



The Relationship between Traumatic Experience, Posttraumatic Stress Disorder, Resilience, and Posttraumatic Growth among Adolescents in Gaza Strip

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Abstract

The aim of this study is to determine the relationship between traumatic experience, posttraumatic stress disorder, resilience, and posttraumatic growth among adolescents in Gaza Strip. The sample consisted of 400 secondary school students (200 males and 200 females) from the seven directorates of the Gaza Strip. Their age ranged between 15-18 years with mean age 16.67 years. Descriptive, analytic cross-sectional design was used. For data collection four instruments were used: Gaza traumatic events checklist, PTSD checklist for DSM-IV-TR, Resilience scale for adolescents, and Posttraumatic growth inventory.

Results: The results showed that the most common traumatic events were hearing the voices of the bombing on different areas (92.3%), listening to the sound of drones constantly (86.3%), and hearing the death of a friend or neighbor during the war (79.5%), and 13% of adolescents had mild trauma, 39.8% had moderate trauma, and 47.3% had severe trauma. Also, the results showed that 24% adolescents had partial PTSD, and 10.5% had full criteria of PTSD. The results also showed that adolescents had above moderate level of resilience with mean score 80.48, and there were no significant differences in resilience levels related to gender, age, family size, family income, fathers' job and level of education, but adolescents from Khan Younis and Rafah had higher resilience compared to their counterparts from other places. The results showed that the mean of total post traumatic growth was 46.05, appreciation of life 6.54, spiritual change 5.25, personal strength 8.04, relating to others 15.30, new possibilities 10.86, and there was higher level of posttraumatic growth in adolescents aged 15-16 years old had. The results of our study showed that there was statistically significant positive relationship between total traumatic events due to war and PTSD and negative correlation with PTG and resilience. PTSD was negatively correlated with resilience. Finally, PTG was positively correlated with resilience.

Clinical implications: The study concluded that Palestinian adolescents been exposed to variety of traumatic events and subsequent posttraumatic stress disorder as a result of the long-term and ongoing wars beside the siege against Gaza Strip, and the results of the study raised the need for strategic mental health programs to enhance coping mechanisms and decrease the negative impact of trauma.

Introduction

Exposure to trauma, is an overwhelming experience for those who witnessed or affected by trauma and can have severe and chronic psychological consequences. Trauma is a psychologically distressing event outside the range of usual human experience, often involves a sense of fear, terror and helplessness [1]. Trauma refers to how individuals emotionally react to terrible events, such as the sudden loss of loved one, natural disasters (e.g., earthquakes, floods, or hurricanes), serious accidents (e.g., car crashes), physical or sexual assault (e.g., being battered or raped), domestic violence, wars, or political violence [2].

Psychological reactions to physical threat and environmental instability include fear, anger, helplessness, isolation, irritability, nervousness, and confusion [3]. In addition, children and adolescents exposed to high levels of conflict and violence may be especially likely to develop diagnosable mental health problems such as posttraumatic stress disorder (PTSD), depression and anxiety. The diagnosis of Posttraumatic Stress Disorder (PTSD) requires exposure to an event (Criterion A) during which the individual experienced severe horror, fear, or helplessness. This is followed by a cluster of re-experiencing, avoidance, and arousal

symptoms that have persisted for more than one month, causing significant distress or dysfunction in daily functioning [4].

A Criterion a event involves experiencing, witnessing, or otherwise confronting a traumatic event that involved actual or threatened death, serious injury, or other threat to the physical integrity of oneself or others. Studies examined the impact of exposure to war trauma in Gaza Strip reported high rates of PTSD and anxiety scores above previously established cut-offs [5,6]. Negative psychological outcomes have been mainly studied in trauma research, the literature has also reported that traumatized persons can resolve their trauma, strengthen their coping skills regarding potential traumatic stressors and/or conflicts, and develop positive psychological attributes, such as posttraumatic growth (PTG) and resilience [7-9].

