

Stress reaction and Post-traumatic stress disorder among flood victims of Lahore- Pakistan and role of community (ROC)

Dr Amina Nasar

MBBS, FCPS (Psychiatry)

Child and General Adult Psychiatrist, Lahore Pakistan

Ms Sadaf Inayat

MS Clinical Psychology

Clinical Psychologist working with Dr. Amina Nasar

Dr Ali Zulqarnain

MBBS, FCPS (Psychiatry)

General Adult Psychiatrist

Assistant Professor of Psychiatry, Sargodha Medical and Dental College, Sargodha Pakistan.

Dr. Muhammad Nasar Sayeed Khan

MBBS, FCPS (Psychiatry)

Associate Professor of Psychiatry,

Division of Developmental Disabilities, Department of Psychiatry,
Queens University, Kingston Ontario, Canada

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Abstract

Aims and Objectives: The present study investigated the relationship between stress reaction, Post-Traumatic Stress Disorder (PTSD) and Role of community (ROC) among flood victims.

Sample: The stratified random sampling was used to collect total sample of 130; consisted of 100 flood victims with the age range of 18 to 40 years ($M=1.52$, $SD=3.9$) and 30 community relief group workers with the age range 30-49 from most flood affected areas of district Lahore.

Material and Method: Kessler stress reaction Scale and The Impact Event Scale-Revised were used to measure the stress reaction and Post-Traumatic Stress Disorder (PTSD) among flood victims after translating into Urdu language.

Results and Conclusion: The study found that there was a significant positive relationship between stress reaction and Post-Traumatic Stress Disorder. Moreover Post Traumatic Stress Disorder and Education emerged as significant predictors of stress reaction.

Key words: Stress reaction, Post-traumatic stress disorder, role of community flood victims, Lahore

Introduction:

“A disaster is defined as a basic disruption of the social context within which individuals and groups function” (Fritz, 1961). Among all the natural disasters floods are the most distressing and disturbing which result in various physical and psychological effects on individual life in terms of personal and daily functioning. It results in a lot of personal and public harm in terms of their possessions, properties, well-being, strength and loss of employment and income. These all contribute as a major risk factor for effecting the behavior, thoughts and overall well-being of people affected by it. Various emotional problems are caused by increased apprehensions, terror, anxiety and miseries related with the disaster. Among these depression and anxiety are frequently reported among flood victims. After flood like disaster the rise in water level, lack of proper awareness and less time for precautionary and defensive measures may cause anxiety symptoms among the victims. The various factors that serve an important function in determining the nature and severity of the problem are their coping strategies, flexibility, age, gender, type of family system and their socioeconomic status (Agnieszka et al., 2007; Norris et al., 2002). The effect of the particular disaster depends on the coping mechanism used by the victim which predisposes him or her toward stress disorder which further results in more extreme psychological problem (Green & Lindy 1994, Stab et al., 1999).

Stress reaction is characterized by unpleasant emotional states such as tension, depression, worthlessness and irritability (Barlow & Durand, 2005). These all result in reduction of resilience; lack of emotional wellbeing, disability to cope with pain, dissatisfaction and depression. Stress reaction starts with experiencing decreased wellbeing then moving towards distress and various times affecting individual's whole life (Horwitz & Scheid, 1999). Stress reaction emerges when there is a negative relationship between the individual and his or her environment (Lazarus, 1966; Lazarus & Folkman, 1984).

Depression results in short-term experience of sadness or a temporary or permanent loss.

Anxiety is an innate and natural instinct or character for the purpose of saving from emotional shock, panic and fear of damage. Concerns regarding disaster result in unpleasant experience as the environmental factors are perceived life threatening. The effect of this is long lasting, permanent and sometimes remains up to a lifetime. The things that can stimulate fear and stress among the individuals will cause concern them to deal with the situation (Calvin, 1979).

Stress reaction is predisposed by various environmental, psychological, environmental and personal variables and emotional distress among the individual.

According to Norris (2005) among the various effects of natural disaster the main include depression, anxiety, stress reaction, cognitive misjudgments errors, terror and various health related difficulties. According to National Disaster Management Authority (2003), the natural disasters lead to major breakdowns and stress which may result in symptoms such as increased anxiety levels and depressive symptoms that may be long lasting and prolonged. These psychological characteristics can impair the vulnerabilities and sometimes restore the recovery efforts.

