

A Look at Mental State of the Victims of a Disastrous Flood: An Experience from Kashmir

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ABSTRACT

Background and objectives: Floods have potentially a negative impact, not only on the physical health but also on the mental health of the affected population. Our aim was to find the pattern of psychiatric morbidity in the flood victims who visited a mental health camp. **Methods:** This was a cross sectional study, approved by Ethical Committee of government medical college, Srinagar. Written informed consent from the subjects was taken. Semi-structured questionnaire was used to record the socio-demographic status. MINI-International Neuropsychiatric Interview (MINI-Plus) was used to assess the psychiatric diagnosis. **Results:** A total of 115 subjects visited the camp. Most of them belonged to 40-49 years age group (41.74%), females (66.96%) out-numbered males. Most of patients belonged to nuclear families (55.65%). 66 (57.39%) of our subjects had major depressive disorder, 14 (12.17%) had generalized anxiety disorder, 7 (6.09%) had panic disorder, 7 (6.09%) had post-traumatic stress disorder and 5 (4.35%) had adjustment disorder. 16 (13.91%) of our subjects were not found to have any psychiatric disorder. **Conclusion:** Large number of people is potentially in need of psychological attention following exposure to a disaster such as floods. The people, who are at potential risk of developing psychiatric disorders such as those in poor health and those who have been relocated, may benefit from targeted mental health services following a disaster like floods. In our study, major depressive disorder was the most common disorder affecting flood victims with 57.39% of the patients suffering from it.

Keywords: Flood, Psychiatric Morbidity, Post Traumatic Stress Disorder

In the first decade of twenty first century, the most common type of disaster globally has been flooding, responsible for almost half of all victims of natural disasters and for economic losses^[1]. An increase in frequency and intensity of flooding events is expected due to rising sea levels and more frequent and extreme precipitation events^[1,2]. In addition, with increasing urbanization, more people will be exposed to flooding events^[3]. Although there is a conflicting evidence with regard to the impact of floods on suicide and substance abuse, but there is potentially negative impact on mental health, with increasing levels of post-traumatic

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stress disorder (PTSD), anxiety, and depression and this impact is similar in both developed and developing countries^[4]. Prevalence of psychiatric disorders, ranging from 8.6% to 53% has been reported in studies on victims of floods in the first two years following floods [5,6]. In addition to psychological distress, a portion of the physical illnesses experienced by victims may be accounted for these floods^[7]. It has been found that the most profound psychosocial effects are long-term, gradual and co-morbid^[8]. A study in a remote Korean village found flood-related injury, death of relative or damage to possession as significant risk factors for depression (51%) and PTSD (22%) at 18 months post-floods^[6]. A similar study in Thailand, ten weeks following an unexpected, severe flood showed that subjects who were exposed to severe loss were four times more likely to report PTSD symptoms^[9]. Insight into long term impact of floods on psychiatric disorders can be provided by longitudinal studies, e.g. Norris et al. observed that despite the initial decline in psychiatric symptoms, in the longer term (two years) the prevalence of trauma and depression stabilized at levels much higher than those in the general population^[10]. Similar findings were reported in Thailand when an increase in psychiatric symptoms one year following the flood was observed despite a significant downward trend in psychiatric symptoms in the first year^[9]. This may be because floods can result in acute and delayed onset of PTSD, with different symptoms emerging at short and long-term^[11]. People witnessing a natural disaster may be exposed to high frequency physical injury, threat to or actual loss of life and/or serious continuing financial difficulty which can result in deterioration of psycho-social health in victims of that disaster^[1]. Flood victims in Kashmir, more or less, experienced these threats making them more vulnerable towards getting psychiatric impairments. In September 2014, the Kashmir region suffered disastrous floods across many of its districts caused by torrential rainfall. The Indian administrated Jammu and Kashmir, as well as Pakistan administered Azad Kashmir, Gilgit-Baltistan and Punjab were affected by these floods. In Srinagar, most of the city areas were submerged under water. The river Jhelum spilled over submerging Sonwar Bagh, Shivpora, Batwara, Soitang, Lasjan, Padshai Bagh, Natipora, Pandrathan, LalChowk, Rajbagh, Jawahar Nagar, Gogji Bagh and Wazir Bagh neighborhoods of city. The first and the second story of the houses and hotels in Rajbagh that were packed with tourists were submerged. This led to heavy financial, residential and environmental losses. Living in conditions with lack of proper food, shelter, clean drinking water added extra discomfort. Floods with such an impact can have long lasting effects not only on physical but mental health of people as well^[12,13]. A variety of psychiatric symptoms and disorders can be expected to be present among them. As a preliminary study, we aimed to study the pattern of psychiatric disorders in patients who had been victimized by floods in a mental health camp so that we can get an idea about the psychiatric disorders among flood victims.