In developing a model of growth following trauma often referred to as growth through adversity, Linley & Joseph [10] concluded that stressful and traumatic experiences that lead to perceptions of the threat to one's life, uncontrollability, and helplessness are more likely to precipitate growth. Additionally, events that are dealt with by positive reinterpretation, acceptances coping, and effortful reflection among people who are optimistic and experience high levels of positive affect are likely to lead to reports of greater growth. This theory is substantiated by Bonanno [11] who described that some of the survivors of the World Trade Center disaster reported better adjustment, more active social networks, and were also rated as better adjusted by their close friends after the event. Others refer PTG to positive psychological changes that occur as a result of struggling with trauma or any extremely stressful event [9]. These positive changes can manifest in one or more of 5 domains: positive changes in relationships, a sense of new possibilities for one's life, a sense of increased personal strength, a change in spiritual views, and an increased appreciation of life [12].

Resilience refers to a class of phenomena characterized by good outcomes in spite of serious threats to adaptation or development. Research on resilience aims to understand the processes that account for these good outcomes. Resilience is an inferential and contextual construct that requires two major kinds of judgments [13,14]. The first judgment addresses the

threat side of the inference. Individuals are not considered resilient if there has never been a significant threat to their development; there must be current or past hazards judged to have the potential to derail normative development.

In other words, there must be demonstrable risk [15]. Resilience represents a dynamic process that encompasses an efficient adaptation in aversive circumstances [16]. As a trans formative process, resilience is characterized by three distinct but interconnected dimensions: recovery, resistance, and reconfiguration [8]. PTG is considered as an outcome of the reconfiguration process; however, PTG is distinguished from resilience, as it is related to only the positive changes, and not to both positive and negative outcomes [17]. This distinction has been the object of some controversy. Calhoun & Tedeschi [8] emphasized that the level of adversity experienced by traumatic survivors who develop PTG is higher than that of resilient individuals.

Nevertheless, the relation between resilience, PTG, and PTSD remains contradictory, with some inconclusive results. Resilience was found to be negatively associated with PTSD and growth [18]. In contrary, Bensimon [19] suggested that resilience was related positively with growth but negatively with PTSD, while Linley & Joseph [10] reported that PTG did not occur in everyone who experienced stressful circumstances, and some individuals may not experience positive changes as a result of the trauma.

The aims of the study were:

- i. To identify type and severity of trauma among adolescents.
- ii. To determine the prevalence of PTSD.
- iii. To examine the level of resilience and Post-Traumatic growth.
- iv. To find the differences in levels of traumatic events, PTSD, resilience, and Post-Traumatic growth (PTG) in relation to selected variables (gender, age, place of residency, family size, family income fathers' job, and fathers' level of education) among adolescents in the Gaza Strip.

Method

Participants

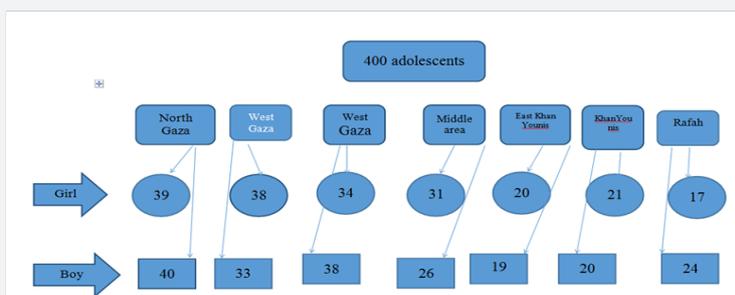


Figure 1: Distribution of study participants by directorates.

The sample consisted of randomly selected 400 students from governmental secondary schools in the entire Gaza Strip. Two hundreds were male (50%) and 200 were female students (50%) (Figure 1).

Measures

Socio-demographic information form

The questionnaire was designed to capture basic socio-demographic information. This included information on the socio-demographic background of the children such as age, gender, place of residence, parental education, family monthly income.

The Gaza traumatic events checklist

Thabet et al. [5-6] The checklist consisting of 28 items covering three domains of events typical for the traumatic experiences in the last year.

- i. Witnessing personally acts of violence (e.g., killing of relatives, home demolition, bombardment, and injuries).
- ii. Having experiences of loss, injury and destruction in family and other close persons, and
- iii. Being personally the target of violence (e.g., being shot, injured, or beaten by the soldiers).

