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RESEARCH PAPER

Exploring the Impact of Frustration on Psychological Wellbeing among Flood Victims in Different Areas of Pakistan

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ABSTRACT

The objective of this study was to identify the level of frustration and its impact on psychological wellbeing among flood victims. Natural disasters, including flood is considered a core cause of psychological distress and many more mental health issues globally. Approximately, over the past two decades particularly in Pakistan, food insecurity, as a form of natural disaster, has disrupted lives and led the majority of population to the psychological anomalies. This was a quantitative study with a cross-sectional research design by using purposive sampling method, involving 414 flood victims. The findings reveal a negative and significant relationship between frustration and psychological well-being. Gender-based mean differences indicated that women reported higher frustration levels and lower psychological well-being compared to men. This is recommended to the higher authorities to launch different prevention programs to uplift the mental wellbeing of flood victims.

Keywords: Frustration, Psychological Wellbeing, Flood Victims

Introduction

A flood is an overflow of water (or, rarely, other fluids) that submerges land typically dry (Jonkman et al., 2024). The term "flood" can also refer to the inflow of tidal water. Floods are of significant concern in agriculture, civil engineering, and public health. Human-induced environmental changes often increase the intensity and frequency of flooding (Xu et al., 2024. Flooding is a major driver of economic losses from natural disasters, emphasizing the need for effective protection and preparedness strategies (Kron, 2005). Research shows that drowning accounts for two-thirds of flood-related fatalities, particularly among males engaging in risky behaviors (Jonkman & Kelman, 2005). The Mosul Dam case highlights the seismic risks in vulnerable regions and climate change is expected to increase flood frequency, particularly in Southeast Asia (Hirabayashi et al., 2013).

In Pakistan, socioeconomic factors contribute to fatalities during heavy rainfall (Sayed & González, 2014). The 2010 floods caused significant psychosocial trauma, especially among children (Rahman et al., 2024). Emotional distress underscores the need for strong community support and targeted mental health interventions (Yousuf et al., 2023). Risk perception plays a crucial role in disaster management, with experiences shaping community responses to flood risks (Rana et al., 2020). The 2014 flood in Kashmir exposed significant challenges in flood preparedness and response, causing widespread frustration, particularly among marginalized communities who bore the brunt of the impact (Ballesteros-Cánovas et al., 2020).

The 1993 Midwest floods saw increases in depression, anxiety, and PTSD, although social-psychological resources helped mitigate some of the impacts (Stimpson, 2005). Long-term psychological effects of flooding remain underexplored, especially for communities frequently affected by such disasters. Factors such as pre-existing mental health conditions, socioeconomic status, and flood severity influence these outcomes (Lamond et al., 2015). A study in Malaysia found no significant gender differences in psychological well-being among flood victims (Salleha & Mustaffab, 2016).

Literature Review

A longitudinal study on the 2013 German floods found high rates of depression and PTSD among those who received psychosocial support, with improved outcomes linked to intervention (Daniel & Michaela, 2021). Bhatti (2017) emphasizes the importance of therapeutic interventions following disasters. Nasir et al. (2012) found elevated anxiety and fear levels among flood victims. Makwana (2019) reviews the mental health impacts of both natural and man-made disasters. Stanke et al. (2012) advocate for a multi-sector approach to recovery. In Punjab, Abid et al. (2023) found that 38% of participants reported depression, 43% anxiety, and 20% stress, with social support accounting for 71% of the variation in mental health outcomes. Children, particularly in rural areas, are especially vulnerable to disasters. Shah et al. (2020) found that psychological distress in flood-affected children was linked to home damage and family instability.

Gender disparities also emerge in disaster vulnerability. Sadia et al. (2016) assess women's health risks in flood-prone areas of Pakistan, finding that women are more vulnerable due to lower healthcare utilization and education. Their study also showed that higher maternal education improved health outcomes for women and children. In the Indian Sundarbans, post-cyclone stress and water insecurity have long-lasting mental health impacts. Dasgupta and Basu (2023) examine the effects of cyclones Amphan and Yaas, highlighting water insecurity, salinization, and livelihood loss as key stressors, and advocate for resilient water systems and community-level psychological support.

