Measuring the Severity of Mental Health Problems Faced by Flood Victimized Individuals in Different Areas of South Punjab, Pakistan

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Abstract

The current study was carried out to address the severity of mental health problems among flood victimized individuals in different areas of South Punjab, Pakistan. This was a quantitative study with cross-sectional research design. A sample of (N=409) flood victims was recruited by using multi-stage sampling technique. Data was collected by using three valid and reliable scales. The results from the collected data revealed that the severity of mental health issues differ in different areas of Pakistan. The results reported that the severity of PTSD was higher in over all areas but it was more severe in Rajanpur and Taunsa Sharif. On the other hand level of depression was higher among the flood victimized individuals in Dera Ghazi Khan and Taunsa Sharif. Similarly, the anxiety and stress was higher in Taunsa Sharif and Rajanpur. On the basis of the findings from this study, it is stuggested that the authorities should start curiative steps in the nominated areas as this study revealed in order to decrease the severity of mental health problems and to promote the mental well being of the flood victimized.

Keywords: PTSD, Anxiety, Stress, Depression, Sleep Quality, Flood

Introduction

Identification of mental health problems of flood victims is crucial and also considered very important for a number of reasons. First, mental health problems, if not explored, would bring about long-term negative effects to the victims and their communities. Unaddressed mental health problems could result in chronic conditions, lower quality of life, impaired functioning, and increased suicide attempts. Second, adequate mental health care might help build up resilience, accelerate the recovery process, and increase the general well-being of flood victims. With effective interventions and support systems, the burden of mental health disorders can be reduced, and individuals can gain a sense of control and stability in their lives (Ahmad et al., 2025). Although some studies have been conducted on mental health screening in disaster-affected areas, the particular context of the flood-affected regions in Pakistan necessitates focused research and tailored approaches. It calls for an understanding of the peculiar cultural, socio-economic, and geographical factors that shape mental health outcomes for the design of appropriate interventions. The purpose of this thesis is to contribute to the existing literature by conducting a study to identify the mental health problems of flood victims in South Punjab,

Pakistan. Because, Pakistan is one of the countries with a high susceptibility to natural disasters, but among them, floods appear to be a regular threat in South Punjab, Pakistan, during 2022 and 2023. Floods result in catastrophes where millions of people were displaced, infrastructure destroyed, and loss of lives ensues (Mustasim, 2024). The aftermath of a flood disaster is often marked by significant psychological distress and disruption of daily routines, which have long-lasting effects on the mental health and caused massive destruction and major impacts on the physical, emotional, and mental well-being of the affected population. Flooding displaced people from their homes, make them lose their property and possessions, and disrupt their livelihoods. In addition, bad mental health conditions also developed by the aftermath of flooding, among which the most commonly occurring one is sleep disturbance, anxiety and its related disorders (Amir, 2017).

Literature Review

Studies have, time and time again, attested to natural disasters inevitably causing an escalation of the risk for mental health ailments. Astill et al. (2021) found PTSD, depression, and anxiety to be the most frequent conditions caused by the disaster. These illnesses will continue years after the initial crisis, crippling individuals' potential to perform basic functions in day-to-day activities, interpersonal interactions, and in general, living quality. Pakistan, owing to its geographic location, monsoon trends, and susceptibility to global climate change, is hit by recurring flood disasters, which threaten public health status and mental condition grimly (NDMA, 2022). The 2010 super floods were the most devastating in the nation's history, displacing more than 20 million individuals, inflicting widespread infrastructure damage, and rendering permanent psychological trauma on affected groups (Jamshed, 2015). Evidence has shown that Pakistan's flood survivors have staggeringly high incidence rates of PTSD, depression, and GAD, with an inordinate suffering for women, children, and older adults. Socio-cultural and socioeconomic backgrounds further make it difficult to recover from mental disorders because stigmatization, lack of awareness on mental health issues, and inadequate psychiatric services do not encourage service access in the proper time by people (Parveen & Bashir, 2024). The Pakistan 2022 floods exemplify these effects vividly. Impacting close to a third of the nation, the catastrophe hit more than 33 million individuals, displacing about 8 million (Naveed, 2024). The magnitude of the destruction, coupled with the economic vulnerability of Pakistan, only increased the psychological burden on the survivors. Marginalized communities like women, children, and the elderly were especially vulnerable to psychological trauma. Though it is a less than 1% emitter of global greenhouse gases, Pakistan is among the most vulnerable nations to climate change. The disproportionate vulnerability necessitates an understanding of the mental health impact of floods and intervention development in conformity with the nation's specific sociocultural context (NDMA, 2022).

