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Distress among Flood Affected Students: Effects and Intervention

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Abstract

The present paper discusses the findings of a study conducted to examine effects of distress among flood students in Khyber Pakhtunkhwa province of Pakistan. The study used mixed method approach. Sample included 150 students whose homes were partially or completely destroyed by flood. The study used Child's Reaction to Traumatic Events Scale-Revised (CRTES-Revised) by Jones, Fletch, & Ribbe (2002) as instrument.

It was found that students felt a sense of uncertainty about their ability to continue future education. It was found that students' distress score was high on CRTES-Revised (mean score=64.5, standard deviation=13.1) for students of all the ages ranging from 11-18 years.

Students' distress score was also high for students living in various types of residence including own homes, tents, living with relatives, in rental houses, and in other places. Further focus group discussion revealed that family and peer-group structure of many students was changed. Attendance was especially as many students were involved

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in getting material supplies for their families and due eruption of communal diseases. The study recommended counseling therapy for flood affected students with some special arrangement for organizing co-curricular activities to reduce distress level of students.

Key words: Posttraumatic Stress Disorder; Flood effects, flood affects student, stress intervention strategy

Introduction



Sometimes a tragic event happens that touches every member of a community. People experience shock, fear, and anxiety. Children are affected by their parents' response to such events, and by what they see and hear. The closer children and youth are to the tragedy, the greater is its impact. It can also affect their emotional well being. This impact can be immediate or can come at a later stage (Government of South Australia, 2005, p.4).

Natural disasters result in economic loss, relocation, health problems, and mental health issues. Children comprise a significant percentage of the victims of such disasters and they are more vulnerable to its effects (Evans & Oehler-Stinnett, 2006, p.34).

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Recent Floods in Pakistan



Same is the case with recent floods in August 2010 in Pakistan, which are termed as the country's worst humanitarian disaster. About 14 million people were affected. People were left homeless as the floods destroyed their homes, villages and livelihood. Many were left without proper food, shelter and medical care. People have taken refuge in schools, on the highways and other high ground (Tausif, 2010).

The floods affected communities in Pakistan and especially in the province of Khyber Pakhtunkhwa. District Charsadda was one of the worst hit areas of the province. Waters reached heights of more than 10 feet that uprooted trees, and destroyed property, buildings and bridges. The floodwaters were contaminated with mud and gravel that was deposited in flood affected areas causing further problems.

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Problems after the Floods



Various problems after the floods included loss of life and property, damage to infrastructure, impact on livelihoods, feeling of uncertainty, variation in response and recovery efforts, inequities in relief aid, tents and temporary shelters, and long-term rehabilitation planning. The damage estimates were in billions of dollars. The floods resulting in many social, emotional, and educational problems also affected schools and students.

Many emotional reactions of affected people begin from problems of living caused by the disaster. Children's symptoms can differ depending upon the time passed after the disaster and the nature of the intervening events. The symptoms become less severe over time, but can be present for many months. Survivors respond to active interest

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and concern, and support systems are very important to recovery. “Disaster stress and grief reactions are normal responses to an abnormal situation” (Feinberg, n.d., pp.1- 3).



Mental Health of the Community

Floods have a major impact on the mental health of a community. The impact is related to the severity and loss, and is greater in lower socio-economic and minority religious sub-groups (Assanangkornchai, Tangboonngam, & Edwards, 2004). After a disaster, the psychological well-being of children suffer when they observe scenes of destruction, experience a life threatening event, there is damage to their home and community, and they are separated from their family members (Picou & Marshall, 2007, p.770).

The impact of floods is recognized as complex and many-sided. Economic impacts are featured more prominently than social impacts. There is a growing awareness that social impacts are under-

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represented in post-flood assessment (Werritty, Houston, Ball, Tavendale & Black, 2007, p.1). Help and support from community and school can moderate the effects of such stress.



Relevance of Schools

Schools can support and help students during and after a crisis. These can effectively serve as the place where students can go for help. School staff can provide them with support, counseling, and other services during and after a crisis. Schools can also reach out to parents and to the community after a crisis.

School-based intervention is an effective, logical, and practical way to help the affected people. It is more effective when such efforts are coordinated and supported with outside agencies and resources, as affected people will receive a warm, personal, supportive, and effective response. It can meet the needs of students, parents, and staff during and after a crisis. It strengthens the idea that, in a community, Language in India www.languageinindia.com

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schools should be a focal point for the development of young people (Schonfeld & Newgass, 2003, pp.1-2).

