

PREVALENCE OF POST-TRAUMATIC STRESS DISORDER AND CO-MORBID DEPRESSION IN EARTHQUAKE SURVIVORS IN NWFP, PAKISTAN: A PRELIMINARY STUDY

Unaiza Niaz, Sehar Hassan, Mehar Hassan, Haider Hussain, Shahnaz Ahad

ABSTRACT

Objective: To obtain preliminary statistics of prevalence of Post-traumatic stress disorder (PTSD) and co-morbid depression in earthquake survivors.

Design: Cross sectional survey.

Place & Duration of study: A total of 155 people were interviewed from earthquake hit areas. The sample includes (N=105) staff and students of Jinnah Commerce College Mansehra, and (N=50) earthquake relief camp survivors in NWFP of Pakistan. These survivors volunteered to be interviewed during IPTP team's visit to these centers.

Subjects & Methods: PTSD and depression was assessed by Traumatic Stress Symptom Checklist (TSSC). Demographic information was obtained by a detailed Survivor Information Form (SIF). Descriptive statistics are used to present the results.

Results: The mean age of the respondents was 22 years (S.D. =8.5). 70% of them were males. 41% had high school education. 23% had lost their first degree relatives and 60% their second degree relatives, 55% reported loss of property. The rate of PTSD was 37% when the responses of the participants were evaluated on 17 PTSD items of scale. 23% suffered from PTSD and co-morbid depression. Proximity to epicenter, loss of family members, and damage to property were found to be associated with PTSD in survivors.

Conclusion: The rates of PTSD and depression in earthquake survivors are fairly significant. The earthquake survivors may require specialized intervention at some stage. Clearly, mental health issues of survivors of earthquake will require immediate and long-term follow-up. This would ensure adequate rehabilitation process.

Keywords: Post-traumatic stress disorder, Depression, Earthquake survivors, Risk factors.

INTRODUCTION

Post-traumatic stress disorder (PTSD) is known to occur after catastrophic events like wars, earthquakes, serious accidents etc. PTSD symptoms include anxiety,

Unaiza Niaz, M.D .DPM F.R.C., Psych, Director, (IPTP), The Psychiatric Clinic & Stress Research Center, 6C, 7th, Commercial Lane, Zamzama Boulevard, Phase V, D.H.A. Karachi, Pakistan. E-mail: drunaiza@cyber.net.pk.

Sehar Hassan, M.Sc. Beh. Sc. (Counselor, IPTP)

Mehar Hassan, Dip.in Clinical Psychology; Director, Association of Children with Emotional and Learning Problems. (Senior Clinical Psychologist, IPTP)

Haider Hussain, M.B.B.S. Postgraduate in Psychiatry. (Coordinator, IPTP)

Shahnaz Ahad, M.A., Social Sciences Social Worker and Counselor, The Kidney Foundation.(Counselor, IPTP).

Correspondence:
Dr. Unaiza Niaz

recurrent nightmares, flashbacks, fear, increased startle response and hyper-vigilance. These symptoms last for more than 1 month and can last to several years. PTSD significantly disrupts the normal functioning and quality of life of the sufferers. The current psychotrauma literature suggests that many factors like exposure to trauma, degree of loss, intensity of fear, history of mental illness etc are related to the increased risk for PTSD.

The disastrous 8th October earthquake in Northern areas of Pakistan and AJK resulted in massive destruction with total loss of infrastructure, and serious injuries to the sufferers. The survivors of the earthquake faced numerous problems after this catastrophic event. Consequently, these stressors might result in development of certain psychological problems in victims, specifically, Post-traumatic Stress Disorder (PTSD), depression and anxiety.

Paucity of community prevalence data from the developing world often results in assumption that PTSD is nonexistent, or its prevalence is negligible in non-western countries. However, in the presence of risk factors such as frequent natural calamities amid poor resource for relief and rehabilitation provisions, delayed and insufficient post disaster interventions in the Asian sub-continent and the Far East countries,¹ mental health professionals have observed and documented significant prevalence of PTSD, depression and anxiety.

A population-based study measuring psychological distress among the survivors of Bam earthquake in Iran showed that 58% of the respondents suffered from severe mental distress. This was three times higher than reported psychological distress among the general population. Female gender, lower education, unemployment, and loss of family members were found to be associated with severe psychological distress among earthquake victims. Most of the individuals suffering from PTSD do not seek professional intervention for their symptoms because of lack of awareness.

It is essential that the longitudinal studies are conducted in earthquake hit areas of Pakistan. Lack of such data has its individual and societal costs in terms of emotional pain and suffering. It also has an effect on the productive capacity and consequently the process of healing will have to be measured in terms of generations, rather than years³.

