

## **LEVEL OF ANXIETY AND POST TRAUMATIC STRESS DISORDER AMONG FLOOD EFFECTED AND NON-EFFECTED STUDENTS OF SWAT**

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The present research examined the level of anxiety and Post-traumatic Stress Disorder (PTSD) among flood effected and non-effected college students of Swat. In this regard it was hypothesized that students who were effected by floods would have high level of anxiety and PTSD as compared to those who had not been effected. The participants of the current study consisted of  $N=204$  (*Male*  $n=102$ ; *Female*  $n=102$ ) college students from Swat, Pakistan who were approached through random sampling technique. Both flood effected ( $n=102$ ) and non-flood effected ( $n=102$ ) college students were included in the study. Two standardized instruments, Beck Anxiety Inventory (BAI) and PTSD Checklist Civilian (PCL-C) were used to collect data. Results showed that flood effected college students displayed high level of anxiety and PTSD as compared to those who were not-effected. It was also determined that female flood effected college students had high level of anxiety and PTSD as compared to male flood affected college students. The study has important implications for the development of the posttraumatic psychotherapeutic intervention plans.

*Keywords:* Flood effected and non-effected students, PTSD, anxiety, college students.

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A Flood is a natural disaster, in which there is an over flow of water that causes vast damage or destruction. Floods occur when a huge amount of water is accumulated due to heavy rainfalls and snow melting. Unfortunately, Pakistan has suffered many natural disasters in the past years and floods are on top of them. Likewise they had taken many precious lives and deteriorated the properties of people. Many problems also arise due to floods such as the lack of clean water and food, health issues which are further worsened by lack of medical assistance and also infrastructural damage (Khan, 2013).

Floods have an impact on the lives of people and societies, and therefore also have consequences on the environment and economy. The direct effects of flooding include loss of precious human lives, loss of livestock, worsening of health conditions, damage of property, devastation of crops and infrastructure. Similarly some economic activities may come to stop, as people are forced to leave their homes and their normal lives are disturbed. Infrastructure damages such as education and health facilities, wastewater treatment, electricity, communication, and transport may also have adverse effect on individuals. Along with these issues floods or any other natural disasters can also affect the physical and psychological well-being of individuals. Similarly, the loss of loved ones, displacement from one's home, loss of property and disruption to business and social affairs can cause continuing distress among children and adults (Middelmann, 2009).

Some individuals experience the psychological effects of such disasters for long periods of time and require extended treatment and medication. Psychological problems that arise due to floods involve post-traumatic stress disorder, anxiety disorders, depressive disorders etc (Garrett, 2011).

Many disasters such as floods leave many distressing and disturbing effects on the victims which result in psychological problems such as post-traumatic stress disorder. PTSD is a common mental problem that arises among victims of many

disasters like floods, earthquakes, hurricanes, violent crimes and accidents. It is also evident that traumas and their exposure can lead to some permanent devastating memories which can lead to Post-traumatic Stress Disorder (PTSD) and when memories are avoided the symptoms gets more severe. PTSD occurs as the result of disasters like flood, fire, war, imprisonment, etc. and can effect a person at any age (Sena & Woldemichael, 2006).

Foa, Keane, Friedman, and Cohen (2008) labeled PTSD symptoms in three main categories. The first main symptom of PTSD involves persistent disturbing memories about the traumatic event that disrupts daily actions and also physical reactions to situations that remind of the traumatic event. The second symptom involves avoidance and emotional detachment of feelings such as lack of interest in day-to-day activities with less expression of moods. The third main symptom of PTSD involves arousal and difficulty in focusing along with exaggerated response, irritability or outbursts of anger and sleeping troubles.

Another psychological problem that is very prevalent after any disaster is anxiety. Anxiety disorders share the common characteristics of unwarranted anxiety, terror and their associated behavioral conflicts. Terror or fear can be defined as an expression to actual or apparent threat while anxiety is the expectation of upcoming threat. According to Diagnostic and Statistical Manual of Mental Disorders, fifth edition the types of anxiety disorders can differ from one another on the basis of circumstances or substances that persuade anxiety and fear. Anxiety disorders most frequently occur in females as compared to males (American Psychological Association, 2013).

Anxiety disorder can be caused by a combination of different factors such as biological, mental, medications, family history, life challenging practices that include stressful or traumatic life events, early developmental problems, alcohol, or other health or psychiatric issues. Mental factors attempt to explain that anxiety disorders are caused due to cognitive, behavioral and

developmental consequences. The biological factors suggest that these are caused due to problems arising in the brain activity, genetics, and medical, psychiatric and substance use issues. Genetic and medical factors also play an important role in the development of anxiety disorder (Rector, Laposa, Kitchen, Bourdeau, & Joseph-Massiah, 2016).