Sanaand Khattak (2013) conducted a research with the aim to assess the psychological status of the people suffering from flood victims and the level of well-being in individuals suffering from Post-Traumatic Stress Disorder (PTSD) and their gender effects. For this people from Banda Sheikh Ismail was asked about the experience of the disaster and how they perceived it. The results revealed that there are no effects with respect to their age, gender and the level of education level. This study reveals that most people who suffer from various catastrophic events like floods have increased risk of developing PTSD symptoms and need specialized mental health services in order to manage their symptoms.

Otto, Boos, Dalbert, Schops and Hoyer (2006) conducted a research on the symptoms of PTSD, depression and

anxiety among the flood victims. This study focused on the investigation of the Belief in a Just World (BJW) on the overall mental health and well-being of the flood victims. The results revealed symptoms of PTSD and stress reaction among flood victims and they also studied relationship of these two clusters with BJW. It was concluded that Belief in Just world was negatively associated with the stress reaction among flood victims. Also, the BJW did not reveal any relationship with PTSD symptoms. In conclusion, the results revealed that BJW buffers mental health and psychological wellbeing.

Neria, Nandiand Galea (2007) conducted a research on the Post-traumatic stress disorder (PTSD) after the disaster. The research aimed at assessing the indication about Post-traumatic stress disorder (PTSD). The results indicated that the disasters were classified in various categories such as human-made disasters, technological disasters and natural disasters. It suggested the fact that the burden of Post-traumatic stress disorder (PTSD) among persons exposed to disasters is extensive and associated with various social, demographic and background factors.

Liu et al. (2006) conducted a study to assess the incidence and factors of posttraumatic stress disorder (PTSD) in flood victims of Hunan, China. The results indicated that among the people experiencing the disaster most of them had symptoms of posttraumatic stress disorder (PTSD). The factors, which were more prone to developing the symptoms, were gender, old age and the nature and severity of the flood.

Ahern, Kovats, Wilkinson, Fewand Matthies (2005) conducted a study to assess the global health impacts of flood victim. They concluded that floods are associated with many physiological and psychological conditions and remedies for such condition should be contingent before and after disasters.

Stanke, Murray, Amlot, Nurse and Williams (2012) studied the effects of the floods on the mental health of the individuals. The results indicated that all most people of all the age groups are prone to developing various mental health problems associated with the floods. The study also put great emphasis on the effect of various primary and secondary stressors on people affected by floods. Psychological support plays a very important role that is provided through close relationships such as families, friends and community help.

Gibbs and Montagnino (2001) conducted a study aimed at determining the psychological perspective of disasters and the mental health hazards. They reported that more stress reaction the individuals suffers the more chances is that he or she will suffer from various emotional consequences. In order to control the effects of emotional as well as stress reaction various efforts by the psychologists are needed to help the victims and sufferers of the disasters. There is a constant need of various intervention techniques and therapies in order to help the disaster victims.

Rationale of the Study

In regions of Lahore flood effects almost after every two or three year on average so the perceptions of flood victims and community have changed regarding disaster management through period of the time. The findings of the study will highlight the role of community in providing relief and support and its effect on the level of stress reaction and Post-Traumatic Stress Disorder (PTSD) present in flood victims. The study will help in monitoring the level of stress reaction and symptoms of Post-Traumatic Stress Disorder (PTSD). Remediation and prevention of stress reaction and associated psychological problems present among flood victims. Psycho education will be provided regarding promotion and maintenance of mental health among victims after floods. Awareness regarding service provision and wellbeing of individuals will also be raised with the help of this study. It also includes the evaluation of the contribution of contingency plan and disaster management by Government and awareness campaigns by the Media.

Hypothesis

The hypotheses of the study are as follows:

1. There will be a positive relationship between stress reaction and Post Traumatic Stress Disorder (PTSD) among flood victims
2. There will be a negative relationship between Role of Community, Psychological, Distress and Post Traumatic Stress Disorder (PTSD) among flood victims.

Method

The nature of study is Correlational as it is aimed to find the relationship between stress reaction, Post-Traumatic stress disorder (PTSD) and role of community among flood victims of Lahore. An Ex post facto research design was used because people were already prone towards flood. The research was carried out in two phases. In the first phase translation of the Kessler stress reaction Scale (K-10) and the Impact of Event Scale (IES-R) was done to use it in the present study. Originally the scale was in English language which was not comprehensible for the population of research study so it was translated into Urdu language and its psychometric properties were also explored and the phase two was comprised of the main study.