Many studies point towards social determinants in influencing the mental health status in the aftermath of the disaster. Ineffective mental health coverage in flood-affected and rural Pakistan, for example, has been mentioned as the key deterrent to psychological recovery (Mustasim, 2024)In addition, socioeconomic disparities also matter since survivors of floods from lower-income classes have greater economic insecurity, which worsens stress, trauma, and emotional distress. Moreover, gendered dimensions of mental health susceptibility have been highlighted, with studies suggesting that women, especially those living in patriarchal and conventional societies, are likely to experience psychological distress due to restricted mobility, caregiving roles, and lack of decision-making power in the response to disasters (Parveen & Bashir, 2024).
One of the integrated models of explaining flood-induced psychological distress is the bio-psycho-social model encompassing biological, psychological, and social determinants of mental health outcomes (Jirek, 2017). Under the biological determinants, studies have established that genetic predispositions, neurochemical dysregulation, and hormonal stress response explain an

individual's susceptibility to PTSD and other trauma disorders (Smoller, 2016). Research has also revealed that prolonged exposure to stress, like recurrent displacement due to flooding, is a factor that causes changes to the brain's stress-regulating mechanisms, with greatest influence on the amygdala, hippocampus, and prefrontal cortex (Merrill et al., 2025).

Then, by examining psychological variables too, cognitive and emotional processing of trauma is most important in resilience and recovery for mental health. People who already have pre-existing mental illnesses, for example, anxiety or depression, are more vulnerable to developing PTSD after a flood disaster. In addition, personality, coping mechanisms, and cognitive appraisal affect people to make sense and react to trauma (Bonanno et al., 2016).

Objective of the Study
To assess the severity of mental health problems, specifically stress, anxiety, depression, sleep disturbance, and PTSD among flood affected individuals in different areas of South Punjab, Pakistan.

Hypothesis of the Study
The severity of various mental health problems (PTSD, depression, and anxiety, stress, and sleep disturbances) would significantly differ among flood victims across different areas of South Punjab, Pakistan.

Material and Method of the Study
This study was aimed to assess the mental health issued among the flood victims and also to explore what level of PTSD, depression, anxiety, stress, and sleep disturbance was faced by the flood victimized individuals in different areas of South Punjab, Pakistan. The following steps were taken while conducting this study.

Recruitment of Participants
All the participants of this study were the flood victimized individuals living in different flood affected areas (mozaz & villages) of south Punjab, Pakistan. Their age range was from 22-40 years including both genders having different socio-demographic features.

Research Design of the Study
This was a quantitative research with cross-sectional research design. Sample of (N=409) flood victimized individuals was chosen by using multi-stage sampling technique and data was collected from different areas like (Muzaffargarh, Rajanpur, Dera Ghazi Khan, Taunsa Sharif, and Sutlej Bahawalpur).

Measurement Scales of the Study
Three valid and reliable scales were used to collect the research data. Firstly, PCL-5 was employed as the primary measure for assessing PTSD symptoms and it was developed by Weathers et al. (2013). This 20-item self-report measure corresponded directly to DSM-5 diagnostic criteria for PTSD. Secondly, The PSQI was used to assess the sleep quality and this was developed by Shahid et al. (2012). This scale was used to comprehensively assess sleep quality and disturbances over one month. Lastly, to measure the level of mental illness DASS, 42 item scale was used and this scale was developed by Lovibond and Lovibond (1995).

Inclusion and Exclusion Criteria
In this study the individuals with age of 18-65 years who directly exposure the flood were included while the individuals below 18 and above 65 years of age having no exposure or loss due to flood were excluded from the study.

Results of the Study

The present chapter presents the results of the study in detail by interlocking the complexities of PTSD, depression, anxiety, stress, and sleep disturbances among flood-affected individuals. The findings are systematically presented across statistical analysis, each addressing different aspects of the research objectives. The data from the flood victimized was analyzed by using SPSS.

