British Journal of Education, Society & Behavioural Science
8(2): 94-103, 2015, Article no.BJESBS.2015.103
ISSN: 2278-0998

SCIENCEDOMAIN *international*
www.sciencedomain.org

Prevalence of Psychosomatic Symptoms among Traumatized Palestinian Adolescents in the Gaza Strip

Thabet Abdelaziz[1*], N. Abu Sneada[2], Dajani Khuloud Khayyat[1] and Panos Vostanis[3]

[1]School of Public Health, Community Mental Health Department and Child Institute, Al Quds University, Palestine.
[2]Community Mental Health Department, Palestinian Ministry of Health, Palestine
[3]School of Medicine, Leicester University, Greenwood Institute of Child Health, School of Psychology, Leicester, UK.

Authors' contributions

This work was carried out in collaboration between all authors. Authors TA and NAS designed the study, wrote the protocol and NA did data collection while author TA supervised the work. Authors TA and DKK performed the statistical analysis. Author TA managed the analyses of the study. Author NAS wrote the first draft of the manuscript. Authors TA, NAS and DKK managed the literature searches and edited the manuscript. Author PV managed the final editing and discussion. All authors read and approved the final manuscript.

Article Information

DOI: 10.9734/BJESBS/2015/14670
Editor(s):
(1) Alina Georgeta Mag, Department of Private Law and Educational Science, University of Sibiu, Romania.
(2) Shao-I Chiu, Taipei College of Maritime Technology of Center for General Education, Taiwan.
(3) Rajendra Badgaiyan, Faculty of Psychiatry and Neuromodulation Scholar, University of Minnesota, Minneapolis, MN, USA.
Reviewers:
(1) Ask Elklit, Danish National Center for Psychotraumatology, University of Southern Denmark, Odense, Denmark.
(2) Matias Carvalho Aguiar Melo Universidade Federal do Ceará, Brazil.
(3) Nobuyuki Kobayashi, Department of Psychosomatic Medicine, Takano Hospital, Kumamoto, Japan.
(4) Vedat Sar, VKV American Hospital, Istanbul, Turkey.
(5) Anonymous, Colombia.
Complete Peer review History: http://www.sciencedomain.org/review-history.php?iid=1066&id=21&aid=8916

Original Research Article

Received 13th October 2014
Accepted 29th December 2014
Published 21st April 2015

**Corresponding author: E-mail: abdelazizt@hotmail.com;*

ABSTRACT

Aims: To estimate the prevalence of psychosomatic symptomsamong traumatized Palestinian adolescents in Gaza Strip.
Methods: The study sample consisted of 380 adolescents randomly selected from secondary schools in Gaza Strip, of whom 171 were boys and 209 were girls between 15-18 years. Data was collected using a socio-demographic checklist, the Gaza Traumatic Events Checklist, and the Psychosomatic Symptoms Scale. For statistical analysis, questionnaire data was normally distributed, for this reason independent t-test was used to investigate differences between two groups. Associations between continuous variables were measured by the Pearson's correlation coefficient test. One-way ANOVA post hoc Tukey was used to investigate differences between more than two groups.
Results: The most common reported traumatic events due to the war on Gaza were: watching mutilated bodies and wounded people in TV (92.3%), and hearing shelling of the area by artillery (89.4%). The mean number of traumatic events experienced by Palestinian adolescents was 14. Boys reported significantly more traumatic events than girls. Adolescents from family with monthly income less than 150 US $ experienced more traumatic events than the other groups.
Mean psychosomatic symptoms was 48.19, digestive system symptoms was 19.97, cardiovascular symptoms was 10.23, respiratory system symptoms was 3.82, urogenital system symptoms was 2.98, skeletal musculature symptoms was 5.29, and skin symptoms was 7.34. Boys scored more in total psychosomatic and skin symptoms. There was a significant relationship between traumatic experiences and psychosomatic symptoms.
Conclusion: Palestinian adolescents experienced significant traumatic events due to the war on Gaza Strip which were significantly associated with developing psychosomatic symptoms. Such findings highlight the urgent need for establishing community mental health school based programs to help adolescents with such symptoms and increase awareness about their nature and management. Also there is need for conducting training courses for teachers and school counsellors to increase their knowledge about general mental health problems in schools and ways of dealing with such problems. Also, training courses for primary care and hospital physicians, who might attribute to physical causes, and liaison between physical and mental health services.