Davidson (2004) in his study found that females showed high level of PTSD than males. Ugwu and Ugwu (2013) in their study found out that females were more vulnerable to developing PTSD. Jahan (2015) studied flood related mental illnesses in Bangladesh such as PTSD, anxiety, depression and drug abuse. Results revealed that females, married people and unemployed people were more likely to develop depression as compared to males, unmarried people and employed people. The total number of mental illness cases increased from 950 (38.0%) to 1,647 (65.9%) in Bangladesh post the floods. Mason, Andrews and Upton (2010) studied the psychological impact of exposure of floods in UK. Out of 444 respondents 24.5% of respondents showed symptoms of anxiety, 27.9% of PTSD and 35.1% of depression. Results showed that women were more likely to developed PTSD, anxiety and depression than males.

A study conducted locally by Nisha, Kiran, and Joseph (2014) determined the prevalence of PTSD among disaster affected children. Nasir, Zainah and Khairudin (2012) investigated psychological effects on the victims of the Johor flood. The exploratory qualitative study indicated that victims of the flood showed greater symptoms of anxiety, fear and depression as compared to the general population. Another study (Ahmad, Bukari & Munir, 2011), examined the prevalence of (PTSD) in flood affected students of Pakistan from 5 different flood affected districts of Khyber Pakhtunkhwa. Results concluded that PTSD greatly affects students of secondary school, and it was also revealed that female students are more affected by PTSD as compared to male students. Similarly displaced secondary school students were also greatly affected by PTSD as compared to non-displaced students. Wani et al., (2016) studied PTSD among

victims of flood in Kashmir Valley. Results showed that women and adolescents were more prone to develop PTSD as compared to males and adults. Sena and Woldemichael (2006) studied prevalence of PTSD among flood affected people in Nowshehra. The results revealed that the participations' experienced same level of PTSD irrespective of their gender and education level. Sankar and Amin (2016) studied the level of anxiety, stress and depression among flood affected people in Kashmir valley and the results of their study revealed that there was a significant difference between the male and female victims with respect to their scores on anxiety, stress and depression.

In the light of the above mentioned literature it can be concluded that floods have moderate to severe effects on the mental and psychological health of the affected individuals. Out of all the various natural disasters, floods remain the most common in Pakistan and hence effect the most people. Since Pakistan has a rich culture and different areas of the country have diverse cultural values and rituals therefore, it is highly recommended that studies should be conducted in different regions effected by floods in Pakistan so that extensive intervention plans can be formulated. In the light of the above mentioned studies following research objectives have been formulated i.e. to find out the level of anxiety and PTSD among flood affected college students of Swat and to investigate psychological effects of flood based on gender among college students of Swat.

### **Hypotheses**

In the reflection of the above stated literature and objectives following hypothesis were tested:

1. There would a significant difference in the PTSD level of flood-effected and Non-effected students, as flood-effected students would have higher level of PTSD.

2. There would a significant difference in the anxiety level of flood-affected and Non-affected students, as flood-affected students would have higher level of anxiety.
3. There would be a significant difference in the level of PTSD and anxiety of flood-affected students based on their gender.

## **Method**

### **Participants**

The participants of the present study consisted of  $N=204$  college students who were selected from flood affected areas of Swat. Both male ( $n = 102$ ) and female ( $n = 102$ ) college students of Swat who were affected ( $n = 102$ ) and those students who were not affected ( $n = 102$ ) by the flood were included in the study. The participants of the study belonged to lower and middle socioeconomic status and were selected by random sampling method.

### **Measures**

Following measures were used for data collection in the present study:

**Personal Information Sheet.** It was used to collect demographic information about the participants such as age, education, gender, past medical record, and psychiatric history, etc. the Personal Information Sheet also inquired about whether participants were affected by the floods or not.

**Beck Anxiety Inventory (BAI).** The Beck Anxiety Inventory was developed by Beck, Epstein, Brown, and Steer (1988). The scale measures the severity of anxiety disorder in adults and adolescents. The Scale comprises of 21 items and respondents answer each item by following a 4 point Likert scale ranging from “not at all” to “severely”. The Corrhnbach Alpha reliability of the scale is 0.92 and test-retest reliability is 0.75.

**PTSD Checklist Civilian Version (PCL-C).** The PTSD Checklist Civilian Version (PCL-C) was developed by Weathers, Litz, Herman, Huska, & Keane (1994). It measures symptoms in relation to stressful experiences. The scale comprises of 17 items and respondents answer each item by following a 5 point Likert scale ranging from “Not at all” to “Extremely”. The reliability of the scale ranged from 0.94 to 0.97 and test-retest reliability ranged from 0.88 to 0.96.

### Procedure

The data collection process started after official permission was taken from the heads of various colleges. The students of the study were approached through random sampling from various colleges and data was collected from both flood effected and non-effected students. The participants were instructed about the objectives and importance of the study and consent from was signed by them prior to data collection. They were assured that their data will be kept confidential and would only be used for study purposes. Personal information sheet, anxiety scale and PTSD scale were administered on both flood effected and non-flood effected college students of Swat district, Pakistan

### Results

Statistical analysis was carried out with the help of Statistical Package for Social Sciences (SPSS). Independent sample *t*-test was used to analyze the data.

