LG. The Posttraumatic Growth Inventory: Measuring the positive legacy of trauma. Journal of Traumatic Stress. 1996; 9: 455–471.
21. Tedeschi RG, Calhoun LG. Posttraumatic growth: Conceptual foundations and empirical evidence. Psychological Inquiry. 2004; 15: 1–18.
22. Dawas M, Thabet AA. The relationship between traumatic experience posttraumatic stress disorder resilience and posttraumatic growth among adolescents in Gaza Strip. JOJ Nurse Health Care. 2017; 5(1): JOJNHC.MS.ID.555652 (2017)
23. Thabet AA, Sabah S. Psychosocial problems in refugee children victims of community violence in Gaza Strip. Int J Neurological Nursing. 2018. ISSN: 2456-5229Vol. 4: Issue 1 www.journalspub.com
24. Al Arjani SE, Thabet AA. Vostanis P. Coping Strategies of Traumatized Children who lost their Fathers in the Current Conflict in the Gaza Strip. Arabpsynet E. Journal. 2008; 20: 226-237.
25. Schaal S, Dusingizemungu J, Jacob N, Elbert T. Rates of trauma spectrum disorders and risks of posttraumatic stress disorder in a sample of orphaned and widowed genocide survivors European Journal of Psychotraumatology; 2011 2:6343 - DOI: 10.3402/ejpt.v2i0.6343
26. Hermenau K, Eggert I, Markus A, Landolt, Hecker T. Neglect and perceived stigmatization impact psychological distress of orphans in Tanzania European Journal of Psychotraumatology. 2015; 6: 28617 - http://dx.doi.org/10.3402/ejpt.v6.28617
27. Woollett N, Cluver L, Bandeira M, Brahmbhatt H. Identifying risks for mental health problems in HIV positive adolescents accessing HIV treatment in Johannesburg. Journal of Child Adolescent Mental Health. 2017; 29(1): 11-26.
28. Thabet AAM, Elheloub MW, Vostanis P. Exposure to war traumatic experiences, posttraumatic growth and resilience among university students in Gaza. American Journal of Advanced Medical Sciences (AJAMS). 2015; 1(1): 1 -8.
29. Salter E, Stallard P. Posttraumatic growth in child survivors of a road traffic accident. Journal of Traumatic Stress. 2004; 17: 335–340 doi: 0894-9867/04/0800-0335/1.

30. Cryder CH, Kilmer RP, Tedeschi RG, Calhoun LG. An exploratory study of posttraumatic growth in children following a natural disaster. Journal of Orthopsychiatry. 2006; 76:65–69 doi: 10.1037/0002-9432.76.1.65.
31. van der Schoot, AE, van Ginkel JR, Kleber RJ. Looking beyond posttraumatic stress disorder in children: Posttraumatic stress reactions posttraumatic growth and quality of life in a general population sample. Journal of Clinical Psychiatry. 2008;69: 1455–1461.
32. Wang B, Li X, Barnett D, Zhao G, Zhao J, Stanton B. Risk and Protective Factors for Depression Symptoms among Children Affected by HIV/AIDS in Rural China: A Structural Equation Modeling Analysis Soc Sci Med. 2012 May; 74(9): 1435–1443.
33. Woollett N, Cluver L, Hatcher AM. To be HIV positive is not the end of the world": Resilience among perinatally infected HIV positive adolescents in Johannesburg. Children and Youth Services Review.2016; 70: 269-275.

الملخص

الهدف: هدفت الدراسة إلى استكشاف أثر الصدمات الناجمة عن الحرب على قطاع غزة على الأطفال الايتام والعلاقة ما بين كرب ما بعد الرضح والنمو الايجابي بعد الصدمة والمتغيرات الديموغرافية الاجتماعية .

طريقة الدراسة: العينة: تكونت عينة الدراسة من الاطفال الايتام من كل الاطفال الموجودين في معهد الامل للأيتام بمدينة غزة واستجاب من العد الكلي للأيتام 83 يتيم من 91 مسجلين في المركز. **ادوات الدراسة:** تكونت أدوات الدراسة من نموذج المعلومات الاجتماعية والديموغرافية عن اليتيم، قائمة غزة للخبرات الصادة، مقياس اضطراب كرب ما بعد الرضح للأطفال، ومقياس النمو الايجابي بعد الصدمة.

