

IMPACT OF TRAUMA ON PTSD AND ANXIETY AMONG PALESTINIAN SCHOOL-AGE CHILDREN*

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Abstract

Background After the incursion of the Jericho prison on 13 March 2006 and arresting Palestinian prisoners by the Israeli Occupation forces, a group of gunmen attacked a local private school to kidnap the foreign teachers. During this attack, children exposed to shooting with minor injury for few students.

Aims To determine the effect of community violence on children reactions such as PTSD, anxiety, and mental health children

Method: A sample of 126 children was targeted, 114 of children responded to the self-report questionnaires. They were interviewed using questionnaires including Sociodemographic variables, IES-15, Child Revised Manifest Anxiety Scale. While, parents and teachers reported about children mental health problems using SDQ for parents and teachers.

Results The results estimates of that prevalence of PTSD in children was 19.8%, mean IES was 27.17, while intrusion subscale mean = 11.94, and avoidance mean = 15.2, SD = 9.8. There was significant correlation between total IES and intrusion subscale and avoidance. There were no sex differences in total IES, intrusion, and avoidance subscales. Children aged 6-12 years showed more total IES, intrusions, and avoidance symptoms.

From total of 116 children, 55 of parents responded to the SDQ, 18.4% of children were cases, 21.1% had conduct problems, 6.1% had emotional problems, 6.1% had hyperactivity/inattention, 77.6% had peer relationship problems, and 1.8% had prosocial behaviour. The results showed that 92 teachers responded to SDQ for teachers; 44.1% of children were rated as caseness, 10.8% had emotional problems, 29% had conduct problems, 24.7% had hyperactivity/inattention, 64.5% had peer relationship problems, and 9.7% had prosocial behaviour. Prevalence of anxiety disorder was 33.3%. There were no statistically significant differences between means of anxiety in boys and girls and age of children.

There were no correlations between general mental health problems rated by parents and teachers and PTSD, and anxiety self rated by the children themselves.

Conclusion: Children exposed to community violence are at risk of developing PTSD, anxiety, , behavioural, and emotional problems rated by parents and teachers. A great need for establishing school based programmes to deal with children affected by community and political violence.

Keywords: Community violence, anxiety, PTSD, general mental health

Introduction

Children exposed to traumatic stress exhibit a variety of responses. In very young children, diagnosable posttraumatic stress reactions may be absent but more nonspecific anxiety reactions may be present (Moody, 2001; Von Salisch, 2001).

Common feelings and reactions in the aftermath of a traumatic event include sadness, anger, rage, fear, numbness, stress, feeling of helplessness, feeling jumpy or jittery, moodiness or irritability, change in appetite, difficulty sleeping, experiencing nightmares, avoidance of situations that are reminders of the trauma, problems concentrating, and guilt because of survival or lack of harm during the event (American Psychiatric Association, 2000).

For young children, responses to victimization may differ from those of adults. Very young and elementary school children who do suffer negative consequences of exposure to terror may display regressive behaviors (Thabet et al, 1999, 2000). Estimates of childhood posttraumatic stress symptoms vary considerably. Shaw (2003), for example, cites estimated PTSD prevalence in the range of 10–90% of children exposed to war- or terror-induced trauma. The unpredictable nature of terrorism affects children across the world differently. In Israel, for example, where frequent and random terrorist acts are common place, an estimated 30–50% of children exposed to a terror incident will develop diagnosable PTSD or another mental disorder (Gurvitch, Sitterle, Young, & Pfefferbaum, 2002). In contrast, only three of 22 elementary

school children in the World Trade Center 1993 bombing developed diagnosable PTSD 9 months after the event (Koplewicz, 2002). Indirect or vicarious exposure to terrorism is far too common for all children now. Television exposure to scenes of violence and bloodshed are pervasive and require that parents both monitor exposure to such televised events and process their meaning in developmentally appropriate ways. Although geographic proximity to a terror incident. In studies of Palestinian children watching mutilated bodies in TV was the most common traumatic events children experiences in the last 6 years (Thabet & Vostanis, 2001, 2002, 2004, 2005, 2006).

The aim of the study is to investigate the effect of community violence on Palestinian children.

Subjects and methods

Subjects

On 14th March 2006, Israeli military forced attacked Jericho Prison and arrested a group of Palestinians who were kept in Jericho prisons by the Palestinian authority, as a reaction to this attack, a group of Palestinian gunmen decided to kidnap foreigners especially British and Americans as protest of the prison incursion due to the feelings of frustration and helplessness to what happened in Jericho. American school in North of Gaza was target by a group of gunmen who tried to kidnap foreign teachers. They fired shots in air, few students were mildly injured, and no one was killed. As a reaction to this incident, the school asked us to do psychological support for the children and staff after observing a few symptoms of fear, anxiety, and avoidance. A group of five people (Author and 4 psychologists) worked with groups of children and adults.