Sample:

Stratified Random Sampling was used to select the 100 flood victims (96 men and 34 women, age range 18-40 year, $M = 1.52$, $SD = .61$) belonging to different areas of Lahore.

Measures

The following measures were used in the current study:

1. Kessler stress reaction Scale (Kessler, 2002).

It consisted of a total of 10 items which contained various symptoms of anxiety and depression. All the 10 items are summed together to get a total score. It ranges from 10 to 50 where 10 indicates low risk of anxiety or depressive and 50 indicates high risk of anxiety or depressive disorder. The cut off scores for the level of anxiety and depression are: 10 to 15 indicate low or no risk, 16 to 29 indicate medium risk and 30 to 50 indicate high risk. The alpha reliability scores ranged from 0.42 to 0.74 which indicated that the scale is a moderately reliable. The alpha value of the translated version is .88, which is considered reliable.

2. The Impact Event Scale (Weiss, 2007)

The Urdu version of the Impact Event Scale (TES-R) was used to measure the Post-Traumatic Stress Disorder (PTSD) symptoms. The Impact Event Scale (TES-R) consisted of 22 items. It consists of three subscales i.e. Intrusion subscale, Avoidance subscale and hyper arousal sub scale. For all the scales the scores range from 0 to 40. It can be used with healthy as well as older adults exposed to any form of traumatic life event. The alpha reliability or the English version of the Impact Event Scale (IES-R) was .80, which is highly reliable. The scale for translated into Urdu the alpha reliability for the Urdu version is .86.

3. Demographic Questionnaire.

Demographic questionnaire was developed based on literature review which was used to get details like gender of the participant, age, profession, education, and marital status, number of family members, family system and monthly income. Information related to damage due to flood, profession after flood, precautionary measures and the role of community in helping flood victims were also mentioned in the questionnaire.

4. Informed Consent Form.

All research participants were debriefed about the objectives and purpose of the study before administration of the research protocol. They were assured that whole information sought from them would be kept confidential and used for academic purposes. Moreover a written consent was taken from them.

Methodology:

The permission was sought from the Flood Fighting Department of Lahore and they were also briefed about the purpose of conducting this research. A list of flood affected areas was taken from them and population of the Lahore affected areas was divided into eight strata's and research participants were selected randomly in each stratum. The Impact Event Scale and Kessler stress reaction scale was translated into Urdu language for use in the present study. The sample consisted of flood victims so brief counseling sessions were also planned with the victims in order to ease their distress regarding flood. Permissions were also sought from the original authors of the scales.

Results

Table 1 *Pearson Product Moment Correlation between stress reaction and Post Traumatic Stress Disorder (N=100)*

Variables	Total PD	Total PTSD	INT	AVO	HYP	M	SD
Total PD	---	.66**	.70**	.54**	.53**	15.18	8.09
Total PTSD		---	.93**	.89**	.88**	29.55	16.98
INT			---	.74**	.76**	11.09	7.09
AVO				---	.66**	10.71	6.46
HYP					---	7.75	5.23

Note. PD= stress reaction, PTSD=Post-Traumatic Stress Disorder, INT= Introversion, AVO= Avoidance, HYP= Hyperarousal ** $p < .01$

The table showed that there is significant relationship between stress reaction and Post Traumatic Stress Disorder ($r = .66, p < .01$). This indicates the fact that the stress reaction and Post Traumatic Stress Disorder (PTSD) and its subscales as Introversion ($r = .93, p < .01$), Avoidance ($r = .89, p < .01$) and Hyperarousal ($r = .88, p < .01$) were strongly correlated with each other. So the hypothesis was accepted as if the stress reaction increases the symptoms of PTSD will also likely to be increased.

Table
Predictors of stress reaction

Variable	stress reaction		
	Model 1β	β	95% CI
Constant	6.01**	10.45**	[6.79, 14.11]
Total PTSD	.31**	.31**	[.25,.39]
Education		.58**	[-2.99, -.68]
R ²	.43	49	
F	73.67**	45.19**	
ΔR ²		05	
ΔF		9.93	

Note. N=100, CI= Confidence Interval. ** $p < .01$

The table demonstrated the regression analysis of stress reaction and the clusters. In the regression model, Total PTSD and Education emerged significant predictors of stress reaction. According to model 2, the values obtained for PTSD was ($p < .01$, $t = 9.06$) and Education was ($p < .05$, $t = -3.15$). This indicated that PTSD and education emerged as significant predictors of stress reaction. According to model 2, the value of R² indicated that Post-Traumatic Stress Disorder (PTSD) and education accounted for 49% variance in stress reaction among flood victims.