Keeping in view the importance of identification of PTSD among sufferers of 8th October earthquake, present survey was conducted with the aim to obtain some preliminary statistics. Present survey assessed the presence of Post Traumatic Stress Disorder (PTSD) and co-morbid depression among earthquake survivors in NWFP. Limitation of resources did not allow conducting a large population based study at that time. A small cross-sectional survey was carried out to obtain preliminary statistics for the identification of problem.

SUBJECTS AND METHODS

A total of 155 people were interviewed from earthquake hit areas. The sample includes staff and students of Jinnah Commerce College Mansehra, (N=105) and Earthquake Relief Camp Residents in Havelian, NWFP (N=50) who volunteered information.

The data was collected four months after the event. A team of Psychiatrists and Psychologists on their visit to earthquake hit areas interviewed the participants to assess PTSD and co-morbid depression. The data was collected in the Relief Camps. The participants were interviewed in more structured settings at Jinnah Com-

merce College, Mansehra. The data was gathered while the team offered the psychological help to survivors.

PTSD and co-morbid Depression were assessed by Traumatic Stress Symptoms Checklist (Basoglu)⁴. TSSC examines whether the respondent has experienced a particular symptom in the last one month. Each item was rated on a four-point scale. Basoglu, et al used a cut-off score of more than 38 for identification of PTSD and co-morbid depression on all 23 items of the checklist and a cut-off score of (>24) on first 17 items was used for identification of PTSD only. We decided to use same cut off scores for our sample.

Demographic information was obtained by a detailed Survivor Information Form (SIF). It is a 28-item form for demographic data, personal and family history, degree of loss and other trauma characteristics. Descriptive Statistics were used to analyze and present the data.

RESULTS

We interviewed 155 participants. The participants from Relief Camps were n=50(33%) and from Jinnah College n=105(67%).

The mean age of Jinnah college group was 19 (SD=2.6) while mean age of relief camp residents was (SD=11.8). Eighty one (77%) percent respondents from Jinnah college group and 28(56%) from relief camp residents were males while 24(23%) from Jinnah college and 22(44%) from relief camp were females. Respondents from Jinnah college group were highly educated with mean years 5.2(SD= .80) of education while majority of relief camp residents were illiterate with mean years 4 (SD=1.7%) of education. Seven percent from both groups had previous history of psychiatric illness, 11% had family history of psychiatric problems, and 12% also had history of past trauma.

Majority of the earthquake survivors 68(64%) from Jinnah College group belonged to Mansehra while only 37(35%) were from areas close to epicenter region. They faced less degree of loss. Most of them were living in their homes or in hostel of the college at the time of the earthquake. Thirty six (69%) survivors in relief camps, belonged to areas close to the epicenter while only 14(27%) were from other earthquake regions. Many of them were trapped under rubble in earthquake.

Both groups' respondents had suffered from severe degree of loss (loss of family members, loss of property, physical injuries. Twenty three percent of the respondents from both groups reported loss of first degree relatives, 60% lost second degree relatives, and 53% lost their friends & neighbors in the earthquake. Loss of property was reported by 55% while 32% reported collapsed

homes after earthquake. Eight percent reported that they got trapped under the rubble. Intense fear during earthquake was reported by 85%. (See Table.1.)

The Survivors From Jinnah College Group Were Compared On The Following Variables With Those From Relief Camps.

Table 1
Demographic information obtained by a detailed Survivor Information Form (SIF).
(N= 155)

Variables	Jinnah College Group (n=105)	Relief Camp Residents (n=50)
Mean Age & standard deviation	19±2.6	29±11.8
Male	81(77%)	28(56%)
Female	24(23%)	22(44%)
Mean Education & standard deviation (1-6)a	5.2±.80	4±1.7
Past history of Psychiatric Illness	6(5.7%)	6(12%)
Family history of Psychiatric Illness	19(14%)	7(14%)
Previous Trauma Experience	15(14.3%)	5(10%)
In Epicenter Region	37(35%)	36(69%)
In Mansehra Region	68(64%)	
In other earthquake regions		14(27%)
Trapped under rubble	1(1%)	12(24%)
Lost Family Members	15(14.3%)	22(44%)
Lost Second Degree Relatives	60(57%)	33(66%)
Lost Friends and Neighbors	53(50%)	30(60%)
Participated in rescue work	63(60%)	24(53%)
Lost Property	45(42.9%)	41(82%)
Mean Extent of damage to home& standard deviation (1-5)b	2.7±1.4	4±1.5
Presence of Fear	89(84%)	44(87%)

- a. 1=no schooling, 2=literate, 3=primary school, 4=secondary school, 5=high school, 6=post-graduate studies
- b. 1=no damage, 2= minimal damage, 3=moderate damage, 4= severe damage, 5=collapsed