Escobar et al. (2022) found that urban poor populations in Indonesia experience higher rates of acute morbidities and depressive symptoms following floods, with these effects lasting longer than in wealthier populations. Economic challenges exacerbate mental health outcomes. Walker-Springett et al. (2017) identify key factors, such as loss of agency and community support, that influence recovery after floods, calling for targeted public health interventions. One similar study examines the psychological well-being of survivors of the 2011 floods in Thailand, focusing on how frustration related to trauma, displacement, and loss was linked to lower well-being. The findings suggest that high levels of frustration were associated with poorer mental health outcomes, including anxiety and depression. This study explores the psychological impact of flooding on mental health and frustration in flood-affected communities. It discusses how frustration due to displacement, loss of livelihood, and environmental stress negatively influences psychological well-being, leading to increased distress and decreased resilience among flood victims (Duangkaew et al., 2022).

Krishna et al. (2021) found that marginalized communities excluded from disaster risk reduction efforts often lack timely warnings and support, relying on resourcefulness to recover. Ao et al. (2020) studied flood preparedness in Sichuan, China, and found that older, more educated residents were better prepared, recommending the integration of structural flood control with psychological support. Singh (2020) highlighted the gendered vulnerabilities of women in informal urban spaces in Mumbai, advocating for gender-sensitive disaster planning. Memon (2020) found that women in Sindh's flood camps experienced increased violence during displacement, underscoring the need for gender-sensitive disaster planning. Barauh et al. (2023) found that a lack of early warning systems and resources worsened stress in Assam post-flood, with migration often being a costly

option. Finally, Niipare et al. (2020) identified vulnerability in Namibia's Oshana Region, driven by poverty, poor infrastructure, and inadequate disaster management, which limits resilience during floods.

A longitudinal study examined post-disaster social support dynamics in the first year following a natural disaster, focusing on the predictors of survivors' social-psychological well-being. Data from 285 respondents impacted by the 1997 flood in Poland showed that greater initial social support was linked to better interpersonal and community relations, while dissatisfaction with aid and community animosities predicted lower well-being (Kaniasty, 2012). Another study in the UK, post-flood, found that 27.9% of participants met the criteria for PTSD, 24.5% for anxiety, and 35.1% for depression. Coping strategies, such as detached coping, correlated with lower distress (Mason et al., 2010). In Sri Lanka, flood-affected residents faced conflicts over uneven compensation distribution, highlighting the need for better flood risk reduction strategies (Amarakoon et al., 2024). Research on residents in New Brunswick, Canada, following the 2018 flood, showed that displacement negatively impacted mental health, but communal coping played a positive role in recovery (Woodhall-Melnik & Grogan, 2019). Young people in flood-affected areas reported increased anxiety and distress (Luk & Longman, 2024).

Material and Methods

As the participants of this study were the flood victims belonging from different demographic areas of Pakistan so, the focus of the study was to check the level of frustration and to determine its impact on the level of psychological wellbeing among flood victims. A purposive sampling method was used to recruit 414 individuals. Similarly, on the basis of the age, culture and socioeconomic status a cross-sectional correlational research design was used to explore the relationship between psychological wellbeing and frustration among flood victims. On the other hand the sample (N= 414) was selected from flood victims, both gender, from urban and rural areas having 18 and above of age were included. Moreover, the sample size was calculated by using G. power online sample calculator. In the light of the literature the following hypothesis were supposed.

1. There is expectedly a negative relationship between psychological well-being and level of frustration in flood victims.

2. There is likely to be a negative and significant effect of frustration on psychological well-being among flood victims

3. There is likely to be a gender difference in psychological well-being and frustration among flood victims.

4. There is likely to be a difference between urban and rural flood victims in terms of study variables, i.e., psychological well-being and frustration.

In this research the individuals with minimum age range of 18 years and above were included and the individuals with below 18 years and who scored normal were excluded. The assessment from the included participants were done by using psychological well-being scale consisting of 18-items was used to assess the level of overall wellbeing of flood victims. Items scored with the range of 1 to 7. The item 1 means most agreeable, whereas 7 means too much agreeable. The Cronbach alpha reliability of this scal was .87 to .93 which was reported in the original validation scale (Ryff & Keyes, 1995). The other scale was frustration scale this scale was developed by Harrington (2005) and was designed to measure the level of frustration. This scale consists of 28 items on a 5-point Likert scale (1-5). The reliability of this scale in the current study ranged from 0.84 to 0.94. Higher scores indicate higher levels of frustration.