METHODS

This was a cross sectional study conducted among the flood victims of 2014 Kashmir floods attending the mental health camp organized by department of psychiatry, government medical college Srinagar in Jawahar Nagar area of Srinagar city four months after the floods. This study was approved by the ethical committee of government medical college Srinagar. Study population comprised of subjects aged 18 years or more who gave the consent for the

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study. All those subjects who were suffering from any psychiatric disorder prior to the floods were excluded from the study. A semi-structured interview was used to record the socio-demographic profile of the patients. Structured diagnostic interview in the form of MINI-International Neuropsychiatric Interview (MINI-Plus) was used to assess the psychiatric diagnosis^[14]. The data about various parameters categorized according to age group, sex, family type, and diagnosis was entered into Microsoft Excel. Statistical analysis was carried out with Statistical Package for Social Sciences (SPSS) 20.0 version.

RESULTS

Of 115 patients, 38 (33.04%) were males and 77 (66.96%) were female, with an approximate male to female ratio of 1:2. Mean age of the subjects was 44.01 years (SD=11.080, with age range of 18 years to 72 years. Subjects in age group 40-49 years constituted the largest proportion with 48 (41.74%) belonging to this age group followed by 30 (26.09%) in 50-59 years age group and 18 (15.65%) in 30-39 years age group. 64 (55.65%) of subjects belonged to nuclear families whereas 51 (44.35%) of subjects were from joint families. 66 (57.39%) of our subjects were working at home (housewife), 29 (25.22%) were employed, 9 (7.83%) were students and 11 (9.57%) were laborers (Table 1).

Table 1: Socio-demographic profile.

Age in years	Number of patients	Percentage
<20	2	1.74
20-29	12	10.43
30-39	18	15.65
40-49	48	41.74
50-59	30	26.09
≥60	5	4.35
Total	115	100
Sex of patient	Number of patients	Percentage
Male	38	33.04
Female	77	66.96
Total	115	100
Family Type	Number of patients	Percentage
Nuclear	64	55.65
Joint	51	44.35
Total	115	100
Occupation	Number of Patients	Percentage
House-wife	66	57.39
Employed	29	25.22
Laborer	11	9.56
Student	9	7.83
Total	115	100

Table 2: Psychiatric morbidity.

Diagnosis	Number of Patients	Percentage
MDD	66	57.39
GAD	14	12.17
Panic disorder	7	6.09
Adjustment disorder	5	4.35
PTSD	7	6.09
No Diagnosis	16	13.91
Total	115	100

With regard to profile of psychiatric disorders, 66 (57.39%) of our subjects had major depressive disorder, 14 (12.17%) had generalized anxiety disorder, 7 (6.09%) had panic disorder, 7 (6.09%) had post-traumatic stress disorder and 5 (4.35%) had adjustment disorder. 16 (13.91%) of our subjects were not found to have any psychiatric disorder (Table 2).

