

Psychological Problems Caused by the Flood Induced Displacement: A Study of the Victims of 2010 Flood in Khyber Pukhtoonkhwa, Pakistan

¹Saif-ur-Rehman Saif Abbasi and ²Bilal Shaukat

Department of Sociology, International Islamic University, Islamabad, Pakistan

Abstract: The victims of natural disaster sometimes experience psychological problems and continue to suffer for a larger part of their lives. The current study was conducted to explore the psychological problems faced by the affectees' due to 2010 flood and its induced internal displacement in Khyber Pukhtunkhwa (a province of Islamic Republic of Pakistan). A random sample of 396 flood victims was selected from two districts of Khyber Pukhtunkhwa (KP) namely; Charsadda and Swat using a multi-stage sampling technique. The primary data was collected from the respondents using a pre-designed interviewing schedule. The study found that people were psychologically suffered on account of flood and its induced internal displacement. Even after lapse of more than one year, the victims exhibit overreaction in normal situations and take a very little interest in routine matters and family affairs. They abruptly become gloomy and pay less attention even to their own well-being. Short temperament and anger were the common factors observed after any disaster. The victims are observed to be in a state of fear, showing nervousness, especially, at the time of sudden rain and even during the whole raining season, a kind of abnormal reaction to natural calamities. It was suggested that government and nongovernmental organizations involved in relief and rehabilitation efforts may also design different programs for the pacification and proper counseling of the victims of any disaster.

Key words: Flood affectees • Internal displacement • Psychological sufferings • Counseling • Pakistan • Charsadda • Swat

INTRODUCTION

The natural disaster is a situation mainly caused by hazards like flood, earthquakes, cyclones, volcano eruption, etc. They cause massive damage both to human beings and the other materials. Abrupt changes due to global warming or as a result of other human actions aimed to harm opponents may also result in one or other form of disasters. In this regard, changing weather patterns may cause more rain and a greater risk of floods in some areas [1].

Natural disasters affect many aspects of human life; however, its psychological implications for the human health are long lasting and deep-rooted which are often neglected during the relief and rehabilitation efforts. Evidences suggest that during and soon after floods, earthquakes, cyclone etc. affected people often go through stress and strain, unpleasant memories,

sleeplessness, nightmares and mental restlessness. This type of situation cause unjustified anger, promote quarrelling behaviours with other people and such behaviour continue for a long time afterwards [2].

The Post Traumatic Stress Disorder (PTSD) is an anxiety borne disorder developed in the wake of a major unfortunate event that caused trauma [3]. Studies had also deciphered the psychological implications of natural hazards in different age groups. Elderly people were more vulnerable to develop PTSD syndromes and other psychological problems [4].

Likewise, the occurrence of floods gave rise to mental disorders like anxiety and depression, which continued for months and years [5]. Heavy floods and other natural disasters proved to be the multiple stressors [6]. The study conducted in Lewes (Sussex) in the wake of 2000 floods, revealed that the adult flood affectees were exposed to psychological distress four-times higher than

children and it resulted the physical diseases both in adult and children [7]. This stress and anxiety adversely affected the disaster victims, especially, their health and well-being due to a presumed risk of repeating the incident [8]. A longitudinal study has also emphasized the psychological implications of floods on two communities affected by floods in 1998. The affectees felt more psychological effects than the physical ones and the former continued even for a longer period after the flood [9]. The flood victims became sensitive and felt anxiety and stress whenever heavy rains or water level in rivers began to rise. They also suffer from lethargy, sleeplessness, nightmares and intoxication, unjustified anger and even thinking of suicides [10].

The study on displacement seldom devoid the issue of mental health. However, it is a common fact that displacement is stressful and anxiety ridden. Along with displacements, it is also very difficult to read human mind and find difficulties associated with the psychological effects. A Proper study of the victims and treatment by health professionals may also help them gradually to come out from the difficult situations they are facing. Mental health is pivotal for the quality of life of the displaced people and the authorities have to acknowledge the mental health as a highly risky factor and must ensure to establish counseling services in both the pre- and post disaster as well as displacement periods, so that the people may be prepared for coping with the stress and strain and other psychological problems in case of any mishap [11].