Keywords: Adolescents; Gaza; psychosomatic symptoms; trauma; war.

1. INTRODUCTION

Each year millions of children are exposed to variable types of extreme traumatic stressors. These include natural disasters (e.g., tornadoes, floods, and hurricanes), motor vehicle accidents, life-threatening illnesses and associated painful medical procedures (e.g., severe burns, cancer, and limb amputations), physical abuse, sexual assault, witnessing domestic or community violence, kidnapping, and sudden death of a parent [1].

Children of Gaza have been subject to a wide range of traumatic and violent events over the last few decades, which, when considered alongside other risk factors such as gender, socio-economic status and previous mental health history, these have led to significant psychosocial problems [2]. On Saturday 27th December 2008, there was a new political escalation and violence against the Palestinians in the Gaza Strip. Within the first 20 minutes the Israeli air force bombarded the security positions in the Gaza Strip, leaving hundreds of killed people and more than a thousand of injured. This war on Gaza continued for 23 days. The total toll of this war was 1,330 killed persons and 5,500 injured [3].

A number of studies showed the negative psychological consequences of traumatic experiences on child development and well-being. During the war in Bosnia-Hercegovina, a community sample of 2,976 children aged between 9 and 14 years was selected. Children reported a high prevalence of posttraumatic stress symptoms and grief reactions. Girls reported more distress than boys, but there were few meaningful age effects within the age band studied [4].

In a study in the Nangarhar province in Afghanistan, a sample of 1011 Afghani aged 15 years or older was selected. During the previous ten years, 43.7% of them had experienced

between 8 and 10 traumatic events, and 14.1% had experienced 11 or more traumatic events. The study showed that 38.5% of participants reported symptoms that fulfilled clinical criteria for depression, 51.8% reported anxiety, and 20.4% reported posttraumatic stress disorder [5].

In a study of Palestinian adolescents exposed to both political and domestic violence, whereas there was no significant gender difference in the level of exposure to political violence, female adolescents exhibited higher levels of psychological symptoms compared to their male counterparts. Girls also reported higher levels of exposure to domestic violence and lower levels of family functioning than boys [6]. In another study of 358 Palestinian adolescents, the mean number of traumatic events reported by adolescents was 13.3. The most frequently reported traumatic experiences were watching mutilated bodies on TV (90.8%) and hearing shelling of the area by heavy artillery (88.5%). Almost one third of the young people (29.8%) reported symptoms meeting criteria for a full post traumatic stress disorder (PTSD) [7].

Overall, previous research has primarily focused on the impact of trauma on a range of emotional disorders. Surprisingly, there has been limited evidence on the prevalence of psychosomatic symptoms and disorders, or on their relationship with trauma exposure, despite the well documented link of such presentations with emotional psychopathology. Psychosomatic disorders are typically defined as those in which psychological factors are thought to contribute significantly to the development, exacerbation, or maintenance of the illness [8]. Psychosomatic symptoms and somatization are distinct from malingering in that the patient is truthfully reporting his or her bodily sensations and not consciously using these symptoms to manipulate or control others or the situation [9]. Recently, the definition of psychosomatic disorder has been changing according to the Diagnostic and Statistical Manual of Mental Disorders (DSM). The term psychosomatic disorder refers to physical symptomatology appeared to be caused, influenced or worsened by psychological factors rather than by an underlying physical illness [10].

Depending on the sample and measures, the prevalence rate of psychosomatic complaints in children and adolescents has been found to be between 10 and 25% [11,12].

Such symptoms were particularly high among Palestinian University students who had suffered sexual abuse, together with depressed mood, withdrawal, suicidal or self-injurious behaviors, illegal acts, running away, and substance abuse [13].