**Table 1**

*Independent Sample t-test showing the Comparison of PTSD between Flood Effected and Non-Effected Students of Swat (N=204).*

Participants	<i>n</i>	<i>M</i>	<i>SD</i>	<i>t</i>	<i>p</i>	<i>Cohen's d</i>
Flood effected	102	45.83	13.97	14.44	.01	1.01
Non flood-effected	102	25.35	2.817			

The findings of above-mentioned table show that the flood effected college students have high level of PTSD as compared to the non-flood effected college students.

**Table 2**

*Independent Sample t-test showing the Comparison of Level of Anxiety between Flood Effected and Non-Effected Students of Swat (N=204).*

Participants	<i>n</i>	<i>M</i>	<i>SD</i>	<i>t</i>	<i>p</i>	<i>Cohen's d</i>
Flood effected	102	25.19	11.27	15.28	.01	1.07
Non flood-effected	102	07.42	03.09			

The findings of the current study reveal that the flood effected college students have high level of anxiety as compared to the non-flood effected college students.

**Table 3**

*Independent Sample t-test showing the Comparison of Gender of Students based on their Level of PTSD (N=240)*

Participants	<i>n</i>	<i>M</i>	<i>SD</i>	<i>t</i>	<i>p</i>	<i>Cohen's d</i>
Male	102	30.62	08.85	-5.23	.01	0.36
Female	102	40.66	17.03			

According to this table the flood effected female students had high level of PTSD as compared to the male flood effected college students.

**Table 4**

*Independent Sample t-test showing the Comparison of Gender of Students based on their Level of Anxiety (N=240)*

Participants	<i>n</i>	<i>M</i>	<i>SD</i>	<i>t</i>	<i>p</i>	<i>Cohen's d</i>
Male	102	12.70	10.20	-4.40	.01	0.31
Female	102	19.95	12.84			

According to above-mentioned table the flood effected female students had high level of anxiety as compared to the flood effected male students.

### **Discussion**

The present study aimed to investigate the level of anxiety and post- traumatic stress disorder between flood effected and non-effected college students of Swat district, Pakistan. The present study provides important implications for future work especially psychotherapeutic interventions and policy making related to enactment, restoration and inhibition programs to reduce the harmful psychological effects of any future disasters.

The first hypothesis of the current study was that there would a significant difference in the PTSD level of flood-effected and Non-effected students where flood-effected students would have higher level of PTSD. The findings are also supported by other researchers conducted in the past. A results of a study conducted by Nasir, Zainah and Khairudin (2012) to examine the prevalence of PTSD among flood affected school children in Pakistan revealed that secondary school children were highly effected by post-traumatic stress disorder as compared to general population. Piyasil et al (2007), examined Post traumatic stress disorder (PTSD) among children after Tsunami disaster in Thailand and the findings of his study showed that effected students were more likely to develop PTSD as compared to non-effected students.

The second hypothesis of the study stated that flood effected college students would report high level of anxiety as compared to those students who weren't effected by flood and the results of the study supported the hypothesis. There was a significant difference between the anxiety level of flood effected students and non-effected students. Similarly, Azeem (2012) found that flood effected students had high level of anxiety as compared to non-effected students. Aslam and Tariq (2010) conducted a study on trauma, depression, anxiety and stress among individuals

living in earthquake effected and uneffected areas and their results depicted that students of effected areas have high level of anxiety as compared to non-effected students.

Furthermore, it was also hypothesized that flood effected female college students would have high level of PTSD and anxiety as compared to flood effected male college students. The results of the study supported the hypothesis as a significant difference was found in the PTSD and anxiety levels of flood effected female and male college students. This is again supported by the above mentioned research findings of Azeem (2012). Mason, Andrews and Upton (2010) also found that females had higher level of PTSD than males. Higher level of PTSD among disaster effected females was also supported by indigenous findings and cultural relevance as well (Aslam & Kamal, 2014; Mujeeb & Zubair, 2012).

In conclusion, the findings of the current study suggest that flood effected students experience higher level of PTSD and anxiety as compared to non flood effected college students.. The current assumptions were supported by the above mentioned literature review. Hence, the findings highlight the need for the development of psychotherapeutic intervention plans for the psychological crisis after any disaster.

## **Conclusion**

The results of the study supported the hypothesis and suggest that natural disasters such as floods adversely effect the psychological health of college going students. The results of the study revealed that flood effected college students had high level of PTSD and anxiety as compared to non-flood effected students. It is also concluded from the present study that female college students were more likely to develop PTSD and anxiety disorder as compared to male college students. Hence, it is evident by the current study that natural disasters have severe effects on the mental health of college going students. Special intervention plans should be developed in the light of the current study for the

enhancement psychological well-being of the effected individuals particularly college students.

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