Islamic Republic of Pakistan experienced a worst kind of flood in July 2010. Among other affected areas, Khyber Phuktoonkhwa was the most affected province of Pakistan where 1156 people have died and twenty million of people were affected, which comprise about 1.4 million internally displaced people. People have lost their shelter asset as well as other belongings and remained displaced from three months to more than a year. A study was conducted to explore the psychological problems faced by the victims of the flood and its induced displacement. The major objectives of the study were;

Objectives of the Study:

- To find out the socio-economic characteristics of flood affected people
- To study the psychological problems faced by the internally displaced people
- To explore the psychological counseling provided to the flood affectees

MATERIALS AND METHODS

Quantitative research design was followed to collect the information about psychological problems faced by flood affectees. Data was collected from randomly selected 396 respondents using a multi-stage sampling technique. At the first stage of sampling, two most affected districts namely Swat and Charsadda were selected through purposive sampling as 634,654 and 502,732 people were severely affected in these districts, respectively (<http://pdma.gov.pk>). At the second stage of sampling, nine union councils namely Municipal Committee-1, Ternab, Derizardad, Utmanzai, Mankyal, Islamapur, Maydan, Besham and Kalam were selected through a random sampling from the both districts. At the third stage, 40 male and female respondents were selected through a simple random sampling from each union council using displaced people list maintained by Social Welfare Department of KP. A pre-designed interviewing schedule was designed to collect the required information through a field survey from the respondents of age 20-60 years. In order to draw the results and explore the relationships between independent variables, both univariate and bivariate analysis were carried out using the following chi-square and gamma statistics through the following formulas.

Chi-square formula:

$$\chi^2 = \sum \frac{(fo - fe)^2}{fe}$$

$$\chi^2 = \sum \frac{(\text{frequency observed} - \text{frequency expected})^2}{\text{frequency expected}}$$

Gamma Statistics Gamma is represented by the symbol (γ). The formula for gamma expresses the difference between the number of concordant pairs and the number of discordant pairs as a proportion of the total number of concordant and discordant pairs and is given in the following:

$$\gamma = \frac{C - D}{C + D}$$

C denotes the total number of concordant pairs of observations and D indicates the total number of discordant pairs of observations.

Table 1: Distribution of respondents by their age, marital status, personal income and family monthly income

Category	Frequency	Percent
Age of the respondents (in completed years)		
i. 20-29	65	16.2
ii. 30-35	64	30.8
iii. 36-40	122	14.9
iv. 41-45	59	21.2
v. Above 45	86	22
Total	396	100
Marital status		
i. Married	356	89.9
ii. Divorced	6	1.5
iii. widow/separated	34	8.6
Total	396	100.0
Respondent personal income per month (Pak. Rupees)		
Less than 10000	99	40.2
10000-15000	121	49.2
Above 15000	26	10.6
Total	246*	100.0
Mean = 7321.97 Median = 8500.0 Std. Dev. = 6.360E3 Variance = 4.045E7		
Family income per month (Pak. Rupees)		
Less 10000	91	23
10000-15000	99	25
15001-20000	119	30
Above 20000	87	22
Total	396	100.0
Mean = 16757.58, Median = 16500, Mode =20000, Std. Dev. = 6228.6,		

RESULTS AND DISCUSSION

Socio-Economic Characteristics: Table 1 is comprised of four variables namely age of the respondents, marital status, their personal monthly income and family income per month. These are quite important socio-economic characteristics which exert a great influence on human life. The growing age brings rationality and elements of stability and more and more experiences of life infused with maturity in thought and action. Marital status of an individual raises the level of responsibility, gives an emotional support in times of emergencies and provides a social recognition to them. Monthly income of respondents from all the sources much affects their social life. Income raises a social status of an individual in society and affects a decision making power in family affairs.