Another study of 1,828 children aged 6 to 16 years, of whom 842 had been affected by a devastating earthquake in Wenchuan County in the Northwest Sichuan Province of China and 986 lived in a non-affected area, total psychosomatic symptoms were significantly higher among those exposed [14]. As there has been limited knowledge on the presentation of psychosomatic symptoms following war conflict, this was the rationale of this study with traumatized Palestinian adolescents in the Gaza Strip.

2. METHODS

2.1 Participants and Procedure

The sample consisted of 380 adolescents. The age ranged from 15 to 18 years, with a mean of 16.6 years (SD=0.08). The sample was randomly selected from ten schools in the Gaza Strip (two schools from each of the five governorates of the Gaza Strip - one all-boys and one all-girls school). From each school, three classes were selected randomly (10^{th}, 11^{th} and 12^{th} class), following which we selected randomly the sample from each class registration book. At the end of the selection process, the sample consisted of 171 boys (45%) and 209 girls (55%).

2.2 Research Procedure

We trained three mental health professionals (two male and one female) on data collection for three hours, during which the aim of the study was explained, the sampling, questionnaires and interview techniques. The study was approved by the Palestinian Ministry of Health Ethics Committee. Also, an official letter was obtained from the General Director of the Ministry of Education in order to conduct the study in governmental secondary schools and to facilitate the process of data collection. Each young person received an explanatory letter explaining the aim of the study and that the information gathered would be kept confidential for the purpose of the research only. A similar letter to the parents was send with the participants, and if agreed, they obtained a written permission for

their adolescent's participation. Data collection took place in the classroom during April 2010.

3. MEASURES

3.1 Socio-demographic Checklist

Information was collected from the adolescents on gender, age, place of residence, number of siblings, parents' education and employment status, and family income.

3.1.1 War on Gaza traumatic events checklist [15]

This had been used in the same area [15] and during this period of conflict, It was modified to include 30 items covering different types of traumatic events that adolescents may have been exposed to in the particular circumstances of the 2008-2009 war on Gaza Strip. This checklist covers three domains of trauma. The first domain cover hearing experiences such as hearing to the killing or injury of friends or relatives (item number 1-5). The second domain describes witness acts of violence such as the killing of relatives, home demolition, bombardment, and injury of others (item number 6-17). The third domain covers personal experiences of traumatic events such as being shot or beaten (item number 18-30). The checklist can be completed by children aged 6-16 ('yes' or 'no'). In this study the reliability of the scale using Cronbach's alpha was 0.92 and the split half was 0.86.

3.1.2 Psychosomatic symptoms scale [16]

The scale consists of 59 items that describe different types of psychosomatic symptoms. This scale covers six psychosomatic domains such as digestive system symptoms (23 items), cardiovascular symptoms (7 items), respiratory system (6 items), skin (12 items), urogenital system (5 items), and muscular-skeletal system symptoms (6 items). The items of the scale are rated on a 5-point scale: 1=not at all (0 point), 2= a little bit (1 point), 3= moderately (2 points), 4=quite a bit (3 points) and 5=extremely (4 points). This scale was validated in the Arabic culture (Egypt) [16]. The internal consistency of the Arabic version was satisfactory (Cronbach's alpha = 0.98) and its split half was 0.98. This scale had been previously used in the Gaza Strip, with similar psychometric properties Cronbach's alpha = 0.98) and split half= 0.98 [17]. In this study, the reliability of the scale using Cronbach's alpha was 0.97 and its split half was 0.84.

3.2 Statistical Analysis

Data was entered and analyzed using the Statistical Package for Social Sciences (SPSS) software version 18. The questionnaire data was normally distributed, for which reason an independent t-test was used to investigate between-group differences. Associations between continuous variables were measured by the Pearson's correlation coefficient test. One-way ANOVA post hoc Tukey was used to investigate differences between more than two groups.