Schools should understand natural disaster effects, for example economic loss, relocation and physical and mental health issues. While most children are able to cope, a significant number of students develop severe symptoms and Post Traumatic Stress Disorder (Evans & Oehler-Stinnett, 2006).

It is important to create a learning environment in schools that is responsive to the needs of flood-affected students. Students spend a significant portion of each day in schools and schools are second only to home. Schools are, therefore, important in the recovery process for such students.

The Present Study

The present study provides preliminary information about issues and problems of flood-affected students. It assesses the impacts of recent floods on elementary and secondary school students. The researchers were directly engaged with students affected by floods. The findings of the study will help to flood related problems in the affected areas and might be applicable to similar situations.

Many studies are conducted on natural disasters and their impact on schools, students, communities, and the general population.

Effects of Natural Disasters

Burke & Moccia, et al. (1986) studied the emotional distress in fifth-grade children ten months after a flood disaster. 19 5th-grade children wrote stories about the coming winter. Stories were also written by 28 5th grade children from a nearby but non-flooded town. These were assessed for signs of distress, including fear, depression, and anxiety.

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Children from the flooded area demonstrated more distress than those from the non-flooded area. Only girls showed this effect; for boys, there was no difference between flooded and non-flooded groups. The results suggested that distress could persist as long as 10 months after a natural disaster.

Canino, Bravo, Rubio-Stipec & Woodbury (1990) studied the 1985 Puerto Rico floods on mental health symptoms and diagnoses. They measured the extent to which this effect was influenced by either demographic characteristics or previous symptoms. Depression, generalized anxiety, and PTSD were significantly more common among those exposed to a disaster. The increase in stress-related disorders in the exposed sample indicated that disaster stress increased the mental morbidity of the population.

Similarly, Lima, Pai, Santacruz & Lozano (1991) evaluated 102 adult victims of low socioeconomic status living in tent camps 8 months after the Armero disaster in Colombia to ascertain the level of psychiatric morbidity. The screening instrument identified 91% of the subjects as emotionally distressed and they met DSM-III criteria for a psychiatric disorder. The most frequent diagnoses were PTSD and major depression.

Study of Children's Behavior

On the other hand, Durkin & Khan, et al. (1993) studied the effects of a natural disaster on children behavior. They examined 162 children (aged 2-9 years) both before and after a flood disaster to establish whether stressful events played a causal role in the development of behavioral disorders in children. Subjects were reevaluated five months after the flood disaster. They found that the prevalence of aggressive behavior and enuresis in children rose sharply after the disaster.

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Jeney-Gammon & Daugherty, et al. (1993) examined the relationship between children's coping styles and self-reported levels of depressive symptoms after a hurricane. 257 3rd to 5th grade children participated in the study, five months after the disaster. The Children's Depression Inventory and Kidcope (a checklist to assess children's coping styles) were used for the study. Social withdrawal, self-blaming, and emotional regulation were found to be associated with more severe depressive symptoms.

Also Bahrlick & Parker, et al. (1998) studied the effects of stress on children's long-term memory following a major hurricane. Stress was objectively defined as low, moderate, or high according to the severity of damage to the child's home. One hundred 3 and 4-year-old children received a structured interview 2-6 months after the hurricane. Older children recalled and elaborated more than younger children. Prompted recall was greater than spontaneous recall. These findings could be applied to the effects of stress on the amount recalled by children giving retrospective accounts of temporally extended, naturalistic events.

Trauma in Adolescence

Bolton & O'Ryan, et al. (2000) examined the long-term course of general psychopathology following trauma in adolescence. Sample consisted of 216 people (11-17 years olds) who survived the sinking of the ship "Jupiter" in Greek waters. The survivors showed increased rates of diagnosis in a range of anxiety and affective disorders during the follow-up period. The highest rates were among the survivors who had developed Post-Traumatic Stress Disorder (PTSD), Onset of anxiety and affective disorders varied between the survivor and control groups had decreased by the time of follow-up but were still obvious.

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Jones, Frary, Cunningham, Weddle & Kaiser (2001, p.103) examined the predictive utility of several hypothesized mediators of children's reactions to disaster. They found higher levels of intrusive symptomatology for girls and for elementary school students as compared with their middle school counterparts.



