FREQUENCY OF POSTTRAUMATIC STRESS DISORDER (PTSD) AMONG FLOOD AFFECTED INDIVIDUALS

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ABSTRACT

Objectives: To investigate the relationship of exposure to a traumatic event and the subsequent onset of Posttraumatic Stress Disorder (PTSD) in the population exposed to floods in Pakistan.

Study Design: Cross sectional study.

Place and Duration of Study: Individuals exposed to the 2010 flood in District Shadadkot, Sindh from April 2012 to September 2012.

Methodology: Sample of the study comprised of 101 individuals from the flood affected areas in Pakistan. Age range of the participants was 15 to 50 years (M = 27.73, SD = 7.19), with participation of both, males and females. PTSD was assessed by using the self report measure, Impact of Event Scale (IES) and the subjective and objecitve experience to flood was assessed through Flood Related Exposure Scale (FRES) devised by the authors.

Results: The prevalence rate of PTSD among the flood affected population was 35.5%. Trauma had significant positive relation with objective flood exposure and subjective flood exposure (r = .27 and r = .38) respectively. Inverse relation appeared between age and PTSD (r = - .20). PTSD was higher among females as compared to males.

Conclusion: Understanding the prevalence of PTSD helps the mental health professionals in devising intervention strategies. A longitudinal study design is recommended that may be developed for better understanding of trajectories of trauma response across time span. Our findings may help identify populations at risk for treatment research.

Keywords: Flood affectees, Objective flood exposure, Posttraumatic stress disorder, Prevalence, Subjective flood exposure.

INTRODUCTION

Trauma is an occurrence that is not within the normal range of the common experience and may involve a perceived threat to the individual[1]. Posttraumatic Stress Disorder (PTSD) is a psychiatric disorder (debilitating anxiety) that results from experiencing or witnessing traumatic or life-threatening events and is perhaps the severest of all of these psychological reactions. PTSD has profound psychobiological correlates, that impair the person's daily life functioning,[2,3] and is frequently associated with decreased health functioning and increased medical and psychiatric comorbidities[4]. Symptoms range from re-experiencing the trauma, persistent avoidance of reminders of the event, and hyper-arousal. The lifetime estimates of PTSD range from 7 to 12%[5]. However, the prevalence of PTSD varies from disaster to disaster and differs across population[6]. For example, prevalence of PTSD in adolescents after a natural disaster was estimated 26.9%[7]. It also varies across situations, for instance, after the Sept. 11, 2001 accident, PTSD in exposed disaster workers was found to be 20.4%[8] and among tortured Tibetan refugees ranged from 11-23%[9]. In another study the frequency of PTSD in a group of search-and-rescue workers, was 25%[10]. Moreover, the prevalence of PTSD among professional and non-professional rescue workers involved in the 1999 Chi-Chi earthquake in Taiwan was found to be 19.8% and 31.8% respectively[11]. In a coalmine-flood disaster that occurred in central China, the PTSD rate was 35.4% at 3 months and 31.3% at 6 months post-disaster, with high rates of comorbid symptoms[12]. In addition, PTSD is often a chronic condition, with patients suffering from symptoms several

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years after initial exposure to their index trauma[13]. Predictors and / or correlates of PTSD are female gender, young age, less education, predisaster psychopathology, disaster injury, and witnessing injury or death[14]. It is well documented in the trauma literature that female gender shows higher level of distress response as compared to male gender and women with high disaster exposure had higher risks of PTSD[15].

Flood 2010, in Pakistan, was a traumatic event with significant loss of property. It dramatically impacted the lives of thousands of people, including children, women, adults and elderly, not only physically but also emotionally[16]. Moreover, it caused severe loss and damage to Pakistan's infrastructure. According to the National Disaster Management Authority (NDMA), more than 20 million people were affected in over 30 districts. Besides this, 1.8 million houses were damaged and nearly 2000 individuals died[17]. The aim of the present study was to investigate the prevalence of post-traumatic stress disorder among the individuals who have been exposed to the 2010 flood in district Shadadkot, Sindh.

METHOD

This was a cross sectional study conducted on individuals who were exposed to the 2010 flood in District Shadadkot, Sindh. Data was collected from April 2012 to September 2012. Individuals with no diagnosed psychiatric illness, who could comprehend and understand the questionnaires were included in the study. Those individuals who had any diagnosed psychiatric illness were excluded. Sample of the study comprised of 101 individuals selected by using the purposive convenient sampling technique. Age range of the participants was 15 to 50 years (mean = 27.73, sd = 7.19), with participation of both, males and females. PTSD was assessed by using the self report measure, Impact of Event Scale (IES) and the subjective and objecitve experience to flood was assessed through Flood Related Exposure Scale (FRES) devised by the authors. FRES has two subscales: Flood Exposure Subjective (FES) and Flood Exposure Objective (FEO). FES measures the subjective threat appraisal and the items include questions like, "Were you hurt", "Were you scared that you would die?" and the sample items of FEO include questions like "Did you see somebody dying?" The respondents were approached individually. After taking the informed consent, a short interview was first conducted with participants to establish the initial rapport and to explain the purpose of the study. Respondents were assured that the information they gave would be kept confidential and would be used only for research purposes.

Data Analysis

Data was analyzed by using Predictive Analytics Software (PASW 18). Descriptive statistics, Pearson's correlation coefficient and t-test were used for analyses.