Children were asked to report about their anxiety and PTSD symptoms, parents and teachers rated children mental health problems. Of the total 125 children 111 children filled the questionnaires (89%), 55 of parents responded to the questionnaires (48.2%) and 93 of teachers responded to questionnaires (81%).

Instruments

Were tested the children by the following instruments:

Sociodemographic scale

In order to measure the effect of socioeconomic status on children PTSD and anxiety, socioeconomic status scale was designed which included age, sex, residency, paternal and maternal education and work.

Impact of Event Scale (IES – Dyregrov, Kuterovac & Barath, 1996)

The IES is a standardized instrument widely used to measure PTSD in children. This 15-item scale was developed to measure the two most characteristic aspects of post-traumatic psychopathology, namely the strength of unpleasant, intrusive thoughts, and the energy spent in trying to block them out of consciousness. The Intrusion sub-scale of the IES draws upon the signs and symptoms of intrusive (invading, disturbing) cognitions and affect. The Avoidance sub-scale includes avoidance behaviour, denial or the blocking of thoughts and images. Items are rated as 'never' (0), 'rarely' (1), 'sometimes' (3), or 'often' (5). The total and sub-scales scores were estimated, as well as a categorical variable based on Yule and Udwin's (1991) cut-off of 40 or above for the likely presence of PTSD. The IES has been used in different cultures (Smith, Perrin, Dyregrov & Yule, 2003), including Palestinian children

(Thabet, Abed & Vostanis, 2001). In this study, the split half reliability of the total IES scale was high ($r = .76$), and the internal consistency, calculated using Cronbach's alpha, was $\alpha = .82$. The respective values for the subscales were: intrusion scale $r = .76$, $\alpha = .80$; avoidance scale $r = .70$, $\alpha = .78$.

Revised Children's Manifest Anxiety Scale (RCMAS) Reynolds and Richmond (1978)

The RCMAS is a standardised 37-item self-report questionnaire for children of 6-19 years of age. It measures anxiety-related symptoms (yes/no answers) in 28 anxiety items and 9 lie items. A cut-off total score of 18 has been found to predict the likelihood of presence of anxiety disorder (Montgomery, 1974). This instrument has been used by the authors in a total population study in the Gaza Strip, where 21.5% of children scored above the cut-off score for anxiety disorders (Thabet & Vostanis, 1998). In this study, the split half reliability of the scale was high ($r=.95$). The internal consistency of the scale, calculated using Cronbach's alpha was also high ($\alpha=0.92$).

Strengths and Difficulties Questionnaire (SDQ - Goodman, 1997)

The questionnaire is one of the most commonly used scales in the assessment of children's strengths and difficulties in child psychiatry (Goodman, 1997, (Goodman, Meltzer & Bailey, 1998), (Goodman & Scott, 1999). It consists of 25 items, 14 describe perceived difficulties, 10 perceived strengths and one is neutral ('gets on better with adults than with other children'). Each perceived difficulties item is scored on a 0-2 scale (not true, somewhat true, certainly true). Each perceived strengths item is scored in the reverse manner, i.e. 2: not true, 1: somewhat true, 0: certainly true. There are two versions of this questionnaire, one for parents and one for teachers. The internal consistency of the parents' version, calculated using Cronbach's alpha, was $\alpha=0.42$. The internal consistency of the teachers' version, calculated using Cronbach's alpha, was $\alpha=0.32$. The 25 SDQ items are divided into scales of Hyperactivity, Emotional Problems, Conduct Problems, Peer Problems and Prosocial Scale (five items per scale). A score is calculated for each scale (range 0-10) and a total difficulties score for the four scales (excluding prosocial behaviour, which was considered different from psychological difficulties), i.e. a range of 0-40. The SDQ has been previously used in the Palestinian culture (Thabet & Vostanis, 2000, 2004).

Statistical analysis

Descriptive statistics and frequencies were used to present the pattern of data for the whole sample. Analyses of the relationship between sex and the categories of the (Post traumatic stress disorder "PTSD", anxiety, and general mental health difficulties" was presented were cross-tabulation and chi square to find the differences of categories, frequencies and percentages and their levels of significant. Statistical differences between the means of total scores of PTSD, anxiety, general mental health problems and less than 2 groups was tested by T independent test. For more than two independent variables such as; age of children (6-12 years, 13-15 years, and 15-18 years) and the type of residence (city-camp-village) among children; one way ANOVA was used.