In checklist respondent 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 [5,20]. Cronbach's for the Arabic version in this study was .72.

The posttraumatic stress disorder checklist [5]

The checklist contains 17 items adapted from the DSM-IV [APA, 1994] PTSD symptom criteria. Respondents are asked to rate on a 5-point Likert scale (0=not at all to 4=extremely) the extent to which symptoms troubled them in the previous month. A total score was provided, as well as subscales scores for intrusion, arousal and avoidance PTSD symptoms. The characteristic symptoms of PTSD resulting from the exposure to extreme traumata included re-experiencing the traumatic event (criterion B), avoidance of stimuli associated with the trauma and numbing of general responsiveness (criterion C), and symptoms of increased arousal (criterion D).

The full symptom picture must be present for more than one month and the disturbance must cause clinically significant distress or impairment in social, occupational, or other important areas of functioning [2]. We used the Arabic version of the scale which was widely used in the same area in the last decade [5,20]. Cronbach's for the Arabic version in this study was 0.82.

Resilience scale for adolescents [6], Hjemdal et al. [21-22]

The scale is a 28-item self-report scale using positively

phrased. Higher scores reflect higher degree of resilience. This scale was developed using confirmatory factor analysis and has shown adequate psychometric properties (total Cronbach alpha=0.94) and initial promising validity [21]. Results suggest that the Resilience Scale for Adolescents has three subscales reflecting the major categories of resilience. Furthermore, each subscale has its own groupings of questions that serve as indicators of the construct's major categories.

The first subscale reflects an individual factor that includes personal skills (5 items), peer support (2 items), and social skills (4 items). The second subscale deals with care giving, as reflected in physical care giving (2 items) as well as psychological care giving (5 items). The third subscale comprises contextual components that facilitate a sense of belonging in youth, components related to spirituality (3 items), culture (5 items), and education (2 items). Cronbach's for the Arabic version in this study was .86.

Posttraumatic growth inventory (PTGI) (Tedeschi & Calhoun [12])

The PTGI comprises 21 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 (seven items, e.g. I have a greater sense of closeness with others), (b) recognizing new possibilities (five items, e.g. New opportunities are available which wouldn't have been otherwise), (c) a greater sense of personal strength (four items, e.g. I discovered that I am stronger than I thought I was), (d) spiritual change (two items, e.g. I have a better understanding of spiritual matters), and (e) greater appreciation of life (three items, e.g. I have a greater appreciation for the value of my own life) [12]. This scale was translated to Arabic and back translated and was validated by Thabet, El Helou, Vostanis [23]. Cronbach's for the Arabic version in this study was .88

Study Procedure

Before starting the study, the researcher obtained approval from Al Quds University to conduct the study. In addition, approval to carry out the study was obtained from Ministry of Education and local Helsinki Ethical Committee. Also, voluntary participation was ensured, confidentiality of information was maintained. Data was collected by the researcher; all questionnaires were arranged, organized and numbered serially. Each questionnaire consisted of consent form in the first page and tells the students to participate in the study voluntary, with time allocated for questionnaires extended between 30-45 minutes. The study was conducted during the study data collection was carried out during April 2016.

Statistical analysis

Data was entered and analyzed using the Statistical Package for Social Sciences (SPSS) software version 20 computer program. Between-group comparison was explored

by independent t-test, One Way ANOVA, while the associations between different continuous variables were tested by Pearson correlation coefficient. Multiple linear regression models were used to predict the PTSD by each traumatic events and prediction of posttraumatic growth outcomes by resilience and PTSD.

Results

Socio demographic characteristic for study participants

The study sample consisted of 400 students (200 were male and 200 were females. The age ranged between 15-18 years, mean age was 16.67 (SD=.80. According to place of residence, 19.8% live in North Gaza, 17.8% live in East Gaza, 18.0% West Gaza, 14.3% live in middle area, 9.8% live in Khan Younis, 10.3% in East Khan Younis, and 10.3% live in Rafah. Regard family size, 25.3% of them had family members 4 and less, 42.0% had family member from 5 to 7, and 32.8% had family members 8 and more.