Table 3
Linear Regression Analysis of stress reaction and Post Traumatic Stress Disorder (PTSD)

	stress reaction					
	B	SE	B	t	P	95% CI
Constant	6.14	1.19		5.16	.01	[3.78, 8.50]
AVO	-.68	.25	-.55	-2.77	.01	[-1.17, -.19]
HYP	-.81	.28	-.53	-2.83	.01	[-1.38, -.24]
PTSD	.77	.15	1.61	5.20	.01	[.48, 1.06]
R	.70					
ΔR ²	.40					

Note. AVO=Avoidance, HYP=Hyper arousal, PTSD= Post Traumatic Stress Disorder, B= unstandardized beta.

The table demonstrated the regression analysis of stress reaction and the clusters of Post-Traumatic Stress Disorder (PTSD) Psychology. A total of four variables i.e. Total Post-Traumatic Stress Disorder (PTSD), Introversion, Avoidance and Hyperarousal were entered in the model. The values obtained for sub scales of Hyperarousal was ($p < .05$, $t = -2.83$) and the subscale of Avoidance was ($p < .05$, $t = -2.77$). Also, the values obtained for total Post Traumatic Stress Disorder (PTSD) was ($p < .05$, $t = 5.20$). This indicated the fact individuals belonging to the sub scales of Hyper arousal and Avoidance had significant stress reaction. The value of R^2 indicated that Post-Traumatic Stress Disorder (PTSD) accounted for 77% variance in stress reaction among flood victims.

Table 4
One-Way Analysis of Variance stress reaction and Post-Traumatic Stress Disorder (PTSD) among flood victims

Variables	Source	MS	F	p
<i>stress reaction</i>	Early adulthood	14.00	2.62	.08
	Middle adulthood	15.83		
	Late adulthood	21.50		
<i>Post Traumatic Stress Disorder</i>	Early adulthood	27.63	4.29	.01
	Middle adulthood	29.33		
	Late adulthood	48.33		

Note. M=Mean SD=Standard Deviation. $P > .05$

The table showed that there were three age ranges of the participants i.e. Early, middle and late adulthood which acted as the independent variables and stress reaction served as a dependent variable. The results of Analysis of Variance (ANOVA) were found to be insignificant ($p > .05$). This means that there was a no significant difference on stress reaction among the three age ranges of the participants i.e. Early, middle and late adulthood. On the other hand, the results of Analysis of Variance (ANOVA) were found to be significant ($p < .05$). This means that there was a significant difference on Post-traumatic Stress Disorder (PTSD) among the three age ranges of the participants i.e. Early, middle and late adulthood.

Table 5

Mean differences of Males and Females on stress reaction

Variable	Male		Female		F		9		5% CI		Cohen's <i>d</i>
	M	SD	M	SD	T	Df	P	LL	UL		
PD	13.94	7.78	17.59	8.25	-2.18	98	.03	-6.97	-.32	-.46	
PTSD	25.33	15.46	37.74	17.02	-3.67	98	.01	-19.1	-5.70	-.76	

Note. M=Mean SD=Standard Deviation, df=degree of freedom, CI=Confidence Interval, PD= stress reaction, PTSD= Post traumatic stress disorder

The table showed that slight differences were found between the mean scores of males and females that indicated that there is no significant difference present between the two categories (i.e. males and females) based stress reaction. The significance level was ($p>0.5$) which indicated that there was no significant difference on stress reaction among males and females. This means that both males and females were equally prone towards stress reaction.

Discussion

The results indicated that there was a significant relationship among stress reaction and posttraumatic stress disorder (PTSD) among flood victims. Asad (2011) investigated the relationship between psychopathology, clinical symptoms and their demographic correlated among female adolescent flood affectees of district Muzzafargarh. The results showed that most common disorder found among them was Posttraumatic Stress Disorder (PTSD) followed by Generalized Anxiety Disorder and Major depressive Disorder. Also clinical symptoms of Posttraumatic Stress Disorder (PTSD) and Generalized Anxiety Disorder such as emotional and stress reaction, depression and anxiety were also present among the participants.