Further findings showed that 26% of the respondents suffered from PTSD co-morbid depression. The rate of PTSD rose to 37% in this sample when the responses of participants were assessed on first 17 items of checklist which assessed PTSD only. (See Table 2)

Table 2
Estimated Prevalence of PTSD and Co-morbid Depression (N=155)

TSSC (17 PTSD + 6 Depression Symptoms) (a score of >38)	TSSC (17 PTSD Symptoms) (a score of >24)
26%	37%

Estimated Prevalence of PTSD and Co-morbid Depression in two Groups: The findings showed that 50% of the respondents suffered from PTSD co-morbid depression in Relief Camp Group and 15% in Jinnah College Group. The rate of PTSD in both groups rose to 60% and 23% respectively when the responses of participants were assessed on 17 PTSD items. The results are shown in Table 3.

Table 3
Estimated Prevalence of PTSD and co-morbid Depression (N=155)

Rating Scale	Relief camp Residents (n=55)	Jinnah College Group (n=105)
TSSC (23 items including PTSD and Depression) (a score of >38)	50%	15%
TSSC (17 PTSD Symptoms) (a score of >24)	60%	23%

DISCUSSION

Present study findings show that rates of PTSD in earthquake survivors are markedly high four months after the earthquake. The rates of PTSD vary due to presence or absence of certain trauma characteristics. The findings of the study give clear indication of presence of PTSD in survivors. 26% of the respondents scored above the cutoff score on Traumatic Stress Symptom Checklist and 37% of the respondents scored above the cutoff score on 17 PTSD symptoms of checklist. The findings of our study are supported by the results of studies from other parts of the world. A study by Livanou et al in Turkey, 14 months after earthquake showed that the rates of PTSD was 23% among people living in epicenter areas. The strongest predictors of traumatic stress symptoms were fear during the earthquake. Female gender, past psychiatric illness, damage to home, participation in rescue work, past trauma, and loss of family members, were found to be associated with PTSD. ⁵ A pre-

liminary report by Sharan et al on psychiatric morbidity for Latur survivors showed a high prevalence of Acute PTSD⁶.

Findings of our study showed that rate of PTSD in college students (mean age=19yrs) was 23%.. Other studies have also shown that adolescents may develop PTSD after exposure to earthquake in range of 21-70%^{7,8}. Karanci, A.N. & Rustemli, investigated the symptoms of posttraumatic stress disorder (PTSD), depression and anxiety in adolescent students three and a half years after the Marmara earthquake in Turkey. Their findings showed that 1.8% had very severe, 20.4% had severe and 38.3% had moderate symptoms of PTSD. They found that 22.2% had probable PTSD and 30.8% had probable depression diagnoses⁹.

In our sample the two groups (Relief Camp Residents and Jinnah College Group) differed markedly in certain characteristics like education, degree of loss, proximity to the epicenter, nature/intensity of problems they were facing after the earthquake. Consequently the rates of PTSD also varied amongst two groups quite remarkably. The rates of PTSD and co-morbid depression were also different in two groups. 50% of relief camp residents had PTSD co-morbid depression, while 23% in Jinnah College group were diagnosed with PTSD and co-morbid depression. The findings of this study are consistent with other studies where female gender, lower education, and lower socio-economic status were found to be related to higher PTSD and depression among earthquake survivors. A common finding in another Turkish earthquake study was that proximity to the epicenter and the magnitude of disaster related experiences are the most powerful predictors of PTSD¹⁰. This supports the findings of present study. In our study the participants from Relief Camps belonged to epicenter region (69%) or areas close to the epicenter (27%). These participants had severe nature of disaster related experiences with consequent increased reported PTSD (60%).

The recent study by Basoglu et al¹¹ has shown a differential predictor pattern for PTSD and depression among earthquake survivors. It has indicated that although certain factors (e.g. grater fear during the earthquake and female gender) relate to PTSD, lower education and loss of family members tend to relate more to depression and not to PTSD. The results of our study have also shown variation in rates. PTSD was 37% and PTSD co-morbid depression was 26% in earthquake survivors. This suggests that when interpreting the study results, some factors (e.g. grater fear during the earthquake and being trapped under rubble, previous trauma) might relate to PTSD while other factors may relate to depression. The detailed analysis of these factors was beyond the scope of our study.

CONCLUSION

The rates of PTSD and PTSD co-morbid depression are significant in earthquake survivors. It is important that adequate strategies for prevention and management of psychometric sequelae of the earthquake survivors must be developed. It is required to develop culturally sensitive psychotherapeutic and group counseling of vulnerable/risk groups like women and children must be initiated urgently by both the Govt. and NGO's working in these areas. Besides there is need for longitudinal studies to be done in earthquake hit areas for proper identification and intervention strategies to be made available.

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