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Post-Traumatic Stress Disorder and School Performance Among Adolescents Students in Baghdad

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Abstract

Background Post-traumatic stress disorder (PTSD) before adulthood has long-lasting effects on school performance among students, thus, early recognition and treatment are vital.

Objective To identify the effect of war trauma among secondary school students, test the rate of PTSD among students, and investigate the relationship between exposure to war trauma and effect on school performance.

Methods Total 108 (third intermediate class) students of both sex at two secondary schools. They screened by modified war trauma Questionnaire scale (CRIES-13) to diagnose PTSD and used impact on school performance scale.

Results The percentage of students who had >11 and above traumatic events during the preceding seven years was 38.9%. PTSD rate is 27.8% (above the cutoff point of 17 on children revised impact of events scale-13). PTSD rate is higher in females (63.3%) than 36.7% of males. The rate of impact on school performance is 43.5% (above the cutoff point of 21). The rate of impact on school performance is 83.3% among students with PTSD.

Conclusion The exposure to war trauma increases risk of PTSD among school children, number of traumatic events are high among adolescents, rate of PTSD is high in relation to events and higher in females than male and effect on school performance is high among students with PTSD.

Keywords Children, PTSD, school performance

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List of abbreviations: CRIES = Children revised impact of events scale, DSM IV = Diagnostic and statistical manual, fourth edition, PTSD = Post traumatic stress disorder, PTSS = Post traumatic stress symptoms, WWI = First world war, WWII = Second world war

Introduction

Post-traumatic stress disorder (PTSD) is categorized as a response to terrifying or disturbing events outside the range of usual human experience. It also has been considered a normal response to an abnormal situation, though when core symptoms of intrusion, avoidance and hyperarousal persist, the response risks becoming maladaptive. Some believe repeated exposure to excessive stress is among the criterion link to PTSD response in trauma survivors [(1)].

Iraqis witnessed and still witness the painful bloody and horrible sequence of explosive cars, which caused the death of hundreds of Iraqi people and many injuries in the country. In addition to explosion, many events happened in last seven years, for example; kidnapping, murder, armed robberies, torture, rape, kidnapping for ransom and sectarian problem.

A child may personally be the victim of physical violence and injury parent, sibling and other important people may be killed, injured, or

may disappear from his life without explanation, chronic fear, insecurity and chaos may result in trauma, loss of faith in the future, loss of trust in those who previously were his caretakers, even after the shooting stops. The child will be dealing with grief, trauma and demoralization and grow up around him [2]. So, PTSD is a syndrome that develops after a person sees, is involved in, or hears of an extreme traumatic stressor [3].

In Diagnostic and statistical manual, fourth edition (DSM IV) [4], PTSD is defined by four variables:

1. Exposure by personal experience or by witnessing an event which threatened or caused death and severe injury to self or other.
2. The person reacts to this experience with fear and helplessness.
3. Persistently relives the event through flashbacks, nightmares.
4. Try to avoid being reminded of it.

To make the diagnosis, the symptom must last more than one month after the event and most significantly affect important areas of life such as family, study and work.

The stressors arise from experience in war, torture natural catastrophes, assaults, rape, kidnapping and serious accidents [5].

PTSD in children and adolescents

Most studies have focused on adult high rates of PTSD have been documented in adolescents exposed to combat and other war related, community violence and natural disaster [6].

PTSD in adolescents may closely resemble PTSD in adults, however, there are few features that have been to differ, children may engage in traumatic play following a trauma. Adolescents are more likely to engage in trauma reenactment, in which they incorporate aspects of trauma into daily lives [7,8] .

In addition, adolescents are more likely than younger children or adults to exhibit impulsive and aggressive behaviors [9].

One important measure of functioning in children is school performance although some have minimized the impact of trauma on academic functioning, several studies have found diminished scholastic performance in children positive for PTSD or PTSD symptomatology [10].

Re-experiencing symptoms are common in traumatized children, although avoidance numbing and arousal may be more frequent in some situations, the avoidance/numbing cluster and arousal may be more pathognomonic [11].

Epidemiology

The lifetime prevalence of PTSD is estimated to be about 8% of the general population, epidemiological rates in adults for current and lifetime PTSD are 0.4 and 1.3%. [16], an additional 15% of adults are said to have many of the symptoms of PTSD. Through few studies have been conducted on the PTSD rate in children and adolescents, the National Center for PTSD [17] estimate that 15 to 43% of girls and 14 to 43% of boys have experienced at least one traumatic event. Of those children and adolescents, it is estimated that between 3 and 15% of girls and 1 to 6% of boys meet full criteria for PTSD [18].

