

## Mental Health in the Wake of Flooding in Pakistan: An Ongoing Humanitarian Crisis

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When natural disasters such as flooding affect a region, ill-health tends to follow. This commentary reviews the epidemiological evidence and considers the implications of the rate and prevalence of mental disorder in the flood-affected regions of Pakistan. In particular, the risk of increasing disability is highlighted. Given the limited resources for psychiatric assessment and treatment available currently in Pakistan, the case is made for investment and aid to prevent the significant long-term mental health consequences that could arise from the recent natural disaster.

Rainfall in Pakistan varies radically. The monsoon season (from July to early September) is marked by heavy downpour. This phenomenon, along with monsoon depressions arising from the Bay of Bengal, leads to extremely high flood peaks in rivers and generalized flooding. With an average of 579,732 people subjected to potential damage each year, Pakistan is ranked 9th out of 162 countries affected by flood.<sup>1</sup> Last year the province of Khyber Pakhtunkhwa received the highest recorded rainfall in the last 80 years, killing more than 1600 people and affecting more than 14 million people.<sup>2</sup> In the immediate aftermath, deployed aid and rescue teams combatted acute infectious diseases and the immediate after effects as best as they could. However, as the emergency situation stabilized and mental euphoria of surviving the flood began to wane, issues of post-traumatic stress disorder (PTSD), survivors' guilt and generalized depression were seen lurking in the background. In addition, the army predicted that rebuilding the infrastructure could take upto 6 months, during which those affected would remain displaced in relief camps across the country, creating not only a physical but also a cultural displacement from the conservative rural to liberal urban and peri-urban areas.

Mental health issues often take a back seat to the more immediate effects of natural disasters obviously because complications related to mental health do not usually become apparent until much later. As experience shows, both financial and physical relief efforts reach a peak a few weeks after natural disasters and gradually begin to decline in the chronic phase where much effort is still required.

Nevertheless, complications related to mental health following floods have been extensively described in various journals published internationally. In terms of long term morbidity, PTSD is arguably the most important of these. Over the past few years, there have been a number of publications that have focused on the prevalence of PTSD in regions affected by severe flooding.<sup>3-7</sup> In 1993, Tobin and Ollenburger found that up to 71% of the questioned adults, with no symptoms of anxiety prior to the event, described symptoms of PTSD 3 months after extensive flooding in the American Midwest.<sup>8</sup> More recently, Huang *et al.* carried out a survey amongst individuals affected by floods in China, 2 years after the event and found 9.2% of the subjects to be 'probable PTSD-positive'.<sup>9</sup>

The incidence of psychiatric symptoms has been shown to be directly linked with the dissatisfaction of help received during the floods.<sup>10</sup> Research has also shown that the risk of developing PTSD is dependent on age and gender. While analyzing mental health effects of floods in Bihar, Telles *et al.* found that, compared to younger individuals, prevalence of the condition was greater in survivors over 60 years.<sup>11</sup>

Furthermore, in a sample of over 400 individuals belonging to households in flood affected areas of UK, over 35% met the diagnostic criteria for depression.<sup>12</sup> This is in contrast to the overall 2.6% point prevalence of this condition in UK.<sup>13-15</sup> In addition, 24.5% of individuals in the study suffered from anxiety. Widespread prevalence of these two conditions, together with suicide rates higher than elsewhere, in areas affected by floods is easy to understand keeping in mind the devastation that accompanies. The latter was highlighted by an article in the New England Journal of Medicine which reported a significant increase of 13.8% in the incidence of suicide in regions of the United States affected by floods.<sup>16</sup>

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Young children are often amongst those at greatest risk of developing adverse psychological effects and behavioral problems following floods. In the aftermath of flooding in Bangladesh, it was found that the prevalence of incontinence amongst 2-9 year olds belonging to affected families had more than doubled. Similarly, the percentage of children showing aggressive behavior had increased from zero to nearly 10%. The data also showed that gender and the presence of disability were not important factors in the development of these conditions.<sup>13</sup> Similarly, in 2002, Russoniello *et al.* stated that 95% of children directly affected by flooding caused by Hurricane Floyd showed 'mild' signs of PTSD 6 months following the event.<sup>17</sup>

Addressing mental-health disorders, especially in children, women and the geriatric population, is important because someone who is mentally traumatized or depressed is less likely to take the considerable effort required for rehabilitation. Ensuring availability of psychological first aid by trained personnel at all health service delivery points and in the community is crucial to prevent ensuing mental health issues. Pakistani psychiatrists have launched a psychotrauma relief plan to regenerate hope, renew trust, promote social cohesion and lessen hopelessness and desperation in the flood affected people. Awareness campaigns have been conducted for community, media and the policy-makers regarding the need for psychosocial care during all phases of flood relief efforts. Notably, the Pakistan Association for Mental Health (PAMH) has served to organize various mental health activities in the suburbs of Karachi in coordination with other NGO medical teams. The activities include awareness raising, weekly medical and psychiatric outpatient clinics, provision of free medicines and training of lay volunteers in basic counselling skills.

Nevertheless, no central direction exists towards relief efforts, resulting in an asymmetrical distribution of resources and hence in both redundancies and inaccessibility. Despite great advances in medicine over the past few decades, psychiatric complications arising following natural disasters are still extremely common. These are particularly problematic for developing countries like Pakistan where resources are limited and infrastructure weak creating challenges for the diagnosis and treatment of these complications. In Pakistan, mental health has, for a long time, been an area of medicine that is often neglected. The fact that most of these psychiatrists are based in major cities such as Karachi and Lahore compounds the problem as the floods mostly affect rural areas.

With the current upsurge of potential psychiatric patients, the status of mental health care in low and middle income countries (LAMICs) like Pakistan is insufferable. Kohn *et al.* has estimated that nearly 78% of

adults with mental disorders remain untreated. This figure is estimated to be higher in children.<sup>14</sup> In Pakistan this can be attributed to limited amount of public resources (less than 1% of total health budget) committed to mental health, and the out of pocket financing system for mental health that exists in nearly 40% of LAMICs.<sup>15</sup> Adding to this, depression has been projected to rise in LAMICs and become the second leading cause of the overall burden of disease by 2020.<sup>18,19</sup>

It is imperative that these issues are addressed in order to prevent the aftermath of the humanitarian crisis currently being witnessed in much of the country developing into an epidemic of psychiatric illnesses.

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