DISCUSSION

The current study intended to find the socio-demographic profile and psychiatric morbidity in the patients who visited the mental health camp four months after the 2014 devastating floods in Srinagar. Females outnumbered males in our study with female to male ratio of 2:1. This is in accordance with the epidemiological studies on flood victims which have found females to be more frequently affected by psychiatric disorders than males^[15-17]. Female preponderance in our study could be due to the fact that females have more brooding ruminations than males. In a community sample, engagement in brooding/intrusive rumination was reported more commonly in female adolescents than male adolescents and there was a positive relationship between brooding rumination and depressive symptoms^[18,19]. In addition, mere exposure to a stressful event is not sufficient to cause a psychiatric disorder rather the subjective appraisal is also important and studies have shown females to appraise the traumatic events more and think over it repeatedly^[20]. Major depressive disorder (57.39%), anxiety disorders (18.26%), post-traumatic stress disorder (6.09%) and adjustment disorder (4.35%), were the disorders diagnosed in people who visited us. Depression, anxiety, and PTSD are the most commonly found psychiatric disorders in people affected by floods^[1]. Similar results have been found in previous studies of water damage after Hurricanes and the summer 2007 floods in England^[21,22]. More general studies on the impact of flooding on health reported significant PTSD findings in the first 6–24 months after flooding^[23]. Overall, depression is increasingly experienced by people affected by floods^[24-26] and this pattern was not only found in adults but also in children^[27]. Studies have shown depression more in people affected by floods as compared to those who were not-affected by floods^[28-31]. Although this was not found to be the case in an Australian study conducted with older adults^[32]. Similar to depression, higher levels of anxiety disorders were found in those exposed to floods than non-exposed individuals^[28-30,32]. Studies which compared the prevalence of PTSD in flood affected areas with those of non-affected areas have indicated a higher prevalence of PTSD or PTSD-related symptomatology in the flooded area^[1,28,29,32,33]. It has also been suggested that PTSD or PTSD-related symptoms could be responsible for the

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development of other psychiatric disorders such as depression, anxiety or substance abuse disorders^[34]. Percentage of patients with PTSD in our study was rather low as compared to previous studies. Margoob et al. found that a sizeable number of outpatient cases were suffering from PTSD, besides depressive disorders but these patients are just the tip of the iceberg as suggested by population based figures^[35].

So, one possible reason for our lower results for PTSD could be that our study was not a community study, as were the previous studies in flood affected areas, and the patients with PTSD have not visited the camp.

Disasters including floods are inevitable truth of our life and have been part of human civilizations. Besides having its effect on physical health of affected populations, disasters also have substantial effect on their mental health^[36]. Mental health professionals can play a multi-dimensional role in a disaster response team from educating, training, negotiating, administrative, fund raising, collaborative skill transferring, treating, advocating and rehabilitating^[37]. Thinking from 'when' the disaster strikes to 'if' the disaster strikes has necessitated a paradigm shift from relief centered post-disaster management to a holistic, integrated and preventive approach based upon principles of disaster prevention, preparedness and mitigation. 37 Therefore responding to the emotional and psychological needs of the affected population and beginning community based group interventions as early as possible can help to mitigate the development of psychiatric disorders in the affected people.

CONCLUSION

To conclude, large numbers of people are potentially in need of psychological attention following exposure to a disaster such as floods. Following such events appropriate support from community and access to Primary Care services would be important in detecting distress. The people, who are at potential risk of developing psychiatric disorders such as those in poor health and those who have been relocated, may benefit from targeted mental health services following a disaster like floods. 57.39% of our subjects had major depressive disorder, 12.17% had generalized anxiety disorder, 6.09% had panic disorder, 6.09% had post-traumatic stress disorder and 4.35% had adjustment disorder. Researchers, practitioners and policy-makers may be able to benefit from information generated by this study and thus will work in favor of mental well-being of people affected by floods.

Being a camp based study, its results can't be generalized into the community wherein post-floods burden of psychiatric disorders in common and PTSD in particular, is very high. In addition, for the psychiatric diagnosis we relied solely on MINI-International Neuropsychiatric Interview (MINI-Plus), without taking into consideration the pre-floods psychological distress level, history of exposure to any other traumatic event, family history of psychopathology, and/or psychosocial support they received and thus further limiting the generalizability of these results.

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Conflict of Interest

There is no conflict of interest.

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