Results:

Sociodemographic characteristics of the sample

The results showed that the sample consisted of 68 boys which represented 59.6%, while number of girls was 46 which represented 40.4%.

Children minimum age was 6 years and maximum age was 18 years. The mean age was 10.89, SD = 3.6. According to type of residency, 101 of children live in city (88.6%), 9 live in village (7.9%) and 4 live in camp (3.5%).

Table 1: Sociodemographic characteristics of the sample (N=114)

	No	%
Sex		
Male	68	59.6
Female	46	40.4
Age	Mean = 10.89 SD = 3.62	
Place of residence		
City	101	88.6
Village	9	7.9
Camp	4	3.5
Address		
North Gaza	7	6.1
Gaza	100	87.7
Middle area	3	2.6
Khan Younis	4	3.5

PTSD symptoms and severity

Frequency of IES scales items were ranked according to symptoms frequency, we summed sometimes and always as presence of symptoms.

The most common PTSD symptoms were: avoided thoughts reminded them of trauma (72.8%), intrusive thoughts (63.2%), and intrusive images (53.5%). While the least common symptoms were: numbness feelings (20.4%) and insomnia (24.6%).

Table 2: Impact of Events Scale-15 items (No = 114)

Symptoms	No	%
Intrusive thoughts	72	63.2
Avoided thoughts reminded of trauma	83	72.8
Tried to remove it from memory	58	50.9
Insomnia	28	24.6
Psychological reactions	55	48.2
Nightmares	34	29.8
Avoidance of reminders	53	46.9
Felt as if it had not happened or it was not real	49	42.9
Tried not to talk about it	45	39.5
Intrusive images	61	53.5
Other things kept making them think about it	48	42.5
Aware that they still had a lot of feelings about it, but they did not deal with them	53	46.5
Tried not to think about it	49	43
Any reminder brought back feelings about it	47	41.3
Numbness feelings	23	20.4

From the total 126 children, 114 children responded. Twenty-two children (19.8%) scored 40 and above in IES and rated as PTSD, while 89 scored 39 and below which represented 80.2%.

As shown, mean IES was 27.17, SD = 16.8, while intrusion subscale mean = 11.94, SD = 8.7, and avoidance mean = 15.2, SD = 9.8.

In order to find the correlations between total IES and both intrusion and avoidances subscale, a Spearman coefficients correlations test was performed. The results showed that there was significant correlation between total IES and intrusion subscale ($r = 0.91$, $p = 0.001$) and avoidance ($r = 0.86$, $p = 0.001$), also there was significant correlation between intrusion and avoidance subscale ($r = 0.62$, $p = 0.001$).

In order to find PTSD and relationships to gender, t independent test was performed considering mean IES, intrusion and avoidance subscales as dependent variables and sex as the independent variable. The result showed that there was no sex differences in total IES, intrusion, and avoidance subscales ($p = ns$).

In order to investigate the differences in PTSD and age of children, children age was recoded into three categories (6-12 years, 13-15 years, and 16-18 years). One way ANOVA was performed in which total IES scale as in the dependent variable and age as independent variable. Post hoc test showed that children aged 6-12 years showed more total IES than the other two groups

(Mean = 31.06, 22.0, 18.9) ($F = 5.2$, $p = 0.007$). Also children aged 6-12 years were significantly had more intrusions ($F = 4.7$, $p = 0.01$) and avoidance ($F = 3.8$, $p = 0.02$) symptoms than the other two groups.

In order to investigate the predictor factors of PTSD in children, a logistic regression analysis was conducted in which PTSD/ No PTSD was entered as dependent variable and other sociodemographic variables as independent variables. The results showed that non of the sociodemographic variables (sex, age, sorting in family, parental education and work) were predicting PTSD.

Anxiety disorder

The results showed that children anxiety symptoms ranged from 0-53, mean RCMAS was 13.48 (SD = 11.39). Using RCMAS cut off point of 19 for case of anxiety, 42 of children which represented 36.8 % reported anxiety problems. The result showed that 24 boys (21.1%) showed anxiety disorder; 18 of girls scored as anxiety disorder (15.8%). In order to investigate the sex differences in anxiety, a T independent was performed. There were no statistically significant differences between means of anxiety in boys and girls (mean = 13.7 vs mean = 13.06).