In the case of Iraq, the population has been estimated to have elevated PTSD symptoms level by expert and non-expert alike but a figure has yet to be realized an important consideration for researchers and clinician is the likelihood that multiple trauma exposure will be common experience for many. Research on displaced Iraqi adolescents reported between four and five high magnitude stressors per individual e.g., Experience for bombardment, physical assault, attempted kidnapping and witness dead bodies [1].

High rates of PTSD have been documented in children exposed to such life-threatening events as combat and other war-related trauma, kidnapping, loss of parent(s). Studies on young victims or witnesses to criminal assault, and community violence have revealed high psychiatric morbidity «include post-

traumatic stress» following exposure to violence [11].

Specific factors that vulnerability to PTSD increase when prior traumatization compounded with successive traumatic events, these risks are also influenced by gender and individual difference such as preexisting psychiatric disorder, inadequate social support and genetic predisposition, low self-esteem, separation from parents before the age 10, being female [20].

The current study aimed to identify the effect of war trauma among secondary school students who were exposed to traumatic events of war and continued violence during preceding seven years, to find out the rate of PTSD among students and to investigate the relationship between exposure to war trauma and impact on school performance.

Methods

study place

The study was conducted in two intermediate schools for both sexes in Al-Mustansiriyah district, east of Baghdad during the period between 21-24 December 2009 at two schools.

a) Palatine intermediate school for boys; total number of students there was 850 (the school was exposed to bombardment since 2006 leading to death of two students and about forty injured and a teacher severely injured, so students remember the accident and everybody in school had experience with shell, bombing, shooting at close distance and witnessed dead bodies).
b) Al-Bashair intermediate school for girls in the same district; this school had (350) students as a total number.

Study sample

We decided to recruit the intermediate class students for both schools for the study, as they are mature enough to understand and answer the questionnaire which were basically designed for this age group and those have willingness to participate in study.

Two classes from each school were taken as blocks to avoid sampling bias. The total number of students who were recruited at the end for this study was 108, including 61 males and 47 females. Their age ranged from 14-16 years.

1. Two classes from Palestine school for boys, in which these were six classes at same level except for those who declined to do so or those who did not complete questionnaires.
2. Two classes from Al-Bashair school for girls. This situation was easier as there were only two classes at this level of 3rd intermediate, so we include all girls who were there except those who were not willing to be involved in the study or those who did not complete the questionnaires.

Ethical issues

1) Permission to conduct the study was taken from the authority in Baghdad (Ministry of education).
2) Consent form to perform the study was taken from the school director to facilitate the implementation of study.
3) Students were talked about the study and told they are in a research study exploring the effect of war trauma on school performance in their age, so given them enough time to talk to family and get their approval.
4) Verbal consent was taken from the students to participate in the study.
5) All questionnaires were coded a day before they were distributed to the students. The researcher was the only person who had the codes.

Tools

1. Modified war trauma questionnaire [32], this is a (44 item) questionnaire, that asks about traumatic events experienced by the student's subjects, and used to measure event that can happen in the life of adolescents or family. Respondents were required to indicate (yes or no). If the event happens to them or family in past years. (appendix 1)
2. The children's impact of event scale (CRIES-13): Self-report questionnaire was originally developed by Horowitz et al. (1979) to

monitor the main phenomenon of re-experiencing and of avoidance of that event and the feeling to which it gave rise [33]. It was not originally designed to be used with children, but it has been successfully used in a number of studies with children aged 8 years and older. However, studies found that number of items are misinterpreted by children, these studies identified identical factor structures of the impact of event scale and these were used to select eight items that best reflected the underlying factor structure and so produce shortened versions, the impact of event scale (CRIES - 13) for children. It is clear that post-traumatic stress symptoms in children are more similar across cultures than they are different, intrusion and arousal are robust factors of the impact of event scale in children from different cultures. Not at all =0, rarely =1, sometime=2, often=3. If the sum of the score on these two scales is 17 or more, then the probability is very high that the child will obtain a diagnosis of PTSD [34].

3. Impact on school performance scale: Self-report questionnaire, this is a (17 item) used in children as young as to measure school performance. There are 17 items that are scored on a four-point scale; not at all = 0, rarely =1, sometime =2, often =3. There are four reverse items in the scale [6,13,14,17]. If the sum of the scores on these scales is 21 or more, then the probability that child will have an impact on school performance. The scales were used previously in many studies on adolescents and translated into Arabic.