4. RESULTS

4.1 Socio-demographic Characteristics (Table 1)

The sample consisted of 380 adolescents, 171 of whom were male (45%) and 209 were female (55%) between the ages of 15-18 years (mean=16.6, SD=0.08). Regarding the place of residence, 26.1% lived in North Gaza, 18.9% in Gaza city, 23.2% in the middle area, 14.2% in Khan Younis area, and 17.6% lived in the Rafah area (13.4%).

Table 1. Demographic characteristics of the study sample (N=380)

	No	%
Sex		
Male	171	45
Female	209	55
Age in years, MEAN age was 16.64 years		
15 y	30	7.9
16y	131	34.5
17y	165	43.4
18y	54	14.2
Place of residence		
North Gaza	99	26.1
Gaza	72	18.9
Middle area	88	23.2
Khan Younis	54	14.2
Rafah area	67	17.6
Family monthly income		
Less than 150 US $	129	33.9
151- 300 US $	86	22.6
301 – 650 US $	102	26.8
More than 651 US $	63	16.6

4.2 Frequency of Traumatic Events Due to War on Gaza

The most commonly reported traumatic events due to the war on Gaza were: 92.3% watched mutilated bodies and wounded people on TV, 89.2% heard shelling of the area by artillery, and 89.2% heard the sonic booms from jetfighters.(Table 2).

4.3 Traumatic Events and Socio-demographic Variables

Traumatic experiences were recoded into three categories (hearing: items 1-5; witnessing: items 5-16; and direct: items 17-30). The mean number of total traumatic experiences were 14.21, mean hearing experiences was 3.61, mean witnessing experiences 5.76, and mean direct experiences 4.84. Boys reported significantly more traumatic events than girls (t-test = 2.19, p <0.04); also, boys reported more hearing traumatic experiences than girls (t-test = 2.81, p <0.01). However, there were no gender differences on reporting witnessing and personal experiences.

Adolescents with family monthly income less than 150 US$ had experienced more traumatic events than the other groups with higher family income (F=3.23, p=0.02).

4.4 Psychosomatic Symptoms

As shown in Table 3, the mean number of psychosomatic symptoms was 48.19 (SD= 27.94) with estimated weight 20.42% (mean/No of items 59*4(0-4 scale)*100), digestive system symptoms was 19.97 (SD= 11.85),

Table 2. Frequency of traumatic events due to war on Gaza

No	Traumatic events	Yes	%
1	Watching mutilated bodies in TV	350	92.3
2	Hearing shelling of the area by artillery	339	89.4
3	Hearing the sonic sounds of the jetfighters	338	89.2
4	Witnessing the signs of shelling on the ground	336	88.7
5	Witnessing firing by tanks and heavy artillery at neighbors homes	265	69.9
6	Witnessing assassination of people by rockets	261	68.9
7	Hearing of arrest of someone or a friend	242	63.9
8	Forced to leave your home during the war	235	62
9	Hearing killing of a friend	235	62
10	Witnessing of a friend home demolition	235	62
11	Deprivation from water or electricity during detention at home	234	61.7
12	Hearing killing of a close relative	216	57
13	Threaten by shooting	198	52.5
14	Being detained at home during incursion	159	42
15	Witnessing killing of a friend	136	35.9
16	Witnessing firing by tanks and heavy artillery at own home	128	33.8
17	Witnessing of own home demolition	128	33.8
18	Destroying of your personal belongings during incursion	127	33.5
19	Threaten of family member of being killed	121	31.9
20	Witnessing shooting of a friend	120	31.7
21	Witnessing shooting of a close relative	115	30.3
22	Witnessing killing of a close relative	115	30.3
23	Deprivation from going to toilet and leave the room at home where you was detained	114	30.1
24	Exposure to burn by bombs and phosphorous bombs	100	26.4
25	Beating and humiliation by the army	100	26.4
26	Threatened to death by being used as human shield to arrest your neighbors by the army	97	25.6
27	Shooting by bullets, rocket, or bombs	89	23.5
28	Threaten of being killed	89	23.5
29	Being arrested during the last incursion	83	21.9
30	Physical injury due to bombardment of your home	83	21.9

Table 3. Independent t- test for mean traumatic experiences and sex of adolescents