Table 1 Prevalence of Mental Health Outcomes in Different Areas of South Punjab, Pakistan

MHO	Regions	M	SD	F (4,404)	P	η^2
PTSD	Muzaffargarh	54.38	16.88	2.581	.037	.03
	Rajanpur	58.80	15.27			
	Dera Ghazi Khan	52.25	16.34			
	Taunsa Sharif	58.00	15.59			
	Sutlej Bahawalpur	53.45	16.64			
Depression	Muzaffargarh	30.24	4.78	3.124	.015	.03
	Rajanpur	30.75	6.04			
	Dera Ghazi Khan	32.34	4.41			
	Taunsa Sharif	32.36	5.27			
	Sutlej Bahawalpur	30.79	4.52			
Anxiety	Muzaffargarh	25.60	6.14	12.428	.000	.11
	Rajanpur	31.44	5.28			
	Dera Ghazi Khan	28.80	5.72			
	Taunsa Sharif	29.95	5.81			
	Sutlej Bahawalpur	27.07	6.37			
Stress	Muzaffargarh	32.15	3.61	18.314	.000	.15
	Rajanpur	34.35	4.70			
	Dera Ghazi Khan	29.28	6.68			
	Taunsa Sharif	35.23	4.13			
	Sutlej Bahawalpur	31.92	4.91			
Sleep Quality	Muzaffargarh	15.38	4.06	3.500	.008	.03
	Rajanpur	15.55	3.68			
	Dera Ghazi Khan	16.05	5.05			
	Taunsa Sharif	15.43	4.15			
	Sutlej Bahawalpur	17.62	5.79			

Note: The above table shows the average measures of prevalence of mental health problems among flood victimized across different flood affected areas of south Punjab, Pakistan.

Findings and Discussion

This study was carried out to check the severity of mental illness among the flood victimized individuals in different areas of Pakistan. In this connection it was hypothesized that "The severity of various mental health outcomes (PTSD, depression, anxiety, stress, and sleep disturbances) would significantly differ among flood victimized individuals in different areas of Pakistan. The results from the collected data support the hypothesis that the prevalence and severity of mental health outcomes significantly differ among flood victims across different regions. The analysis of variance (ANOVA) reveals significant regional differences in PTSD, depression, anxiety, stress, and sleep disturbances. PTSD symptoms vary significantly across regions (F (4,404) = 2.581, p = .037, $\eta2$ = .03), with Rajanpur (M = 58.80, SD = 15.27) and Taunsa Sharif (M = 58.00, SD = 15.59) reporting the highest mean scores, suggesting that

individuals in these areas may have experienced greater trauma or lacked adequate support systems. Depression also shows significant regional differences (F (4, 404) = 3.124, p = .015, η2 = .03), with Dera Ghazi Khan (M = 32.34, SD = 4.41) and Taunsa Sharif (M = 32.36, SD = 5.27) exhibiting the highest levels of depressive symptoms. Similarly, anxiety presents substantial variation (F (4, 404) = 12.428, p < .001, η2 = .11), with Rajanpur (M = 31.44, SD = 5.28) reporting the highest anxiety levels, followed by Taunsa Sharif (M = 29.95, SD = 5.81) and Dera Ghazi Khan (M = 28.80, SD = 5.72). The large effect size (η2 = .11) for anxiety suggests that geographical factors, such as disaster impact severity and post-flood recovery conditions, may have influenced mental health disparities. Stress levels also exhibit significant variation across regions (F (4, 404) = 18.314, p < .001, η2 = .15), with Taunsa Sharif (M = 35.23, SD = 4.13) and Rajanpur (M = 34.35, SD = 4.70) reporting the highest stress levels, potentially due to prolonged displacement or lack of social and economic stability. Sleep disturbances are also significantly different among regions (F (4, 404) = 3.500, p = .008, η2 = .03), with Sutlej Bahawalpur (M = 17.62, SD = 5.79) reporting the highest sleep disturbance scores, suggesting that residents in this area experience persistent post-disaster distress affecting their sleep patterns.

The small to moderate effect sizes indicate that these differences are statistically significant. Overall, these findings highlight substantial regional disparities in mental health outcomes among flood victims. Hence, the hypothesis accepted and the results of this study are in line with the previous researches. A study revealed a higher level of sleep problems among the individuals who exposure flood. The severity was associated with the loss in shape of property, animal and deaths in their loved ones (Parenteau et al., 2020). Similarly, another study reported mild to moderate anxiety and its related disorders among the flood victims and the level of psychological issues were higher among the female flood survivors (Parveen & Bashir, 2024). Mild to moderate level of psychopathology was identified among the flood victims. The level was higher among the individuals belonging to lower socio-economic status (Visch et al., 2023).

Conclusion
On the basis of the findings from this research it concluded that natural disasters such as flood is associated with different types of psychopathological issues among the survivors particularly among those who faced any type of loss either material or human. Hence, there is a dire need to address the mental health issues of flood victims to halt the mental damage or to introduce different prevention programs in order to promote mental health.

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