Results

The study sample consists of 108 students third intermediate class rang age 14-16 years, 61 males and 47 females.

Types of traumatic events were multiple; most of them experience shooting at very close distance 73.6%, witnessed explosion 63.6%, witnessed someone injured 47.2%, witnessed someone who was killed 44.5%, family received threat to life 36.3%, witnessed someone tortured 29.0%, kidnapped 13.6% (Table 1).

Table 1. Types of events among students

Type of event	No.	%
Experienced shooting at very close distance	81	73.6
Experienced shelling on bombing or a car explosion at every close distance	70	63.6
Eye witnessed someone who was injured	52	47.2
Eye witnessed someone was killed	49	44.5
Family received threats to life	40	36.3
Have been in a situation during the war when you thought you would be killed	40	36.3
Eye witnessed that someone was tortured	32	29.0
Eye witnessed massacres (the killing of many people at the same time)	17	16.3
Forced by violence to leave your home	16	15.4
Been kidnapped	15	13.6
Helped, carried or been contact with injured or killed person	13	11.8
Home been attacked or shelled	7	6.3

Number of students = 108

The number of frequencies of traumatic events are single in 5.6% and multiple in 94.4% of study sample, eleven and above traumatic events was the most frequent of multiple 38.9% (Table 2, Figure 1).

Table 2. Frequency of traumatic events during past 7 years (from 2003-3009)

No. of incident	No. student	%
1-2	6	5.6
3-4	10	9.3
5-6	13	12.0
7-8	17	15.7
9-10	20	18.5
11 and above	42	38.9
Total	108	100

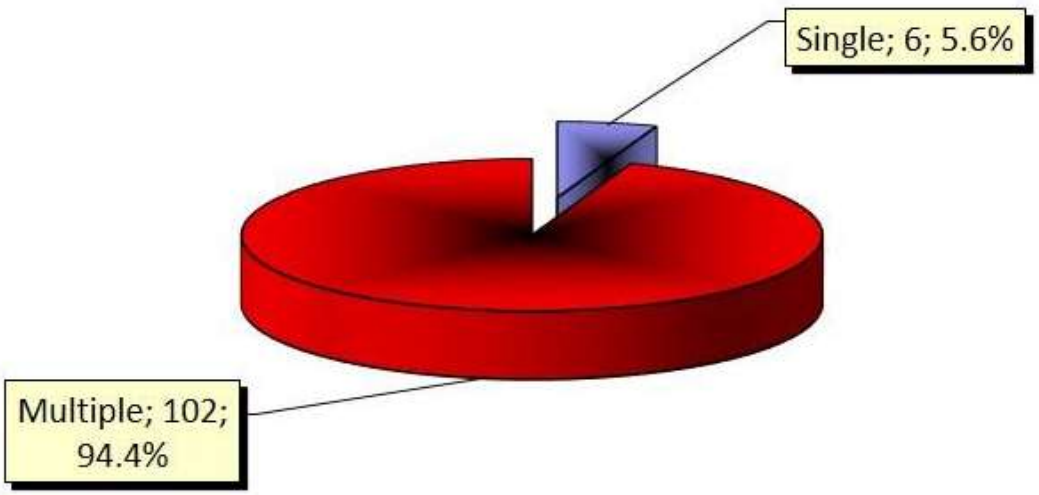

Figure 1. Rate of single and multiple traumatic events

The rate of positive cases of PTSD among students was 27.8% according to (CRIES-13) see (Figure 2).

The number of students who are exposed to multiple trauma events more than eleven are 42 students of study sample and 20 (47.6%) of them diagnosed as PTSD but 22 (52.1%) of them not having disorder (Table 3).

The rate of PTSD in student sample according to sex was higher in 63.3% in females and 36.7% in males (Table 4).

The rate of impact on school performance among student samples is 43.5% (Figure 3).

The rate of impact on school performance among students with PTSD is 83.3%. The number of students whose impact on school performance is 47 (43.5%) of the total sample and 25 (83.3%) of those diagnosed as PTSD but 22 (28.2%) of them not diagnosed as PTSD (Table 5).