	Sex	N	Mean	SD	t	p
Total trauma	Male	171	15.01	6.23	2.03	0.04
	Female	209	13.56	7.40		
Hearing trauma	Male	171	3.60	1.11	-0.23	0.82
	Female	209	3.62	1.08		
Witnessing trauma	Male	171	6.21	2.66	2.81	0.01
	Female	209	5.40	2.92		
Personal trauma	Male	171	5.20	4.04	1.52	0.13
	Female	209	4.54	4.32		

cardiovascular symptoms was 10.23 (SD = 11.85), respiratory system symptoms was 3.82 (SD = 3.51), urogenital system symptoms was 2.98 (SD = 2.91), skeletal musculature symptoms was 5.29 (SD =3.76), and skin symptoms was 7.34 (SD = 6.7) (Table 4).

4.5 Psychosomatic Symptoms and Socio-demographic Variables

There were significant gender differences in skin symptoms (boys > girls: 8.32 vs. 6.54; t = 2.64, p = 0.01). No statistically significant gender differences were detected in other psychosomatic symptoms.

4.6 Relationship between Trauma and Psychosomatic Symptoms

Table 5 shows that total psychosomatic symptoms was significantly correlated positively with total traumatic events (r = 0.17, p = 0.01), hearing trauma (r = 0.12, p = 0.01), witnessing trauma (r = 0.10, p = 0.01), and personal trauma (r = 0.18, p = 0.01).

Table 4. Means, standard deviations of psychosomatic symptoms (N=380)

	Mean	Std. deviation
Total psychosomatic symptoms	48.19	27.94
Digestive system symptoms	19.97	11.85
Cardiovascular symptoms	10.23	6.37
Respiratory system symptoms	3.82	3.51
Urogenital system symptoms	2.98	2.91
Skeletal musculature symptoms	5.29	3.76
Skin symptoms	7.34	6.74

Table 5. Pearson correlation coefficient test between trauma and psychosomatic symptoms

		Total trauma	Hearing trauma	Witnessing trauma	Direct trauma
Total psychosomatic symptoms	r	0.17	0.12	0.10	0.18
	P	0.01	0.05	0.10	0.00
	No.	380	380	380	380
Digestive system symptoms	r	0.15	0.10	0.12	0.15
	P	0.01	0.07	0.04	0.01
	No.	380	380	380	380
Cardiovascular symptoms	r	0.19	0.15	0.08	0.19
	P	0.00	0.00	0.13	0.00
	No.	380	380	380	380
Respiratory system symptoms	r	0.13	0.10	0.05	0.13
	P	0.02	0.05	0.36	0.01
	No.	380	380	380	380
Urogenital system symptoms	r	0.16	0.13	0.05	0.16
	P	0.00	0.01	0.30	0.00
	No.	380	380	380	380
Skeletal musculature symptoms	r	0.16	0.15	0.07	0.15
	P	0.00	0.01	0.19	0.01
	No.	380	380	380	380
Skin symptoms	r	0.21	0.16	0.10	0.21
	P	0.00	0.00	0.08	0.00
	No.	380	380	380	380

4.7 Prediction of Psychosomatic Symptoms by Types of Traumatic Events

In a univariate linear regression analysis, each traumatic event was entered as an independent variable, with total psychosomatic symptoms and subscales scores as the dependent variable. Two traumatic events were significantly associated with total psychosomatic symptoms: being detained at home during incursion (B=0.16, p=0.01); and destroying of child personal belongings during incursion (B=0.14, p=0.03) (Table 6).

5. DISCUSSION

The results of our study showed that Palestinian adolescents had experienced a variety of traumatic events as a result of the War on the Gaza Strip in 2008-2009, as on average they reported a mean 14 traumatic events. The most commonly reported traumatic events were watching mutilated bodies on TV (92.3%). These findings were consistent with research on previous conflicts in the are [7,15]. An earlier study of 600 adolescents aged 12-16 years from South Lebanon and the Gaza Strip found that 29.8% of adolescents had experienced at least one high-magnitude traumatic event in their lifetime due to war; 19.8% involved a family member being killed, 12.5% a family member being injured, and 13.6% had had their house demolished [18]. Our result showed that boys experienced more traumatic events than girls was also consistent with other research [7,15,19]. This may be explained by the socialization of girls in the contemporary Palestinian society. Girls remain at home under stricter surveillance and protection, whereas boys participate in activities and events outside their home, which make them more vulnerable to exposure to trauma. In particular, according to the Arabic culture, girls are expending their time at home helping their mothers in homework.

