

# Normative Life Events and PTSD in Children: How Easy Stress Can Affect Children's Brain

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**Abstract-** Exposure to traumatic events is common in children and adolescent. Post traumatic stress disorder (PTSD) is an emotional reaction to traumatic events, which is increasingly recognized to be a prevalent and disabling disorder. The aim of this study is to determine the distribution of normative life events which predicts PTSD in youth who referred to an outpatient clinic in Rasht, Iran. This study is a cross-sectional descriptive study. The samples of children and adolescents ranging from 1-18 yr old who were diagnosed PTSD based on DSM-IV criteria in psychiatric interview and K-SADS (Kiddie-schedule for affective disorder and schizophrenia for school age children) semi-structured diagnostic interview, from 2005 until 2008. The information consist of: age, sex, comorbidity with PTSD, events accompanying with PTSD, and time interval between events and visit. Eighty four youth who met the diagnosis of PTSD and their parents participated in the survey. Half of PTSD youth were 6-11 years old and admitted to clinic in the first 3 months after events. The most common events were witnessing violent or fearful scenes on TV followed by witnessing someone's death or funeral ceremony. The most comorbidity with PTSD included: attention deficit hyperactivity disorder, depression and anxiety. Our results indicate that youth exposure to violent or fearful scenes on TV could be very traumatic for them. Informing parents about the potential effect of low-magnitude stressors such as violent or fearful scenes on TV and funeral ceremony can decrease the prevalence of PTSD in youth.

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## Introduction

Exposure to traumatic events is common in children and adolescents. Post traumatic stress disorder (PTSD) is an emotional reaction to traumatic events (1), which is increasingly recognized to be a prevalent and disabling disorder in children and adolescents, in both the developed and the developing world (2). Actually children and adolescents are susceptible to developing PTSD (3). Early PTSD research focused on Vietnam War veterans and rape victims, learning to a narrow definition of the stressors criteria in the DSM III and DSM III R. The criteria in the DSM IV include a wider range of events such as serious illnesses, natural disasters, and exposure to community violence (4).

Most of the studies of early life stressor have focused on childhood abuse, neglect (5), or to a specific trauma such as natural disaster, motor vehicle crash, violent crimes and sever illnesses (2-4,6).

Recent researches on childhood PTSD, has added to the list of potentially traumatic events, such as sudden separation from a loved one or learning of a traumatic events that occurred to a parent or a loved one (4).

Giaconia *et al.* found that a parent being sent to prison exposed adolescents to the same risk of PTSD as rape did. They stressed that those who work with adolescents should not underestimate the potential of a wide range of traumatic events that provoke PTSD in adolescents (7). Copeland *et al.* in their longitudinal study from a community based sample of 1420 children and adolescents in 2007 showed that, violent or sexual trauma were associated with the highest rates of PTSD symptoms (4). They concluded in 2010 that a sizable proportion of children manifesting post traumatic stress symptoms experienced only a low magnitude stressor (8).

Rossmann *et al.* found, potentially life-threatening experience like parental violence and a dog attack,

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elevated PTSD symptoms in children (9).

Mcclosky *et al.* results from PTSD in school age children indicating that death or illness of someone close to the child posed the strongest risk factor for PTSD (10).

Luthra *et al.* found that, confrontation with traumatic news, witnessing domestic violence, physical abuse, and sexual abuse are each significantly associated with PTSD (11). Studies showed that parents, teachers and even mental health professionals significantly underestimate both the intensity and the duration of the stress reactions in children (3).

On the other hand childhood trauma can affect person's development and may lead to future disorder (12). There are some studies about negative neurobiological sequels associated with a history of early trauma or stress, early in development, for example reduced medial and posterior corpus callosum areas of brain (13).

Perkonigg *et al.* in 2005 concluded that PTSD is often persistent and chronic disorder (14) that causes high degree of morbidity in children (15).

While there has been widespread interest in studying victims of a specific type of traumatic events, there seems to a remarkable lack of studies that include wide range of traumatic life events or low-magnitude stressors which potentially provoke PTSD in children.

The aim of this study was to determine the distribution of normative life events which predicts PTSD in children.

## Materials and Methods

### Design and procedure

This cross-sectional study was conducted to show the frequency of normative life events in PTSD youth, who admitted to child and adolescent psychiatric outpatient clinic in Shafa hospital, Rasht, Iran, from 2005 until 2008.

Informed consent was obtained from all patients and their parents following a full explanation of the procedure undertaken. We did not use the real names of youth and the design of study approved by the ethical committee of Guilan University of Medical Sciences. The interview was designed based on child and adolescent psychiatric assessment and Kiddie-schedule for affective disorder and schizophrenia for school age children (K-SADS).

### Subjects

Eighty four youth who met the diagnosis of PTSD

were surveyed.

To meet the criteria for PTSD, experience of an 'extreme stressor' must be associated, with a characteristic syndrome that include: 1) persistent re-experiencing of traumatic event which include recurrent and intrusive distressing recollections, dreams, illusions, nightmares, reenactment or repetitive plays, 2) avoidance of stimuli associated with the event, include distress or physiological reactivity at exposure to cues symbolizing or resembling the traumatic event and 3) increased arousal, as an increased general level of awareness and alertness toward the subject's surroundings, in the absence of imminent danger (13). These symptoms affect the function of youth. In this study we included youth who had full criteria of PTSD.

### Measures

An interviewer-based interview according to DSM IV criteria of PTSD conducted with parents and child or adolescents separately by a child and adolescent psychiatrist.