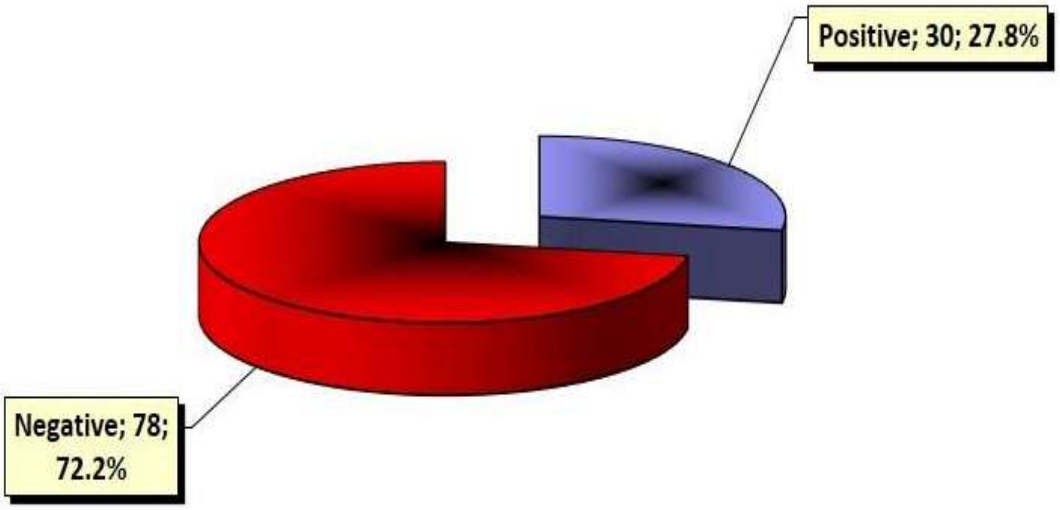

Figure 2. Rate of post-traumatic stress disorder among students' sample

Table 3. Frequency of traumatic event in relation to post-traumatic stress disorder

Trauma event	PTSD		Non-PTSD		Total	
	No.	%	No.	%	No.	%
1-10	10	15.2	56	84.8	66	61.1
11 and above	20	47.6	22	52.4	42	38.9
Total	30	27.8	78	72.2	108	100

P=0.0002 (Highly significant) using Pearson chi-squared test at 0.05 level of significance

Table 4. Rate of post-traumatic stress disorder among students' sample in relation to sex

Sex	PTSD		Non-PTSD		Total	
	No.	%	No.	%	No.	%
Male	11	36.7	48	61.5	59	54.6
Female	19	63.3	30	38.5	49	45.4
Total	30	27.8	78	72.2	108	100

P=0.020 (Significant) using Pearson chi-squared test at 0.05 level of significance

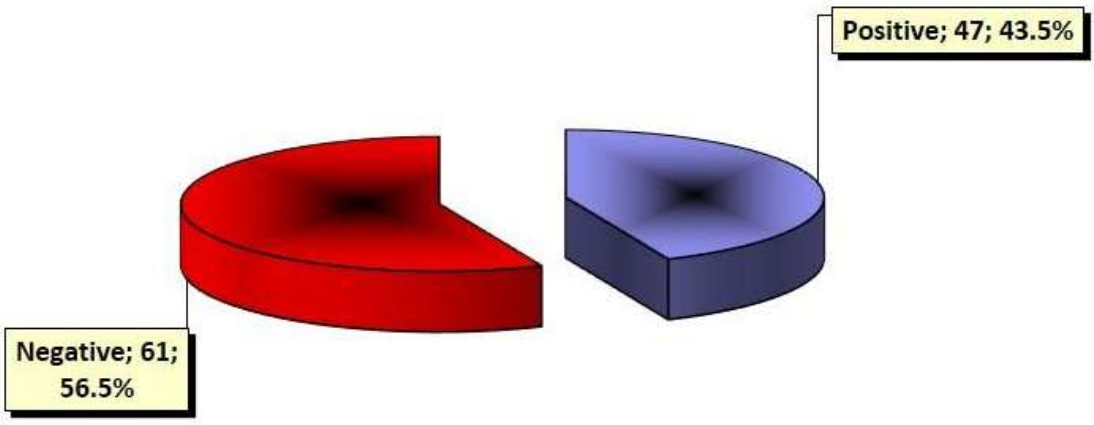

Figure 3. Rate of impact on school performance among student sample

Table 5. Rate of impact on school performance among student with post-traumatic stress disorder

Student	Impact on school performance				Total	
	Positive		Negative			
	No.	%	No.	%	No.	%
PTSD	25	83.3	5	16.7	30	27.8
Non-PTSD	22	28.2	56	71.8	78	72.2
Total	47	43.5	61	56.5	108	100

P=0.0001 (Significant) using Pearson chi-squared test at 0.05 level of significance

Discussion

The present study revealed that the rate of PTSD in students sampled according (CRIES-13) is 27.8%, and this result is concomitant with the studies of the National Center for PTSD, which estimate that 15-43% have experienced at least one traumatic event [(4)].