There were also significant differences in experiencing traumatic events according to monthly family income, which indicates that adolescents of lower socioeconomic status are more at risk of experiencing traumatic events. We postulate such findings to the increased level of poverty due to the siege, and to the repeated wars in the area for the last decade [20].

Adolescents mean score of psychosomatic symptoms was 48.19 of with estimated weight 20.42%. Similarly, in a study of adolescents living in a devastating area struck by earthquake in the Wenchuan County in the Northwest Sichuan Province of China compared to a similar number from non-affected area showed that the psychosomatic factor scores of the experimental group were significantly higher than those of the control group [14]. Other studies indicated that extreme natural disasters contributed to psychosomatic symptoms among children and adolescents [21].

According to the results of the first nationwide epidemiological survey of neurosis or psychosomatic disorders among Japanese children, 5.8% of all children who visited the outpatient pediatric clinics on a given day were considered to have psychosomatic disorders [22].

There were no significant gender differences in psychosomatic symptoms, except for skin symptoms which were reported more by boys. Most studies do not find any gender difference in the prevalence of specific somatization disorders before puberty; in contrast, adolescent girls tend to report more symptomatology than boys [23,24]. In a study of 2,558 school children and adolescents aged 8–16 showed that 37.6% reported at least one somatic symptom, headache being the most prevalent. In terms of age distribution, 26.8% of children and 52.1% of adolescents reported somatic symptoms. Girls reported more somatic symptoms than did boys [25]. Also in previous research, headache and stomach-ache were more frequently reportedby girls than by boys [26].

This study showed positive significant correlation between traumatic events, including witnessing, hearing, and personal experiences, and psychosomatic symptoms. Our findings were congruent with previous studies which showed that exposure to traumatic events was predicating a range of child and adolescent psychopathology [27,28].

6. STUDY LIMITATIONS

There were few limitation in this study in which the scale for psychosomatic was long one and adolescents took time to finish it. Also, another limitation was we did not study other mental health problems such as PTSD and anxiety.

Table 6. Linear regression analysis of traumatic events and psychosomatic symptoms

Psychosomatic	Traumatic events	Unstandardized coefficients	Standardized coefficients			p
		B	Std. error	Beta		
Total Psychosomatic symptoms	Being detained at home during incursion	8.93	3.52	0.16	2.54	0.01
	Destroying of your personal belongings during incursion	8.08	3.73	0.14	2.17	0.03
Digestive system symptoms	Being detained at home during incursion	3.91	1.39	0.16	2.82	0.01
	Hearing killing of a friend	2.82	1.40	0.12	2.01	0.05
	Shooting by bullets, rocket, or bombs	-6.10	1.90	0.22	3.21	0.001
	Threaten of family member of being killed	4.94	1.76	0.19	2.80	0.01
Cardiovascular symptoms	Being detained at home during incursion	3.91	1.39	0.16	2.82	0.01
	Hearing killing of a friend	2.82	1.40	0.12	2.01	0.05
	Shooting by bullets, rocket, or bombs	-6.10	1.90	0.22	3.21	0.00
	Threaten of family member of being killed	4.94	1.76	0.19	2.80	0.01
Respiratory system symptoms	Threaten of being killed	1.36	0.37	0.19	3.71	0.00
Urogenital system symptoms	Deprivation from water or electricity during detention at home	0.98	0.34	0.16	2.92	0.00
	Hearing killing of a friend	0.64	0.32	0.11	2.00	0.05
Skeletal musculature symptoms	Threaten of being killed	1.02	0.41	0.14	2.53	0.01
	Deprivation from water or electricity during detention at home	1.04	0.44	0.13	2.34	0.02
Skin symptoms	Deprivation from water or electricity during detention at home	2.85	0.79	0.19	3.60	0.00
	Witnessing firing by tanks and heavy artillery at neighbors homes	2.01	0.74	0.15	2.73	0.01