Regard family monthly income, 47.5% of the families had monthly income \$300, 22.8% had monthly income range from \$301-500, 15.0% income from \$501 to 750, and 14.8% income more \$751 and more. Moreover, 31.8% of the fathers were unemployed, 13.8% were workers, 22.8% work with salary, 15.0% don't work (on long term strike) and receive salary, 5.3% were dealers, while 11.5% work at other jobs.

The results also showed that 3.5% of fathers were not educated (did not go to school), 6.8% had completed elementary school, 13.0% completed preparatory school, 33.8% completed secondary school, 7.5% had diploma certificate, 26.5% had bachelor degree, and 9.0% postgraduate studies (Table 1).

Table1: Socio-demographic characteristics of study participants.

Variable	N	%
Gender		
Male	200	50.0
Female	200	50.0
Age mean 16.672 (SD=0.80)		
Family Monthly Income		
Less than \$300 NIS	190	47.5
\$301-500	91	22.8
\$501-750	60	15.0
More than \$750	59	14.8
Fathers' job		
Unemployed	127	31.8
Worker	55	13.8
Work with salary	91	22.8
Don't work & take salary	60	15.0
Dealer	21	5.3
Others	46	11.5
Fathers' Education		
Not educated	14	3.5

Elementary	27	6.8
Preparatory	52	13.0
Secondary	135	33.8
Diploma	30	7.5
University	106	26.5
Post graduate	36	9.0

Frequency of exposure to traumatic events

Table2: Frequency of exposure to traumatic events among study participants

No	Paragraph	Yes		No.	
		No.	%	No.	%
1	Hearing the death of your a friend or neighbor during the war	318	79.5	82	20.5
2	Hearing the death of your father or brother or sister or a relative	187	46.8	213	53.3
3	Hearing the voices of the bombing on different areas of the Gaza	369	92.3	31	7.8
4	Listening to the sound of drones constantly	345	86.3	55	13.8
5	witnessing death of a friend	129	32.3	271	67.8
6	witnessing the death of a father or a brother or sister or a relative	107	26.8	293	73.3
7	witnessing injuring of your friend by shrapnel or bullets	124	31	276	69
8	witnessing injuring of your father or a brother or sister or a relative by shrapnel or bullets	99	24.8	301	75.3
9	witnessing your home demolished, and destroying by shelling or bulldozers	123	30.8	277	69.3
10	witnessing your neighbor's home demolished by shelling or bulldozers	180	45	220	55
11	witnessing a father / brother / sister / mother / relative arrested	128	32	272	68
12	witnessing a friend arrested	126	31.5	274	68.5
13	witnessing pictures of wounded and the remains of the martyrs on TV	227	56.8	173	43.3
14	witnessing high-rise apartment towers and the bombing in front of your eyes and flattened	236	59	164	41
15	witnessing assassinations by rockets	190	47.5	210	52.5
16	Exposure to physical injury as a result of the bombing of your home	120	30	280	70
17	Exposure to injury by shrapnel from a bomb or 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	Exposure to shoot to intimidation	123	30.8	277	69.3
20	Destroying of your personal belongings during incursion	108	27	292	73
21	Threaten by killing	114	28.5	286	71.5
22	Threatening to kill a family member	100	25	300	75
23	Put you at serious risk to use as a human shield to catch your neighbor	115	28.8	285	71.3
24	Forced to leave you home with family members due to shelling	134	33.5	266	66.5
25	Exposure to arrest during invasion	155	38.8	245	61.3
26	Exposure to inhalation of bad smells due to bombardment	212	53	188	47
27	Exposure to threats by telephone to leave the home to bombing	194	48.5	206	51.5
28	Exposure to the threat 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

Table (2) showed that the most common traumatic events were: 92.3% of study participants reported hearing the voices of the bombing on different areas of the Gaza Strip, 86.3% reported listening to the sound of drones constantly, and 79.5% reported hearing the death of a friend or neighbor during the war, while the least traumatic events were: 24.8% reported witnessing injuring of your father or a brother or sister or a relative by shrapnel or bullets, 25% reported threatening to kill a family member, and 25.8% reported exposure to injury by shrapnel from a bomb or missile, or lead.