Lastly all the ethical considerations were taken into account before conducting the research. Firstly, permissions for the scales were taken from the original author. Further, the procedure included getting the institution's approval to interact with flood victims across Pakistan. Afterward, participants were properly guided about the research and their rights to withdraw at any time. With their agreement of participating, they were asked to fill the scales according to their opinions. The collected data was analysed by using SPSS version 25.0

Results and Discussion

Table 1
Socio Demographic Characteristics of Study Participants (N=414).

Variables	*f*	*%*	*M*	*SD*
Gender				
Men	213	51		
Women	201	49		
Age			32.47	17.8
Rural	212	51		
Urban	202	49		

Note. f= Frequency, f=Percentage, M=Mean, SD= Standard Deviation.

The above table depicts that there are 213(51%) men and 201 (49%) women participated in the study with mean age of 32.47 and 17.8 standard deviation. Moreover, 211(51%) flood victims are rural while remaining 202 (49%) are urban participants.

Table 2
Interrelationship between study variables (N=414)

Variables	1	2	M	SD
Frustration	-	-.10*	78.54	10.20
Psychological Wellbeing	-	-	69.09	18.19

Note. M=Mean, SD= Standard Deviation.

The above table depicts that frustration is negatively as well as significantly associated to psychological wellbeing among flood victims.

Table 3
Linear Regression Analysis for Psychological Well-Being (N = 414)

Predictor	*B*	*SE*	*β*	R^2	*F*	95% CL, LL, UL
				.01	4.81	
Constant	82.48***	6.15				[70.38-94.58]
Frustration	-.17*	.07	-.10			[.32-.01]

Note. *p<.05*, **p < .01. ***p < .001.*

The above table depicts that there is significant negative impact of frustration on psychological wellbeing causing only 1% variance.

Table 4
Mean Differences in Study Variables among Men and Women (N=414)

	Men (N=212)		Women (N=202)		*t*	*P*	Cohen's d
Variables	*M*	*SD*	*M*	*SD*			
Frustration	78.19	8.43	78.92	11.81	-.72	.47	0.07
PW	69.21	15.64	68.97	16.79	.14	.88	0.01

Note*. M=Mean, SD= Standard Deviation,* PW= Psychological Wellbeing

The table above depicts no significant mean difference between men and women, however, men scored slightly high on psychological wellbeing while women score on frustration is more than men.

Table 5
Mean differences between urban and ruals in study variables (N=414)

	Rural (N=213)		Urban (N=201)		*T*	*p*	*Cohen's d*
Variables	*M*	*SD*	*M*	*SD*			
Frustration	78.36	11.74	78.71	8.31	-.32	.74	0.03
PW	68.73	15.91	69.47	16.52	-.46	.64	0.04

Note. *M=Mean, SD= Standard Deviation*, PW= Psychological Wellbeing

The above table depicts that rural scored more on frustration while urban score was more than rural in term of study variable psychological wellbeing in flood victims; it is noteworthy that these score differences were not statistically significant.

Discussion

There is a significant body of literature examining psychological distress among populations affected by floods. However, the specific impact of frustration on psychological well-being in Pakistan remains underexplored. This study aimed to investigate this relationship and address the existing gap in research, with the goal of developing effective interventions for flood victims.

On the basis of the findings it reported that the correlational analysis showed a negative significant association between frustration and psychological well-being, in flood victims. These findings align with previous research that demonstrates a negative link between frustration, psychological well-being, and the flood victims' experiences, with factors such as displacement and the loss of home or property contributing to increased stress and reduced well-being (Hossain et al., 2021). Similar impacts were observed on the local economy and residents' well-being, including significant reductions in income and post-disaster stress over time (Duangkaew et al., 2022). High levels of distress were also reported among flood-affected students in Khyber Pakhtunkhwa, indicating notable psychological impacts (Basit et al., 2011).