RESULTS

Descriptive statistics showed that 32.67% of the affected population had posttraumatic stress disorder (PTSD). Frequencies and percentages are given in table-1.

PTSD has significant positive relationship with objective flood exposure (r = .27) and also stonger positive correlation with subjective flood exposure (r = .71).

PTSD was higher among females as compared to males. Females scored higher on intrusive and avoidance symptoms as compared to males. Although the SD was high, but instead of using nonparametric statistics we applied the parametric statistics (t-test) as the Levene's test for equality of variance was non significant (meaning that data was symetrical and fullfiled the assumptions of parametric statistics).

One way ANOVA was used to see the frequency of PTSD across different age groups. Results showed that PTSD was higher in adolescents (M = 38.45) as compared to early adults (M= 28.08) and middle adults (M = 33.06) ($F(1,92) = 4.23$, $p < .05$).

DISCUSSION

This study was designed to examine the prevalence of posttraumatic stress disorder among the flood affected individuals. Sample included educated adult males and females. Self report measures were used for the diagnosis of PTSD and the level and intensity of exposure to disaster. Past studies have shown that there is a prevalence of PTSD and other distress responses after any traumatic event, however, with some variation of the ranges, intensity and frequency of trauma response across the population and culture.

Results of the study showed that about 35.1% of the affected population had PTSD after 2 years of the disaster. Moreover, for examining the level of PTSD, 22.6% of the individuals had mild symptoms of PTSD, where as 46.2% had moderate and 23.7% had severe symptoms of PTSD. Our findings are consistent with past studies in which prevalence of PTSD in nursing staff exposed in a disaster situation, reported higher psychological distress in all aspects than nonexposed nurses[18]. Similarly, high and moderate levels of psychological distress were observed and 66.7% of the sample reported the presence of significant posttraumatic symptoms[19]. Our findings, in line with recent literature, confirm that a natural disaster produces a high psychological distress with long-term aftermaths.

Trauma has significant positive relation with objective flood exposure and subjective flood exposure (r =.27 and r = .38) respectively. Results are significant at .01 level (for comprehensive detail see table-2). Correlation of trauma with subjective exposure is stronger, as higher the trauma appraisal higher would be the effect. It can also be noted that mere exposure to stressful

Table-1: Frequencies and percentages of Posttraumatic Stress Disorder (PTSD) among flood affected individuals (n = 101)

Variables	Frequency	Percentage
PTSD	33	32.67
Subclincial range	15	14.85
Mild range	21	20.79
Moderate range	43	42.57
Severe range	22	21.78

Table-2: Relationship of PTSD (Posttraumatic Stress Disorder), subjective and objective exposure of trauma (n =101).

	1	2	3
PTSD	-	.27**	.38**
Flood exposure objective		-	.71**
Flood exposure subjective			-

**p <. 01

Table 3: Comparsion of male and females on PTSD, intrusive and avoidance symptoms (n = 94).

	male (n = 80)		female (n = 14)			
Variables	M	SD	M	SD	t	p
Posttraumatic Stress Disorder	29.74	13.58	51.31	16.34	5.31	.001
intrusive symptoms	18.25	5.90	27.72	5.58	5.11	.001
avoidance symptoms	18.94	6.66	30.26	4.36	5.57	.001

df = 92

situation is not a sufficient cause rather the subjective appraisal is also important. It was seen in a study that in subjects exposed to traumatic events, only a minority developed PTSD indicating a relationship between characteristics of the exposure, the individual and the onset of PTSD[20].

PTSD is higher among females as compared to males. Results showed that females score higher on intrusive and avoidance symptoms as compared to males (table-3). In terms of gender, studies suggest that women experience higher rates of PTSD than men. While examining the age difference and PTSD, adolescents score higher (M = 38.45) as compared to early adults (M = 28.08) and middle adults (M = 33.06) and the difference is significant (F = 4.23). Moreover, age has significant negative relationship with PTSD (r = -.20, p < .05). These findings warrant further investigation to elucidate this relationship. Prospective research is needed to determine whether early avoidance and numbing symptoms identify individuals likely to develop PTSD later[21].

Limitations

The present study had several methodological limitations, and its results should be interpreted with caution. First, this study adopted a convenience sampling strategy. It should be noted that the present sample approximated the population that resided and worked in the community. It is also possible that more severely affected survivors were still in hospitals or shelters, and some might have been relocated to other places. Thus, the present study might undermine impacts of the flood. Second, the present study relied solely on self-reports of survivors, which were often subject to recall biases. Third, there was no data on predisaster protective or vulnerability factors such as prior psychological adjustment, prior traumatic exposure, family history of psychopathology, and/or psychosocial support they received after the flood and so on and thus potentially limiting the generalizability of these results.

CONCLUSION

Besides Posttraumatic Stress Disorder, a significant amount of psychiatric morbidity must be expected to follow high-impact natural disasters. PTSD may persist several years after a disaster that may result in significant personal distress and functional impairment. Thus, health authorities as well as clinicians should recognize the importance of diagnosing psychiatric disorders at an early stage after a disaster. An early treatment program should be organized for those with significant post-disaster stress. In time assessment, diagnosis and interventions for survivors should be a primary goal in a program of Public Health.

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