Differences in trauma and socio demographic variables

There were no statistically significant differences in exposure to trauma related to gender, age, place of residence, family income, and family size.

Prevalence of PTSD Symptoms

The mean score of total PTSD was 38.60, and SD was 0.65. This result indicated that adolescents in Gaza Strip have PTSD with moderate degree. Analysis of subscales showed that avoidance was the highest with mean score 14.39 and SD was 5.14, followed by intrusion with mean score 12.97 and SD was 4.10, and arousal with mean score 11.24 and SD was 4.54. According to DSM-IV diagnosis of PTSD of summing of (one re-

experiencing, 3 avoidance, and 2 arousal symptoms). Table 4.13 shows that 110 (27.5%) of study participants showed no PTSD, 152 (38.0%) of study participants showed at least one criteria of PTSD (B or C or D), 96 (24.0%) showed partial PTSD, and 42 (10.5%) of study participants showed full criteria of PTSD.

Differences in PTSD and socio demographic variables

The study showed that girls had more intrusion symptoms ($t=2.99, p=0.001$), and more arousal symptoms than boys ($t=1.99, p=0.05$). That there were statistically no significant differences in total PTSD, intrusion, avoidance, and arousal according to age, family size, family monthly income. Post hoc LSD indicated that arousal symptoms were higher among participants from North Gaza ($F(3/400)=2.46, p=0.02$).

Resilience

Table 3: Mean and standard deviation of resilience among study participants.

Resilience Domains	Mean	SD
Total resilience	80.48	15.47
Personal skills	13.89	3.88
Peer component	5.54	2.20
Social skills	10.57	3.35
Physical relationship with caregiver	5.41	2.21
Psychological relationship with caregiver	15.82	3.59
Spiritual beliefs	9.37	2.49
Culture	15.47	4.04
Education	4.42	1.72
Total resilience	80.48	15.47

Mean and standard deviation of resilience among study participants:

Table (3) showed that mean score of total resilience among study participants was 80.48, (SD=15.47), personal skills mean score was 13.89 (SD=3.87), peer component mean score was 5.53 (SD=2.19), social skills mean score was 10.57 (SD=3.350), physical relationship with care giver mean score was 5.41 (SD=2.21), psychological relationship with care giver mean score was 15.81 (SD=3.58), spiritual beliefs mean score was 9.36 (SD=2.48), culture mean score was 15.47 (SD=4.04), education mean score was 4.41 (SD=1.71) (Table 3).

Differences in resilience and socio demographic variables:

There were no statistical significant differences in resilience related to gender of, to age, monthly income, of participants. Fisher's Least Significant Degree (LSD) test was performed and found that the study participants from Khan Younis and Rafah had higher resilience compared to other governorates ($F(3/400)=2.15, p=0.04$).

Post Traumatic Growth (PTG)

Table 4: Mean and standard deviation of post traumatic growth.

Post Traumatic Growth	Mean	SD
Total resilience	46.01	15.32
Relating to others	15.30	5.78
New possibilities	10.86	4.26
Personal strength	8.04	3.28
Appreciation of life	6.55	2.79
Spiritual change	5.25	2.24

Regarding post traumatic growth, 40.5% said that they believe more strongly in God, 33% said they can appreciate each new day more, 32% said they accept better the way things turn out, 28.8% understood religious matters better, 28.5% tried to have the best relationships to others showed that the mean score of total posttraumatic growth among study participants was 46.00 (SD=15.32), relating to others mean score 15.30 (SD=5.78), new possibilities mean score 10.86 (SD=4.26), personal strength mean score 8.04 (SD=3.276), and appreciation of life mean score 6.54 (SD=2.79), spiritual change mean score 5.25 (SD=2.24) (Table 4).

Differences in PTG and socio demographic variables

There were no significant differences in PTG according to sex, place of residence, family monthly income, but participants at home ($\beta=0.111, t(400), p<0.001$), personal threat of killing by the army ($\beta=0.17, t(400), p<0.05$), $R^2=.12, F(1, 400) =15.48, p<.001$ (Table 6).