النتائج: بينت الدراسة بأن الاطفال الايتام قد تعرضوا لعدد من 3-28 خبرة صادمه، ومتوسط الخبرات الصادمة لكل طفل كانت 11، لم تجد الدراسة فروق في الجنس، أو في سبب وفاة الاب بالنسبة للخبرات الصادمة ولكن تبين أن الاطفال في سن 12-14 سنة قد تعرضوا لخبرا ت صادمة أكثر من الاصغر والاكبر سناً منهم. كما أفاد 49.4 ٪ منهم بأنهم لا يعانون من اضطراب كرب ما بعد الرضح (الصدمة) وتبين أن 32.5 ٪ يعانون من اضطراب جزئي لكرب ما بعد الصدمة، و18.1 ٪ تنطبق عليهم المعايير الكاملة لاضطراب كرب ما بعد الصدمة. تبين أن الاطفال في سن 12-14 سنة يعانون من كرب ما بعد الصدمة أكثر من الاصغر والاكبر سناً. وكذلك الاطفال الايتام الذين يعيشون في المنطقة الوسطى من قطاع غزة. وتبين وجود علاقة ذات دلالة احصائية ما بين التعرض للخبرات الصادمة واضطراب كرب ما بعد الصدمة .

وفيما يتعلق بالنمو الايجابي في مرحله ما بعد الصدمة، قال 78.31 ٪ أنه قد زاد ايمانهم بالله، 70.7 ٪ قالوا بأنهم بعد الصدمة قد تعلموا الكثير عن مدي روعه الناس حولهم وحنانهم. وكان متوسط النمو الايجابي ما بعد الصدمة بين الأطفال اليتامى 25.27. بينت الدراسة أن هناك علاقة ايجابيه ذات دلاله إحصائية بين مجموع الاحداث الصادمة بسبب الحرب واضطراب كرب ما بعد، واعراض الخدر العاطفي، واعراض زيادة الاستثارة، ولم تجد الدراسة علاقة بين الخبرات الصادمة والنمو الايجابي بعد الصدمة. ولم تكن هناك علاقة ما بين النمو الايجابي بعد الصدمة واضطراب كرب ما بعد الصدمة .

الخلاصة: وخلصت الدراسة إلى ان الأطفال اليتامى قد تعرضوا وما زلوا يتذكروا لقدر كبير من الصدمات بعد 4 سنوات من الحرب على غزه وكان لديهم اضطراب كرب ما بعد الرضح (الصدمة)، مما يلقى الضوء على الحاجة الماسة لهذه الشريحة من الاطفال إلى المزيد من الاهتمام من المؤسسات الحكومية وغير الحكومية من أجل إيجاد برامج للعلاج النفسي الاجتماعي للأيتام لتمكينهم من العيش والعمل وأن يكونوا منتجين في المستقبل. يجب عمل دورات تدريبة للمدرسين والمشرفين على الايتام لكي يكونوا قادرين على التعرف الفوري على المشاكل النفسية والسلوكية وايجاد الحلول اللازمة لها.

Corresponding author

Prof Abdelaziz M. Thabet
Professor Emeritus of Psychiatry, School of Public Health, Al Quds University - Affiliated Professor with Centre for Refugee Studies-York University, Canada.
Chairman and Consultant at Child and Family Training and Counselling Centre-Gaza. Gaza, Palestine, Email: abdelazizt@hotmail.com

Authors
Prof Abdelaziz M. Thabet
Professor Emeritus of Psychiatry, School of Public Health, Al Quds University- Affiliated Professor with Centre for Refugee Studies-York University, Canada.
Chairman and Consultant at Child and Family Training and Counselling Centre-Gaza. Gaza, Palestine

Ms Alaa ElRabbaiy
BA, MCMH- Psychologist at Alamal Orphan institute Gaza