7. FURTHER RESEARCHES

According to the results of this study further studies in the area are needed to narrow the knowledge gap including effect of trauma on mental health among families of traumatized adolescents, peritraumatic symptoms and acute traumatic stress among victims of last war in Gaza Strip on 2014, associations between trauma and psychosis: an exploration of cognitive and dissociative factors.

8. CLINICAL IMPLICATIONS

Our study showed that Palestinian adolescents experienced traumatic events due to war on Gaza Strip, which were associated with psychosomatic symptoms. There may be a risk of such trauma exposure in developing such mental health problems, although this could not be ascertained by the current cross-sectional research design. Nevertheless, such findings highlight the urgent need for establishing community mental health and school-based programs to help adolescents with such symptoms, initially by increasing awareness about their nature. Also, there is need for conducting training courses for teachers and school counsellors to increase their knowledge and recognition of mental health problems within schools, and ways of managing the simplest presentations, thus avoiding referral to sparse

specialist services. Furthermore, more training courses to educate paediatricians and primary care physicians will also be important in recognising these symptoms and not necessarily dismissing or attributing to physical causes, i.e. they need to liaise with mental health services. Overall, intervening in communities and schools will enhance opportunities for adolescents, their families, friends, teachers and professionals to promote their resilience and well-being. Establishing educational programs such as in problem-solving skills will assist young people in confronting various traumatic events in the face of ongoing adversity.

9. CONCLUSION

The importance of our study was in findings the impact of trauma due to war on psychosomatic disorders and not only PTSD in adolescents. Such finding highlights the need for more research in the field of somatization in the adolescents and in application of new intervention programs which increase coping and resilience of Palestinian adolescents to overcome in the negative impact of trauma on adolescents. Also, the need for community sessions for children and adolescents to increase their awareness about psychosomatic and somatization disorders and ways of dealing with such problems.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

REFERENCES

1. Caffo E, Belaise C. Psychological aspects of traumatic injury in children and adolescents. Child Adolescent Psychiatric. 2003; 12 (3):493-535.
2. Thabet A, Vostanis P. Impact of political violence and trauma in Gaza on children's mental health and types of interventions: A review of research evidence in a historical context. International Journal of Peace and Development Studies. 2011;8: 214-218.
3. Ministry of Health. Status in Palestine. Annual report. Palestinian Health Information center, Palestine; 2010.
4. Smith P, Perrin S, Dyregrov A, Yule W. Principal components analysis of the impact of event scale with children in war. Journal of Personality and Individual Differences. 2003;34(2):315-322.
5. Willem MO, Ventevogel P, de Vries G, Jansveld E, Cardozo B L, Carol A, Crawford G. Mental health symptoms following war and repression in Eastern Afghanistan. JAMA. 2004;292(5):285-293.
6. Al-Krenawi A, Wiesel R, Sehwail M. Psychological symptomatology among Palestinian male and female adolescents living under political violence. Community Mental Health Journal. 2006;43(1):49-66.
7. Thabet A, EL-Buhaisi O, Vostanis P. Trauma, PTSD, Anxiety, and coping strategies among Palestinians adolescents exposed to War on Gaza. The Arab Journal of Psychiatry. 2014; 25(1) :71-82.
8. Sadock BJ, Sadock VA. Kaplan & Sadock's synopsis of psychiatry; behavioral sciences/clinical psychology. (10th ed.). Baltimore: Williams & Wilkins; 2014.
9. Chrousos G, Gold P. The concepts of stress and stress system disorder. JAMA. 1992;267:1244.
10. Aruna P, Puviarasan N, Palaniappan B. An investigation of neurofuzzy systems in psychosomatic disorders. Expert Syst Appl. 2005;28 (4):673–9.
11. Greene JW, Walker LS. Psychosomatic problems and stress in adolescence. Pediatric Clinical of North America. 1997; 44(6):1557–1572.
12. Webster M. Psychological problems manifested by somatic symptoms. Journal of Adolescent Medicine. 1998;9(2):403-410.
13. Haj-Yahia MM, Tamish S. The rate of child sexual abuse and its psychological consequences as revealed by a study among Palestinian University students. Child Abuse and Neglect. 2001;25:1303–1327.
14. Xin-yang S, Hui-min F, Bo B, Hong-tao S, Feng-yan T, Zi-xiang S, Guang-ya Z, g& Jie S, Li-yi Z. Psychosomatic Conditions of the Children and Adolescents Exposed to 5.12 Wenchuan Earthquake . International Journal of Behavioural Medicine 2014; 21:730–735. DOI 10.1007/s12529-013-9377-z
15. Thabet AA, Abdulla T, El Helou M, Vostanis P. Effect of Trauma on Children Mental Health in the Gaza Strip and West Bank (Chapter in a Book, Eds.) Greenbaum CW, Veerman P, Bacon-Shnoor N. Protection of Children during