Table 6: Multivariate regression model of prediction of PTSD by traumatic events.

	Unstandardized Coefficients		Standardized Coefficients	t	p	95.0% Confidence Interval For B	
	B	SE	β			Lower Bound	Upper Bound
(Constant)	16.99	0.8		21.2	0	15.42	18.57
Threaten by shooting	2.87	1.31	0.12	2.19	0.03	0.3	5.44
Receiving pamphlets from Airplane to leave your home at the border and to move to the city centers	3.57	1.08	0.16	3.32	0.001	1.46	5.69
Deprivation from water or electricity during detention at home	3.94	1.2	0.17	3.29	0.001	1.59	6.3
Personal threat of killing by the army	2.6	1.29	0.11	2.01	0.05	0.05	5.14

Prediction of PTG by socio demographic variables, PTSD, and resilience

Table 3 presents the results of multiple linear regression analyses as standardized coefficients to explore the correlates of

from age 18 years had lower PTG than those aged 15-16 years old ($F(2/400) =3.861, p=0.01$).

Relationship between trauma, PTSD, PTG, and resilience

Table 5: Pearson correlation Coefficient between trauma, PTSD, PTG, and resilience.

	1	2	3
1.Traumatic events	1.00		
2. PTSD	.28**	1.00	
3. PTG	-.19-**	.00	1.00
4. Resilience	-.17-**	-.31-**	.26**

Pearson correlation test showed that there was statistically significant positive relationship between total traumatic events due to war and PTSD ($r(400)=0.28, p<0.001$) and negative correlation with PTG ($r(400)=-0.19, p<0.001$) and resilience ($r(400)=-0.17, p<0.001$). PTSD was negatively correlated with resilience ($r(400)=-0.31, p<0.001$). Finally, PTG was positively correlated with resilience ($r(400)=0.26, p<0.01$) (Table 5).

Prediction of PTSD by traumatic events

In a multivariate regression model, each traumatic event was entered as an independent variables and total PTSD as dependent variable. The results showed that the following traumatic events were predicting PTSD: threaten by shooting ($\beta=0.12, t(400), p<0.03$), receiving pamphlets from Airplane to leave your home at the border and to move to the city centers ($\beta=0.16, t(400), p<0.001$), deprivation from water or electricity during detention

PTG. Being a boy ($\beta=0.21$) was significantly associated with PTG, even after adjusting other covariates. Interestingly, Resilience increased PTG ($\beta=0.45$) while PTSD symptoms had no effect ($\beta=0.09$) (Table 7).

Table 7: Multiple linear regression for scores of posttraumatic growth inventory among Palestinian adolescents (N = 400) with history of traumatic life experiences.

	β	t	P. Value
Sex			
Male	.21	2.33	.02
Age	-.04-	-.46-	.64
Number of sibling	-.03-	-.31-	.75
Family monthly income	.04	.42	.67
Paternal occupation	.18	1.93	.06
Paternal education	-.14-	-1.18-	.24
Maternal occupation	.01	.08	.94
Maternal education	-.09-	-.85-	.40
Total PTSD	.09	1.03	.30
Total Resilience	.45	4.98	.001
F	3.12		
R2	0.22		

Discussion

This study was conducted two years after the last war against Gaza Strip which lasted for 51 days during the summer in 2014. This war was the most aggressive one with more than 2000 persons killed and more than 15000 injured, besides demolishing and bombing of thousands of houses and mass destruction of infrastructure facilities. This study aimed to identify the degree of exposure to traumatic events, level of PTSD, resilience, and PTG among adolescents in Gaza Strip. The results of the study showed that the most frequent traumatic events reported by study participants were hearing the sounds of the bombing on different areas of the Gaza Strip, listening to the sound of drones constantly, and hearing the death of a friend or neighbor during the war, witnessing high-rise apartment towers bombing and flattened, and witnessing pictures of wounded and the martyrs on TV.