In order to investigate the differences in anxiety scores and age of children, children age was recoded into three categories (6-12 years, 13-15 years, and 16-18 years). One way ANOVA was performed in which total anxiety scores as in the dependent variable and age as independent variable. Post hoc test showed that no differences in anxiety cores between the three age groups.

Correlation between PTSD, anxiety and general mental health

In order to find the relationship between total score of IES-15, RCMAS, SDQ for parents and teachers, a coefficient correlation Spearman Rank test was performed. The result showed no correlation between the PTSD, anxiety, and general mental health problems by parents and children.

Children General Mental Health problems according to parents and teachers

From total of 116 children, 55 of parents responded to the SDQ, 18.4% of children were cases, 21.1% had conduct problems, 6.1% had emotional problems, 6.1% had hyperactivity/inattention, 77.6% had peer relationship problems, and 1.8% had prosocial behaviour. The results showed that 92 teachers responded to SDQ for teachers; 44.1% of children were rated as caseness, 10.8% had emotional problems, 29% had conduct problems,

24.7% had hyperactivity/inattention, 64.5% had peer relationship problems, and 9.7% had prosocial behaviour.

In order to investigate the sex differences and general mental health problems rated by parents and teachers, a T independent test was performed. The result showed that there was statistically significant differences between boys and girls: boys scored significantly more than girls in total SDQ for teachers ($t(91) = 2.92, p = 0.004$), conduct disorder rated by teachers ($t(91) = 3.28, p = 0.001$), hyperactivity/inattention rated by teachers ($t(91) = 2.26, p = 0.02$), while girls were significantly had more prosocial behaviour ($t(91) = -2.15, p = 0.03$)

Table 3: Means and Standard Deviations of children mental health according to parents, teachers, PTSD, and anxiety

	Mean	SD	No.	%
Information from Parents				
SDQ morbidity according to parents	13.22	3.87	9	18.4
Emotional problems	1.73	1.81	3	6.1
Conduct problems	2.85	1.86	12	21.8

Hyperactivity /inattention	4.00	1.67	3	6.1
Peer relationship problems	4.83	1.90	38	77.6
Prosocial behavior	8.60	1.52	1	1.8
Information from Teachers				
SDQ morbidity according to teachers	15.67	3.84	41	44.1
Emotional problems	1.98	2.59	10	10.8
Conduct problems	2.96	1.40	27	29
Hyperactivity/inattention	5.44	1.65	23	24.7
Peer relationship problems-teachers	5.27	1.34	60	64.5
Prosocial behaviour-teachers	7.77	2.34	9	9.7
PTSD (IES-15)	27.69	16.44	22	19.8
Anxiety (RCMAS)	13.48	11.39	38	33.3

Correlation between children Anxiety, PTSD, and General Mental Health

Intercorrelations between the children anxiety, PTSD, and general mental health problems were tested by correlation coefficient Spearman test as shown in table. The results showed that total score of SDQ by teachers correlated with peer relationship by teachers ($r = .40, p = 0.01$), conduct problems by teachers ($r = .62, p = 0.001$), emotional problems by teachers ($r = .63, p = 0.001$), and hyperactivity by teachers ($r = .28, p = 0.01$). Also, total SDQ by parents was correlated with hyperactivity by parents ($r = .40, p = 0.01$), emotional problems by parents ($r = .41, p = 0.01$), conduct problems by parents ($r = .61, p = 0.01$), peer relationships problems by parents ($r = .65, p = 0.01$). Also, emotional problems by teachers was correlated with conduct problems by teachers ($r = .31, p = 0.01$), prosocial problems by teachers was negatively correlated with conduct problems by teachers ($r = -.40, p = 0.01$).