Armed Political Conflict: A Multidisciplinary Perspective. 2006;123-138.
16. Abu El Neil M. Psychosomtic disorders. Second Edit Ibrahimia Publisher: Cairo; 1994.
17. El Bahry A. Prevalence of Psychosomatic disorders among patients attending primary health care centers in Gaza Strip. Unpublished Master thesis School of Public Health Al Quds University; 2010.
18. Khamis V. Impact of war, religiosity and ideology on PTSD and psychiatric disorders in adolescents from Gaza Strip and South Lebanon. Social Science & Medicine. 2012;74(12):2005-2011.
19. 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.
20. Thabet AA, Abu Tawahina A, El Sarraj E, Vostanis P. Impact of siege on Palestinian children quality of life in the Gaza Strip. Arabpsynet E. Journal. 2009;24:101-107.
21. Mortimer AR. Mental health response to acute stress following wilderness disaster. Wilderness Environmental Medicine. 2010; 21(4):337–44.
22. Oki J, Eto T, Yamagata Z. Survey of neurosis and psychosomatic diseases among children in hospitals and schools in Japan. Jpn. J. Pediatr. Soc. 2001;105: 1317–23 (in Japanese).
23. Domènech-Llaberia E, Jané C, Canals J, Ballespí S, Esparó G, Garralda E. Parental reports of somatic symptoms in preschool children: Prevalence and associations in a Spanish sample. Journal of the American Academy of Child & Adolescent Psychiatry. 2004;43:598-604. DOI:10.1097/00004583-200405000-00013.
24. Vila M, Kramer T, Hickey N, Dattani M, Jefferis H, Singh M, et al. Assessment of somatic symptoms in British secondary school children using the Children's Somatization Inventory (CSI). Journal of Pediatric Psychology. 2009;34:989-998. DOI:10.1093/jpepsy/jsp005.
25. Acosta RK, Canals J, Martinez CH, Penelo E, Zolog TC, Laeria ED. Age and gender differences of somatic symptoms in children and adolescents. Journal of Mental Health. 2013;22(1):33-41.
26. Brian I, Stanley V, Cattsb R. Trauma, PTSD, and physical health: An epidemiological study of Australian Vietnam veterans. Journal of Psychosomatic Research. 2008;64:33-40.
27. Willemsen R, Vanderlinden J, Roseeuw D, Haentjens P. Increased history of childhood and lifetime traumatic events among adults with alopecia areata. Journal of the American Academy of Dermatology. 2008;60(3):388-393.
28. Sack M, Lahmann C, Jaeger B, Henningsen P. Prevalence of trauma and somatoform symptoms: Are there specific somatoform symptoms related to traumatic experiences? Journal of Nervous and Mental Disease. 2007;195(11):928-933.

Peer-review history:
The peer review history for this paper can be accessed here:
http://www.sciencedomain.org/review-history.php?iid=1066&id=21&aid=8916