It was also hypothesized that Post-traumatic stress disorder (PTSD) is likely to be a predictor of stress reaction among flood victims. This hypothesis was accepted that Post-traumatic stress disorder (PTSD) emerged as a significant predictor of stress reaction among the flood victims. Manguno-Mire, Sautter, Lyons, Meyers, Perry, Sherman, Glynn and Sullivan (2007) investigated the relationship between stress reaction and burden among female partners of combat veterans with Post Traumatic Stress Disorder (PTSD). The results indicated that partners of veterans with combat-related Post Traumatic Stress Disorder (PTSD) experienced significant level of emotional distress. stress reaction and partner burden each was associated with associated with others predictors have distinct correlates and implications within the family environment.

Results of our study indicated that a significant difference was not found on stress reaction among adults in middle and late adulthood as compared to early adulthood. This can be related to the fact that irrespective of their age groups all the three sub group i.e. early, middle and late adulthood are equally prone to developing stress reaction as they are residing within the same flood effected community and sharing the same resources.

The results indicated that adults in middle and late adulthood had increased level Post-traumatic stress disorder (PTSD) than people in early adulthood. Telles, Singh and Joshi (2009) explored the risk of developing Post Traumatic Stress Disorder and Depression in the survivors of the Bihar floods. The results indicated that the

people which were above the age of 60 years had significantly higher level of Post-Traumatic Stress Disorder (PTSD) as well as depression when compared with the others groups. This means the people in old age are more prone to developing Post Traumatic Stress Disorder (PTSD) depression which must be taken into account by the relief organizations.

This study showed that the people belonging to low socioeconomic status were not prone to developing stress reaction as well as symptoms of Post-Traumatic Stress Disorder (PTSD). This can be due to the fact the people living in the community sample had approximately the same level of income annually so no distinction could be made in their income status. It was hypothesized that there would be gender differences on stress reaction among flood victims of Lahore. Surprisingly the hypothesis was rejected as there was no gender differences were found on stress reaction among flood victims of Lahore. This can be related to the fact that the number of males and females was not equal and females were far less prevalent than males. Also, the females failed to give their consent and were reluctant to give any kind of information which can be traced to their educational level and lack of exposure.

A significant difference was found among gender differences on posttraumatic stress disorder among the flood victims. A research was conducted by Tahira (2011) investigated the role of social support in predicting the amount of psychological wellbeing and Quality of life among the flood victims of Muzzaffargarh. Results revealed that Social Support had an impact on Quality of Life a. The results revealed that on the basis of gender difference, males had a better level of social support, psychological wellbeing and quality of life as compared to females. This reveals the fact the females are more prone towards developing psychological symptoms and ailments like Post Traumatic Stress Disorder (PTSD).

Implications

A number of implications are generated from the current study. This study will help to understand the role of community to lessen the impact of flood disaster on mental health of victims. Based on this research the government, mental health professional and vulnerability of mental health problems among victims. The findings provided us broader spectrum about all those factors contributed in prevalence of psychological issues among flood victims such as less role of community including government, media, and people living nearby flood affected areas.

Limitations

There were a number of limitations based on individual, government and media level. First of all, the flood victims who were approached were mostly illiterate so even after proper psycho education they could not comprehend the questions asked and information sought properly. As the fieldwork was done on individual basis and the flood victims were approached on door to door basis so it consumed a lot of time and effort. Equal number of males and females could not be included in the study as the females were more introverts and shy so they failed to give their consent for data collection. There was also a contradiction between the information given by the government and the flood effected people.

Recommendations

Government should play an active role in managing the practical issue of disaster other than only calculating and proposing solution. Mental health issues such as stress reaction among flood victims and maintain proper monitoring system on the aid sent to the flood affected areas should be kept on preference. Also, during the flood they should play a major role in controlling physical illnesses and stress reaction by managing all disaster related issue on pre hand. The flood victims were passive in seeking aid for their damages, so media agencies should approach the government and NGO'S in order to help them. Volunteer work, relief aid projects and early contingency plans should be made and implemented by the government along with help of nearby educated people. The teachings of appropriate coping skills to deal with aftermaths of disaster i.e. both

physiological and psychological should be done with the individuals. These coping skills will help flood victims to cope with their stress reaction and trauma related issues and there will be less probability of developing stress reaction and post-traumatic stress disorder among flood victims in an area where floods are common.

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