Regression analysis confirmed the second assumption of the study, revealing a negative and significant effect of frustration on psychological well-being among flood victims. Our results align with existing research, which has primarily focused on the immediate psychological impacts of flooding, while fewer studies address the long-term effects. Research from regions such as Syria, Bangladesh, Pakistan, and England has highlighted the wide range of mental health challenges faced by individuals affected by natural disasters like floods. These challenges include the exacerbation of pre-existing mental health conditions, the impact of displacement, and socio-economic stressors (Hassan et al., 2016). Factors like household income, flood severity, and the need for relocation during recovery have been identified as significant predictors of psychological distress (Lamond et al., 2015). Furthermore, populations facing repeated floods, such as those in Carlisle, Bangladesh, and Pakistan, often experience long-term mental health issues due to the compounded effects of environmental stressors and displacement (Kaiser, 2023). These findings underscore the need for culturally competent mental health support and targeted interventions, such as financial aid and flood mitigation strategies, to enhance long-term resilience in flood-affected communities (Ahmad & Afzal, 2021).

Regarding gender differences, the mean differences showed no significant variation between men and women in the study variables. However, men scored slightly higher on psychological well-being, while women displayed greater frustration. This is consistent with other studies indicating that women are more prone to frustration, with their frustration levels peaking earlier than those of men and reporting lower life satisfaction (Brichácek & MIK, 1985). Women are also more likely to experience psychological disorders, which may be due to differences in stress responses and coping strategies. A study conducted across 59 countries with 6,882 participants found that

women reported higher levels of trauma-related distress, depression, and anxiety but were also more likely to use adaptive coping strategies (Kolakowsky-Hayner et al., 2021). Research on emotion regulation styles, such as integrative emotion regulation (IER) and suppressive emotion regulation (SER), has shown that IER positively predicts well-being, while SER has a maladaptive effect (Benita et al., 2020). Similarly, Bashir et al. (2024) found that women reported lower psychological well-being than men, though the difference was not significant. An independent t-test comparing urban and rural flood victims revealed that rural participants exhibited higher frustration levels, while urban participants demonstrated better psychological well-being. However, these differences were not statistically significant. This finding is consistent with the results of the 2010 Pakistan flood, where rural households experienced greater physical and economic losses, such as home destruction (54.8%) and income loss (88%), and were slower to recover compared to urban populations (Kirsch et al., 2012). Studies suggest that climate change exacerbates mental health challenges, particularly for marginalized groups. Women and low-income populations are more vulnerable to anxiety, depression, and PTSD (Manning & Clayton, 2018). In Lagos, Nigeria, low-income populations experienced slower recovery from flooding, with more significant health and livelihood impacts (Ajibade et al., 2023). Similarly, farmers in Western Australia reported increased anxiety and place-based distress due to climate change, which raised the risk of depression and suicide (Ellis & Albrecht, 2017). In rural areas like Southern Alberta, mental health resources are crucial following disasters, especially for vulnerable groups such as children and youth (Lalani & Drolet, 2013). Long-term environmental stressors like droughts in rural Australia also increase mental health risks, highlighting the need for targeted mental health interventions (Sartore et al., 2008). These studies emphasize the importance of addressing mental health disparities and providing community-specific support in rural, climate-impacted regions

Conclusion

The study reveals a significant negative association and impact of frustration with psychological well-being among flood victims. This research lays the foundation for future studies and offers valuable insights into how frustration among flood victims is closely tied to poorer mental health. It suggests that the government should address the needs of flood victims not only in terms of material support but also by providing psychological care. This could be achieved by deploying psychologists, psychiatrists, and mental health professionals to the affected areas to assess mental health and implement effective strategies, such as mindfulness, cognitive-behavioral techniques, progressive muscle relaxation, divergent techniques, motivational interviewing, and other evidence-based psychological methods.

Recommendations

The study employed a cross-sectional correlational research design while a longitudinal design seems to be more effective in examining the study variables over time. Therefore, future studies should consider using a longitudinal approach. Another limitation of this study was the use of purposive sampling; a stratified sampling method would have been more appropriate for examining the study variables across different groups of flood victims in various locations. Furthermore, the study used a lengthy questionnaire for data collection, which may have discouraged participants from completing it thoroughly. Future studies should consider using a shorter version of the questionnaire to improve response quality. The study's inclusion criteria were limited to flood victims with intermediate education. Future research should aim to include translated versions of the scales to gather data from a more diverse sample, as individuals with lower education levels are also significantly affected. Additionally, conducting interviews could be a more effective approach for future studies, especially in rural areas where people may have limited literacy skills.

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