PTSD was higher in rate among students who had multiple traumatic experiences, 42 (38.9%) of the sample had more than eleven traumatic events during the preceding seven years and 20 (47.6%) of them diagnosed as PTSD but 22 (52.4%) of them not diagnosed as having PTSD.

Not everybody who is exposed to severe trauma will develop symptoms of stress reaction, and the majority of those who develop the acute stress reaction will get better in a few months while a minority will continue to suffer.

In this study, the percentage of PTSD response is higher in females than males (63.3% and 36.7% respectively), which is concomitant will all studies that have investigated gender as risk factor have found that females are more likely than males to develop PTSD.

The rate was found to be relevant in comparison with other studies from Iraq and other countries, which measured the rate of PTSD among adolescents. A study carried out in Iraq by Salim (2005) [(35)] studied the prevalence of PTSD among secondary schools' students in Baghdad, sample was 389 secondary schools' students for both sexes, mean age 16 years using semi structured interview base on (DSM-IV) criteria, the study showed that the rate of PTSD is 25.4% and higher in females.

The relative difference between the present study and Yousif, was that he studied the rate of acute PTSD after two months of severe trauma (explosion of three cars in Hay-Alamil city in Baghdad) and using in his study a semi

structured interview based on (DSM-IV) criteria for diagnose acute PTSD.

In other study carried out by Snell & Ali (2008) [32] on displaced Iraqi adolescent living in Amman and who have arrived to Jordan after the war in 2003 showed that rate of PTSD was 15% using CRIES-13.

The present study showed that rate of impact on school performance among students of PTSD is higher in comparison to (Snell & Ali) [32], this finding may be due to change in place to avoid (avoidance and hyperarousal)) situation and less rate of trauma exposure than present study.

In other study of adolescents carried by Peltzer (1998) [36] studied for traumatic experiencing and PTSD in South African using child PTSD checklist and life event questionnaire adolescent's version, high-rate PTSD of violence exposure, ranging from 67% to 95%, with 8.4% to 40% of children less than 17 years of age fulfilling PTSD diagnostic criteria. This study shows a positive relationship between extent of exposure to trauma and development of PTSD and higher rate of PTSD than present study. In present study, not everybody who is exposed to severe trauma developed PTSD because most people relied on helping themselves, helping each other and getting support from their religion and the society, at the same time avoiding being stigmatized or labeled as mental ill.

Also study the percentage of impact on school performance according to impact on school performance scale is 47 (43.5%) and reveal that impact on school performance among students is higher in students with PTSD. Students whose impact on school performance is 47 (43.5%) of total sample and 25 (83.3%) of those diagnosed as PTSD but 22 (28.2%) of them not diagnosed as PTSD, so other causes of impact on school performance rather than PTSD like depression and anxiety because student are living under continuous stress and fear about their own safety, fear of being shot, fear of being killed in cross fire and fear of car bombs that spare no place or time.

School refusal, which in most cases is fear of the real danger of explosion, multiple fear (fear of arms and fear of darkness), enhanced startle reaction, conduct disorder, hyperactivity, aggression; these problems of change behavior and concentration, attention and social interaction lead to decrease school performance.

Limitation of this particular study: the sample size was relatively small because each paper was filled by the interviewer when he was reading and clarifying each question in the questionnaire. Also, there is the likelihood that some of the students did not answer all the questions correctly as those questions, which may be reminders of the traumatic situation, which they may experience, may increase their stresses and they may avoid answering them correctly.

In conclusion, the study revealed the following:

1. The rate of PTSD among adolescent students is 27.8%, and 38.9% of the student sample had more than eleven traumatic events during the preceding seven years.
2. The rate of PTSD is higher among females than males (63.3% and 36.7%).
3. The rate of PTSD was affected by exposure to traumatic events, parent death, closed family members killed and high in students with personal loss of family or injury in the traumatic events.
4. The rate of impact on school performance among students is 43.5% and higher in those students with PTSD which is about 83.3%.
5. The difference between percentage of impact on school performance and percentage of PTSD among students reveal that other causes effect on school performance rather than PTSD like anxiety, depression and widespread symptomatic traumatic behavior ranging from nightmares and increased aggression and hyperactivity as well as decrease at tension span and concentration capacity.

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Author contribution

All authors participated in study design, acquisition of data, analysis, interpretation of data and drafting the manuscript.

Conflict of interest

Authors declare no conflict of interest.

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