Table 5: Correlation between children anxiety, PTSD, and general mental health

	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Anxiety (RCMAS)	—												
2. PTSD (IES-15)	-0.08	—											
3. SDQ morbidity according to teachers	0.07	0.01	—										
4. SDQ morbidity according to parents	0.12	-0.18	-0.01	—									
5. Hyperactivity rated by parents	-0.15	-0.1	-0.03	.40**	—								
6. Emotional problems rated by parents	0.12	0.16	0	.41**	-0.13	—							
7. Conduct problems rated by parents	0.07	-0.12	0.02	.61**	0.16	0.01	—						
8. Prosocial behaviour-parents	0.05	0.13	0.02	-0.22	0.02	-0.04	0.02	—					
9. Peer relationship problems-parents	0.17	-0.17	0.09	.65**	-0.12	0.13	0.22	-0.25	—				
10. Peer relationship problems-teachers	0.03	-0.2	.40**	-0.07	-0.06	-0.02	-0.1	-0.22	-0.16	—			
11. Conduct problems rated by teachers	0.13	0.01	.62**	0.17	0.01	0.13	0.24	0.19	0.13	0.04	—		
12. Emotional problems rated by teachers	-0.04	0.07	.63**	-0.16	-0.03	-0.1	-0.14	0.04	0.11	0.2	.31**	—	
13. Hyperactivity rated by teachers	0	0.07	.28**	-0.02	0.04	-0.01	0.05	0.02	-0.08	-0.16	0.07	-0.29**	—
14. Prosocial behaviour-teachers	-0.15	0.11	0.034	-0.07	-0.17	0.28	-0.06	-0.13	-0.28	-0.12	-0.40**	0.54**	0.24**

Discussion

This is the first study to evaluated effect of community violence in Palestinian society on one of the schools with American style in teaching and curriculum, event the teachers are foreigners and they had been the target of kidnapping after the oscillation of situation in West Bank after incursion of Jericho prison and kidnapping of Palestinian prisoners in the prison. This school is called the American International school of Gaza with high entry fees and only children of rich families in Gaza can afford paying the fees for this school.

In this study 19% of children reported PTSD, which is lower than level of PTSD due to other political violence in the area (Thabet et al, 2001, 2002, 2004, 2006). Our rate of PTSD was less than study of Saigh (1991) who found that 27% of a large group of Lebanese children who had been exposed to bombings and terror attacks met criteria for PTSD. Also our results were inconsistent with study of children after the genocide in Rwanda, Gupta, Dyregrov, Gjestad, and Mukanoheli (1996) which found that up to 79% of Rwandese children were at risk for developing PTSD, and in the early stages of the war in former Yugoslavia, up to 74% of Croatian children were at risk for developing PTSD (Kuterovac, Dyregrov, & Stuvland, 1994). Smith et al (2002) in a community sample of children from Bosnia-Herzegovina found that 52% (1,562 children) would be likely cases of PTSD. Our results inconsistent with study of Dyregrov et al (2003) of children exposed to Göteborg discothèque fire which found that 27% of children reported PTSD. However, this result is higher than rate of PTSD in children victims of natural disasters, Roussos et al (2005) more recently found rates of 4.5 percent and 13.9 percent of PTSD in children at the epicentre and 10 kilometers from the epicenter of the 1999 Greek earthquake. Also our results were inconsistent with study of domestic violence and mental health of children in shelters in which 60% of children were classified as exhibiting severe to very severe PTSD (Jarvis et al, 2005).

However, our study is inconsistent with of Iranian children aged 7–11 years who had witnessed a public hanging next to their school in Isfahan. Post-traumatic stress disorder symptoms were identified in 104 children (52%).

The mean stress severity according to the child post traumatic stress disorder reaction index was 39.1 (Attari et al, 2006). Our rate of PTSD is much lower than the study of children exposed to Athens 1999 earthquake, in which 35.7% of children in the direct exposure group and 20.1% in the indirect exposure group being likely cases of PTSD (Giannopolou et al, 2006).

Our results concerning children's anxiety was not elevated (mean= 13.48)

This is consistent with the American normative data (mean= 13.84)

(Reynolds & Richmond, 1978) and current study children mean score was significantly lower than scores of children who survived a shipping accident (mean=15,56) (Yule et al.,1990). Our results are higher than the level of anxiety found in children from Bosnia-Herzegovina (mean= 11.40) (Smith et al, 2002).

Our results were inconsistent with studies of natural disasters, Kilic et al (2003) in study effect of Bolu Earthquake in Turkey families and children of found that mean anxiety for children was 36.2, and in study of Athens earthquake in 1999 in which mean anxiety for the direct exposed children was 31.8 and 26.11 for the indirect exposed group (Giannopolou et al, 2006).

Also our results is incongruent with study of children responses to the September 11 terrorist attacks (Lengua et al, 2005). This study showed that pre-attack mean anxiety was 24.03 and 21.79 post-attack.

Conclusion and clinical implications

This study showed that not only the political violence is the main traumatic for Palestinian children and their families, but also the community violence inflicted by Palestinian as a reaction of Israeli aggression or other local problems. Such violence was traumatic to children and as a reaction rate of PTSD and anxiety was not like rates found in other types of violence inflicted in children in Gaza Strip. This study highlighted the great need for establishing school based interventions programmes to deal with general behavioural and emotional problems and PTSD.

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