The above table shows that majority of the respondents (43.2 percent) were more than forty years at the time of interview. About 31 and 15 percent of them were 30-35 and 36-40 years old, respectively. One sixth (16.2 percent) of the study respondents were less than 30 years old. Mean age was calculated as 38.54 years and standard deviation 8.835. The data shows that study had

a representation from young, middle and old age people who experienced the hardships of flood and its induced displacement. This representation of age groups enabled the researchers to accurately document the effects of disaster, damages to property and good insight of social and psychological problems encountered by the victims.

The table under discussion also indicates that 89.9% of the respondents were married, 1.5% of them were divorced and 7.8% were those whose spouses were died and less than one percent of the respondents were living an alienated life from their spouses. The study was delimited only to the married flood affectees in which a negligible number of the respondents were divorced or were living separately from their alive spouse due to the local Pukhtoon culture where divorce and separation is not considered good in society.

As regards to the personal income of the respondents after a natural disaster, majority i.e. 49.2 percent reported a monthly income of Rs.10000-15000, 40.2% had less than Rs.10,000, whereas one tenth of them had an income of more than Rs.15000 per month (Table 1). The mean monthly income of the respondents was Rs.7322 while median value was Rs. 8500.0 and standard deviation was 6228.6. The data shows that majority of the respondent had an average monthly income and fall in middle class families. This reflects their standard of living and further indicates the extent of suffering them and their dependent family members had to face on an account of flood and its resulting displacement.

The data on monthly income of family after displacement was also collected during a survey to capture their overall financial condition. The above table shows that 30 percent of the respondents had a monthly family income of Rs.15000-20000 whereas one fourth of them had Rs.10000-15000 and little less than one fourth (23 percent) family income per month was less than Rs. 10000. Both personal and family income of the study respondents indicates that they hardly meet their family basic needs and their rehabilitation may take a longer time as they had lost everything during this worse type of flood in the history of KP.

Psychological Problems: Table 2 shows the psychological sufferings of the respondents caused by the flood and its induced internal displacement. Flood affectees faced psychological problems like overreaction in normal situations, remain being sad and gloomy, taking less interest in family affairs and become short tempered. The table show that majority of the respondents (60.9) agreed that people were showing over

Table 2: Distribution of respondents by the psychological problems they encounter due to flood and displacement

Category	Frequency	Percent
People over reacted in normal situations		
i. Strongly Agree	135	34.1
ii. Agree	106	26.8
iii. Undecided	14	3.5
iv. Disagree	141	35.6
Total	396	100.0
Affectees remained sad and gloomy		
i. Strongly Agree	65	16.4
ii. Agree	182	46.0
iii. Undecided	19	4.8
iv. Disagree	44	11.1
v. Strongly Disagree	86	21.7
Total	396	100.0
Not interested in routine matters/family affairs		
i. Strongly Agree	35	8.8
ii. Agree	172	43.4
iii. Undecided	85	21.5
iv. Disagree	63	15.9
v. Strongly Disagree	41	10.4
Total	396	100.0
Affectees become short tempered		
i. Strongly Agree	57	14.4
ii. Agree	176	44.4
iii. Undecided	22	5.6
iv. Disagree	102	25.8
v. Strongly Disagree	39	9.8
Total	396	100.0

reaction in normal situation after the flood and this also includes 34.1 percent of those who were strongly agreed to this type of psychological sufferings. However, little more than one third i.e. 35.6 percent of the respondents were not agree that people overreact in normal situations due to the flood induced displacements.

The above table also reflects the effects of the internal displacement on the people's behaviors and attitudes in their normal daily lives. Major portion of the study respondents (62.4) agreed that affected people feel sad and gloomy after the flood and remain recalling the happy life they were spending before flood. They also include little more than one sixth of the respondents (16.4 percent) who were strongly agreed that gloomy situation prevailed among flood and displacement victims. Slight more than one third of the respondents (33.8 percent) disagreed that affected people remain sad and gloomy after the flood. The data shows that majority of the people remain sad and gloomy as a result of flood induced displacements as they had lost their assets and remained shelter less for a reasonable period of time.