Similar results found among children aged 10-19 years old reported that 94.6% of study participants had witnessed funerals, 83.2% witnessed shooting, 66.9% saw injured or dead who were not relatives, and 61.6% saw family members injured or killed [24]. Previous study by Thabet et al. [5] found that the most common reported traumatic events reported by Palestinians were watching mutilated bodies and wounded people on TV (97.1%), hearing the sonic sounds of the jetfighters (94.7%), and witnessing the signs of shelling on the ground (93.2%).

In addition, Thabet et al. [25] study in Gaza Strip found that 97% of youth had heard the sound of bombs and explosions and 84% had witnessed shelling from tanks, artillery, or military planes, and 73% of kids have also personally witnessed political violence. In addition, the results indicated that 13% of

adolescents reported mild traumatic events, 39.8% reported moderate traumatic events, and 47.3% reported severe traumatic events.

The results of our study also indicated that there were no significant differences in traumatic experience related to socio demographic variables including gender, age, place of residency, family size, family income, fathers' job and fathers' level of education. These results revealed that adolescents in Gaza Strip experience similar traumatic events regardless of socio demographic factors. The researcher believes that these results are logic because Gaza Strip is a small geographic area without major gaps in living conditions, and all the inhabitants of the strip were exposed to the same hard situation during the war. On the other hand, different results were shown in Thabet et al. [25] study which found that there were significant differences in traumatic events between boys and girls due to Gaza War in favor of boys.

The results of our study showed that the mean score of total PTSD was 38.6, which reflected that adolescents have moderate level of PTSD. Moreover, 27.5% of adolescents showed no PTSD symptoms, 38.0% showed at least one criteria of PTSD (B or C or D), 24.0% showed partial PTSD, and 10.5% showed full criteria of PTSD. Earlier study conducted in Gaza Strip found that 59.3% of children who have their homes demolished had symptoms of PTSD [26]. Furthermore, a study carried out in Gaza Strip by Quota [27] found that 54% of study participants reported PTSD reactions, 33.5% reported moderate reactions, and 11% reported mild reactions.

Furthermore, a study examined the prevalence of PTSD among Palestinian children aged 10-19 years, living under severe conditions indicated that 32.7% of the children developed acute PTSD symptoms that need psychological intervention, while 49.2% suffered from moderate level of PTSD symptoms [24]. Another study carried out among adolescent refugees in Gaza Strip found that 52.6% of study participants had moderate PTSD and 23.9% had severe PTSD symptoms [28]. Also, the study conducted by Khamis [29] showed that 34.1% of Palestinians were diagnosed as having PTSD symptoms.

In addition, Abdeen et al. [30] found that 35% in the West Bank and 36% Gaza Strip reported symptoms of PTSD. Furthermore, Thabet et al. [25] showed that 11.8% of adolescents reported no PTSD, 24.2% reported less than two criteria of symptoms, and 34.31% reported symptoms of partial PTSD, while 29.8% reported symptoms meeting criteria for full PTSD. Khamis [29] in another study of Palestinian children in the Gaza Strip 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 co-morbidity with other disorders such as emotional symptoms and neuroticism.

Recently, our study showed that girls had higher symptoms

of intrusion and arousal, but there were no differences in avoidance symptoms and total PTSD between boys and girls. Sex differences in psychological and behavioral reactions to disaster exposure have been found in a number of studies utilizing diverse convenience samples. Most often, girls, compared to boys, report greater levels of internalizing problems and subjective distress during and after disaster exposure [31]. Also, Thabet et al. [32] study showed no statistically significant differences between boys and girls in PTSD symptoms. While, Thabet et al. (2017) in study of a sample consisted of 317 children and their parents. Boys reported more exposure to traumatic events than girls and 25.2% of children had PTSD.

Resilience concerns with adapting well in the face of adversity, trauma, tragedy, and threats. The results of this study indicated that adolescents have good adaptation to the hard circumstances that they live in, which was reflected in their response on resilience questionnaire, which showed that adolescents have above moderate level of resilience (Mean=80.48). Moreover, boys had higher resilience compared to girls, but there were no significant differences in level of resilience related to family members, family income, and parents' level of education.