The interview includes: 1) questions about a wide range of events, 2) a screen for key PTSD symptom (re-experiences, avoidance/numbing, hyper vigilance) and 3) detailed interview including onset, duration, and severity and comorbidity.

K-SADS which is a semi-structured diagnostic interview to assess current, past, and life time diagnostic status in children and adolescents, (16) were used for the diagnosis of PTSD and other psychiatric comorbidities based on DSMIV criteria. This measure's validity and readability assessed in Iran in 2009 (17).

### Statistical analysis

Descriptive statistics was used for sociodemographic variable and comorbidities. Age divided to age group and time interval between events and visit divided as three groups of duration from event to admonition.

This analysis were conducted Suring the statistical package for social sciences (SPSS version 13) and the output described by cross tabs and frequency tables.

## Results

Eighty four youth and their parents participated in the survey. Their demographic characteristics are shown in the table 1.

Half of PTSD youth were 6 to 11 years old and admitted to a clinic in the first 3 months after events.

**Table 1.** Demographic characteristic of PTSD youth.

Characteristic	Number	Percent
Sex		
Male	49	58.3
Female	35	41.7
Age group, (year)		
1-5	22	26.2
6-11	41	48.8
11-18	21	25
Time interval between events and visit (month)		
1-3	41	48.8
4-6	16	14
> 7	27	32.2

**Table 2.** ADHD, Depression and Anxiety Disorders were the most frequent diagnosis in PTSD youth.

Type of disorder	Number	Percent
OCD	7	9.3
Depression	17	22.7
ADHD	22	29.4
GAD, SAD	10	13.3
Phobia	6	8
Night terror	1	1.3
Enuresis	2	2.6
Tic disorders	5	6.7
MR	3	4
GID	2	2.7

**Table 3.** Relative frequency of events PTSD.

Type for trauma	Number	Percent
Witnessing or learning motor vehicle crash	8	4.5
Witnessing or learning physical or verbal violence	6	7.1
Witnessing someone's death or funeral ceremony	13	15.5
Witnessing fearful scene on TV or video	28	33.3
Being the victim of sexual abuse	5	6
Being the victim of physical abuse	7	8.3
Being the victim of natural disaster	4	4.8
Learning about fearful events	4	4.8
Other events	9	10.7

Youth with PTSD displayed comorbidities, which is shown in the table 2.

Attention deficit hyperactivity disorder (ADHD), depression and anxiety disorders were the most frequent diagnosis in PTSD youth.

The Relative frequency of events with PTSD is shown in table 3. The most frequent event was violent or fearful scenes on TV (28%) include: news, films, and even animations. Followed by and witnessing death or funeral ceremony (13%).

Other types of traumatic events were: looking accidents scenes (8%), physical abuse (5%), sexual abuse (4%) and talking about frightening scenes (4%).

## Discussion

The analysis of cross-sectional data from child and adolescents outpatient clinic showed that, first, the most common events were witnessing violent or fearful scenes on TV followed by witnessing someone's death or funeral ceremony. Second, most of them admitted to a clinic in the first 3 months. Third, most type of

psychopathology in PTSD youth were ADHD, anxiety and depression.

In present study we only included full blown PTSD youth. The exclusion of subclinical cases could show the importance and potency of low magnitude stressor. So, even low magnitude stressor can precipitate full criteria of PTSD in children and adolescents.

Our results indicate that, youth exposure to violent or fearful scenes on TV could be very traumatic for them. These scenes include: real news from war or terrorism, films and even animations. It could be consistent with Copeland *et al.* results from their community sample with the most common events were witnessing or learning about violence (4). The second group of events depends on witnessing someone's death or funeral ceremony. It could be someone close to youth or even stranger. From 13 youths in this group, 7 of them exposed to a stranger's death. So, it seems in this study the symptom of PTSD was not only consequences of loss, but also witnessing of death or seeing a dead body. This finding could be consistent with the results of Copeland *et al.* in 2010, which they concluded: "most

children with PTSD symptoms following low-magnitude events developed these symptoms following death of a loved one” (8). Our result is also partially consistent with McCloskey *et al.* witnessing death characteristically associated with symptoms of PTSD, but they stressed on the effect of loss more than traumatic effect of death separately. They concluded: “death or illness of someone close to the child is the most important risk factor for PTSD and children are less affected when they witness mortality of strangers” (10). Further studies with more sample size may differentiate the role of closeness in witnessing death.

We had only 5 victim of sexual abuse. This could be for under reporting of these cases because of cultural limitations especially in the eastern counties.

High degree of comorbidity in this study is consistent with other previous studies (15), and can show the value of early diagnosis and treatment in this children and adolescents. In conclusion, our results indicate that youth exposure to violent or fearful scenes on TV could be very traumatic for them. Also, witnessing death or funeral ceremony, especially in eastern culture may provoke PTSD in children and adolescent.

### Limitations

We included youth who had full blown criteria of PTSD. However, children may suffer from post traumatic stress symptoms with sub-threshold levels of symptom criteria. We relied on the youth and their parent’s information about traumatic events. This could cause recall bias for the estimation of the potentially traumatic events. Events such as sexual abuse may be under reported.

### Practice implications

Informing parents about the potential effect of low-magnitude stressors such as violent or fearful scenes on TV and funeral ceremony may decrease the prevalence of PTSD in children and adolescents.

Youth with PTSD in this study show high comorbidity with ADHD, depression and anxiety disorders. The high comorbidity of youth with PTSD indicates the need for broad assessment of traumatized person. This comorbidity may be before or after the developing of PTSD, but they need the treatment and they can affect the prognosis of PTSD.

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