Table 3: Distribution of respondents by the their sufferings of fear and anxiety

Category	Frequency	Percent
People stay afraid/ about natural disasters		
i. Strongly Agree	132	33.3
ii. Agree	188	47.5
iii. Undecided	52	13.1
iv. Disagree	17	4.3
v. Strongly Disagree	7	1.8
Total	396	100.0
Felt anxiety in rain and rainy season		
i. Strongly Agree	69	17.4
ii. Agree	195	49.2
iii. Undecided	6	1.5
iv. Disagree	103	26.0
v. Strongly Disagree	23	5.8
Total	396	100.0

The table under discussion further describes that flood affectees usually take no interest in the routine matters and their family affairs. More than half of the respondents (52.2 percent) indicated their agreement to the statement that affected people take no interest in their routine family affairs and life seems boring for them after experiencing a displacement living due to flood in their native areas. This also includes about 9 percent people who had shown their strong agreement to the emergence of such type of psychological problem. The table further indicates that most of the time flood induced internal displaced people become short tempered due to their multiple sufferings while living in temporarily provided shelter houses along with their children and other family members. It shows that more than half of the respondents (58.8 percent) were agreed that affected people become short tempered, behave accordingly in different situation and even are ready to quarrel with others in most of the cases. The data shows that majority of the flood affected people in the area were short tempered and behave aggressively even in case of a slight social disagreement with other members in family or community. The prevalence of this type of psychological problems is not creating hurdles for the individuals but even for the rest of the members in family and even for the community.

Psychological Sufferings: Table 3 reveals about another set of psychological sufferings among study respondents. Fear from natural disasters and nervousness in abrupt rain and during the whole rainy season are adversely influencing the lives of the disaster-victims. The table shows that a significant majority of the respondents (80.8 percent) agreed that people become afraid about natural disasters after 2010 flood and among

them even one third (33.3 percent) strongly agreed to the prevalence of such kind of fear among the local people. The data shows that a high majority of the respondents were in the grip of fear about the happening of any natural disaster at any time. Such kind of fear, about natural disasters keep people restless and they began to recall their suffering experienced in 2010 flood and its subsequent induced displacement. Leaving home and living in camps with their families in temporarily build shelters with lack of basic facilities was really a painful experience and recalling such experience under the fear of natural disaster further makes their lives difficult.

The table under discussion also reveals another most important and commonly noticed psychological problem of anxiety in rainy season. The table explains that major proportion of the respondents (66.6 percent) were agreed that now affected people feel anxiety and show their worries during rain and especially the entire rainy season in which 17.4 percent were strongly agreed about the nervousness of the people in sudden rain and monsoon season.

Psychological Counseling: Psychological suffering of the respondents on account of flood and displacement faced include the form of overreaction in normal situation, being sad and gloomy, taking no interest in family affairs, become short tempered and no interest in their routine work. In the refugee camps, government and nongovernmental organizations arranged various kinds of counseling services for the victims of disaster. Table 4 shows that 12.9% of the respondents were highly satisfied on the psychological support provided in the form of psychological counseling while living in the refugee camp. However little less than one third of the respondents (31.6) reported their satisfaction up to some extent and more than half of the respondents that is 55.6 percent had not received any counseling. People mentally suffered in flood due to a huge amount of material damages in their homes and properties that affect their mental health in the form of overreaction, fear and short temperedness. Counseling in psychological problems is one of the important psychological supports to the flood-affected people.

The above table also shows that 35.9 percent of the respondents were satisfied that counseling services provided to them during displaced living help to prevent further distress and sufferings. This also includes 8.6 percent of those who were satisfied to the degree of great extent about the effectiveness of such services. There were 64.1 percent of the respondents

Table 4: Distribution of respondents by level of satisfaction on various psychological treatment services provided in relief camps

Category	Frequency	Percent
Counseling service for mental health		
i. To great extent	51	12.9
ii. To some extent	125	31.6
iii. Not at all	220	55.6
Total	396	100.0
Psychological counseling service to prevent further distress and suffering		
i. To great extent	34	8.6
ii. To some extent	108	27.3
iii. Not at all	254	64.1
Total	396	100.0
Counseling to create self encouragement among the affectees		
i. To great extent	33	8.3
ii. To some extent	116	29.3
iii. Not at all	247	62.4
Total	396	100.0
Psychological counseling to rebuild hope for future		
i. To great extent	34	8.6
ii. To some extent	107	27.0
iii. Not at all	255	64.4
Total	396	100.0

who reported their satisfaction to the response category not at all. The table under discussion also shows one of the psychological rendered provided by the governmental and nongovernmental organizations providing the spirit of self encouragement to the flood affected people in the camp. About 38 percent of the study respondents were satisfied that psychological counseling services created a spirit of self-encouragement and this includes about eight percent of those who were satisfied to the degree of great extent on this account.