The results also showed that there were no significant differences in level of resilience related to gender, age, family size, family monthly, fathers' job, and fathers' level of education, but for place of residency, adolescents from Khan Younis and Rafah had higher level of resilience compared to other areas. Such findings were consistent with of Abadsa & Thabet [33] study aimed to examine relationship between psychological problems in families' victims of community violence and resilience in the Gaza. The results showed that mean resilience was 60.84, Males had more resilience than females, more committed, more able to control, and challenging than females. People living in north Gaza had less resilient and less challenging than people living in Gaza or Khan Younis.

Similarly in another study of aimed to examine the effect of war trauma on occurrence of dissociative symptoms among Palestinian adolescents in Gaza Strip and the role of resilience. Mean resilience was 112.18, individual resources (such as personal skills, social skills, and peer support) was 44.06, physical and psychological care giving by primary caregivers was 27.42, and contextual resources including spiritual, cultural and educational resources mean was 37.42. No statistically significance differences in the total resilience and subscales according to the socio-demographic factors as (sex, age, type of residence and parents work), whereas, resilience was more in adolescents with less siblings [34].

Similarlry in another study conducted in Gaza Strip reported that that there was statistically significant negative relationship between total score of stress and the total resilience factor and subscales, and quality of life [23]. Thabet (2016) in a study aimed to establish the association between war traumatic experiences,

post traumatic growth and resilience among universities students in the Gaza Strip after war on Gaza. The results showed that mean resilience was 55, personal competence was 22.32, positive acceptance was 13.49, trust in one's instincts was 16.30, control was 7.96, and spiritual influences were 7.31. There were gender differences on resilience subscale. Males had significantly more positive acceptance than females, trust in others, control, spiritual influences, and females had significantly more spiritual changes than males. Traumatic events had no association with total resilience.

The results of our study indicated positive changes among study participants evidenced by moderate level of PTG with mean score 46. (SD=15.32), appreciation of life mean score 6.54, spiritual change mean score 5.25, personal strength mean score 8.042, relating to others mean score 15.30, and new possibilities mean score 10.860. Similarly, in another study prevalence rate for posttraumatic growth was 56.8% after one year following the earthquake in China [35]. The study carried out by Kimhi et al. (2010) found that females reported lower levels of PTG compared to males.

Thabet et al. in a study found that mean post traumatic 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. Males had significantly more post traumatic growth than females and females had significantly more spiritual changes than males. The results of our study showed that PTG was positively correlated with resilience. Previous studies reported different results concerning the association between exposure to traumatic events and individual reaction to the event. Comparing our results with other studies revealed variant results.

Similarly, Bonanno [7] reported that resilient people were relatively unchanged following interpersonal loss or potential traumatic events because they may cope without ever experiencing intense distress and struggling with the trauma, which is crucial for PTG [36]. Other studies reported that resilience is a protective factor against developing PTSD after traumatic life events. Another study showed that trauma increased PTSD and growth levels, whereas resilience was associated positively with growth and negatively with PTSD [19]. In addition, Duan (2015) indicated that trauma was positively and significantly correlated with PTSD, trait resilience was positively associated with virtues and PTG; The relationship between trait resilience and PTG was moderated by PTSD type (non-PTSD group vs. PTSD group). Another study carried out in Gaza Strip found a significant relationship between traumatic events and PTSD as well as between traumatic events and PTG [6].

Conclusion

The results reflected that adolescents experienced a variety of traumatic events, and have moderate to severe PTSD symptoms.

In addition, the level of resilience and PTG was above moderate. The study concluded that people who go through traumatic experiences often have symptoms and problems afterward. How serious the symptoms and problems are depends on many things including a person's life experiences before the trauma, natural ability to cope with stress, how serious the trauma was, and what kind of help and support a person gets from family, friends, and professionals after the trauma.

Although individuals may feel overwhelmed by their traumatic experiences, it is important to remember that there are other positive aspects of life. There are helpful mental health resources that will help those people come-back again and have hopes for the future.

In the light of study results, the researcher recommends the following: The need for extensive community mental health centers to improve the people awareness about the nature and effects of traumatic experiences, and increase understanding of adaptive coping strategies to overcome its negative impact on individuals. The need to provide protective and therapeutic interventions for adolescents exposed traumatic events. Use the media resources to encourage victims.

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