The discussion in the foregoing paragraphs revealed that flood affectees take no or less interest in the routine and family affairs after and feel that life is boring and tedious for them. Few of the organizations involved in relief and rehabilitation efforts tried to rebuild hope for future and encouraged flood affected people to become an active member of the society as they were living before flood. Table 4 reveals the level of satisfaction of the respondents on such efforts. The table shows that 35.6 percent were satisfied on such efforts and among them 8.6 percent were satisfied to the degree of great extent and remaining (27 percent) were satisfied to some extent. There were 64 percent of the respondents who reported non-satisfaction. It is quite possible that they were either not reached by the team of professional engaged in psychological counseling or they did not like to benefit from them.

Table 5: Extent of damage to house and psychological problems faced by the respondents

House damaged	Psychological problems			Total
	Agree	No opinion	Disagree	
To great extent	78.1% (107)	2.2% (3)	19.7% (27)	34.6% (137)
To some extent	55.3% (52)	6.4% (6)	38.3% (36)	23.7% (94)
Not at all	49.7% (82)	3.0% (5)	47.3% (78)	41.7% (165)
Total	60.9% (241)	3.5% (14)	35.6% (141)	100.0% (396)
Chi Square value = 29.745		df = 4		Significance = 0.000
Gamma value = 0.399				Significance = 0.000

Table 5 shows the results of bivariate analysis wherein a cross-tabulation between two variables namely; extent of damage to house and sufferings of psychological problems by the respondents was carried out to explore the association between them. The data shows that houses of more than 58 percent of the respondents were damaged due to a flood occurring in 2010 in Khyber Puktoonkhwa. Among these respondents, 35% suffered heavy damages to their houses. As regards the psychological problems, 61 percent of the respondents encountered due to the flood induced displacement. The respondents who suffered a higher degree of house damages also encountered a higher level of psychological problems. The chi-square and gamma statistics were applied to explore the relationship between independent and dependent variables.

The value of ch-square and level of significance proved the existence of relationship between extent of damage to house by flood and psychological problems encountered by them due to the displacement. Similarly, the value of gamma statistics and its significant level verified the presence of direct association between the two variables.

CONCLUSION

The study finding suggests that flood induced displacement resulted in various types of psychological problems to victims of this disaster. Most of the people showed overreaction in normal situation and started taking no interest in routine matters and displayed an avoiding behavior towards the family affairs. They remain gloomy and sad in most of the time and take less or no interest even in their self care after experiencing hardships of flood and its induced displacement. Most of the time there were sufficient incidents of short temperedness displaying an angry behavior while interaction with others. The affectees remain fearful especially, at the time of sudden rain and during the whole rainy season, it is a sign of an abnormal reaction to natural calamities.

Suggestions and Recommendations: During relief and rehabilitation efforts, psychological effects of natural disaster are mostly ignored and more emphasis is given on food and shelter. No doubt immediate access to basic needs is quite important but while planning for relief and rehabilitation, efforts should be made to minimize potential psychological effects of disaster on the affected community. In this regard, a team of professionals comprised of Sociologists and Psychologists may be involved at all levels. A coordinated effort of these professionals can prove to be more beneficial to minimize socio-psychological problems to affected population. The psychological implications of the flood induced displacement on various age groups of the displaced people are not as easy as they seem to be and it is also difficult to define the effects on the present state and future position of the dislocated folk. A targeting analysis should be taken into account while dealing with people of difficult ages such as children, adolescents, youth and adults. Early arrangement of psychological counseling service may help to minimize depression and timely management of stress and anxiety which in turn promote the self-encouragement and hope for future.

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