Rothe, Lewis, Castillo-Matos, Martinez, Busquets & Martinez (2002) studied Posttraumatic stress disorder among Cuban children and adolescents after release from a refugee camp. Majority of the children reported moderate to severe PTSD symptoms. 86% of the children reported that the refugee experience had severely affected most of their peers. A significant dose-effect relationship was found between the number of stressors and the severity of self-reported PTSD symptoms. A modest relationship was found between withdrawn behavior and children's feelings that they would die at sea and witnessing violence at the camps. Age and witnessing violence in the camps were moderately associated with PTSD.

Mental Health Problem

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Assanangkornchai, Tangboonngam & Edwards (2004) found that 40% respondents had a mental health problem. These were significantly associated with respondents' perception of the severity of loss, the ability to collect possessions, and showing a negative response to the flood. High Impact Event Scale scores were found to be associated with the severity of loss, lower socio-economic status and minority religion.

Norris, Murphy, Baker & Perilla (2004) studied PTSD over four waves of a panel study of Mexico's 1999 flood. Samples of adults were interviewed 6, 12, 18, and 24 months after the floods and mudslides. PTSD was prevalent in areas where mass casualties and displacement had occurred. Both linear and quadratic effects of time emerged, as PTSD symptoms initially declined but then stabilized. Differences between cities decreased as time passed. There was substantial Co morbidity between PTSD and Major Depressive Disorder.

Otto, Boos, Dalbert, Schoöps, & Hoyer (2005) investigated the influence of the belief in a just world (BJW) on important dimensions of mental health and psychopathology (e.g., depression). It was hypothesized that belief in just world was able to buffer psychopathological symptoms after a natural disaster. Regression analyses showed that personal but not general BJW was negatively associated with anxiety, depression and general psychological distress. BJW did not reveal an association with posttraumatic symptomatology. The results supported the assertion that Belief in just world buffers mental health.

Social Support: Mobilization and Deterioration

Norris, Baker, Murphy & Kaniasty (2005) examined the social support mobilization and deterioration after Mexico's 1999 flood. 561
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randomly selected adults were interviewed. They found that Perceived social support and social embeddedness were lower than normal. Displaced women were likely to experience deterioration in social functioning. Gender disparities in social support increased as time passed.

Picou & Marshall (2007, pp.777-8) studied the impact of hurricane Katrina and suggested that a significant proportion of the displaced students continued to suffer from stress, depression, anxiety, and uncertainty about their future. It resulted in poor academic performance, discipline problems, and irregular school attendance. These negative social, psychological, Social and educational impacts might continue for some students well into the future.

Werritty, Houston, Ball, Tavendale & Black (2007) found with respect to floods in Scotland that intangible impacts of floods (non-material and/or emotional losses) registered markedly higher values than tangible impacts (material loss), and immediate impacts were generally higher than lasting impacts. Intangible immediate impacts included the stress of the flood, the anxiety of being out of one's home, the discomfort of living in temporary accommodation and the time and effort in dealing with insurers and builders to return home as soon as possible. Intangible lasting impacts (focusing on the time and effort to return to normal life) were more sustained. These included fear of future flooding, strains within the family and loss of sentimental/irreplaceable items.

Tsunami Effect

Math, Tandon, Girimaji, Benegal, Kumar, Hamza, Jangam, & Nagaraja (2007) while studying the psychological impact of tsunami on children and adolescents from the Andaman and Nicobar islands found that the most common psychiatric morbidities among the primary and secondary survivors were adjustment disorders,

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depression, panic disorder, posttraumatic stress disorder, Schizophrenia, and other disorders.

Raj & Subramony (2008) studied the effect of 2004 tsunami on the residents of the coastal town of Nagapattinam, India. The study was conducted on 134 adolescents (mean age, 16) one month after the disaster. The affected group of adolescents (who experienced loss of life of family member(s), and/or destruction of house) with a group of unaffected adolescents (living 12 km from the affected area and had no loss of life of family member(s), and/or destruction of house). The groups differed significantly on perceived stress while differences were not significant for avoidance, intrusion, hyper arousal symptoms of PTSD. While gender differences were significant for perceived stress, intrusion, hyper arousal, and impact of events were noticed.

Impact on Adults

Further, Mason, Andrews & Upton (2010) examined the psychological symptoms associated with the aftermath of the flood amongst adults living in the affected communities in the UK. They found that 27.9% participants met criteria for symptoms associated with PTSD, 24.5% for anxiety and 35.1% for depression.

Females had higher mean scores on PTSD, anxiety and depression as compared to males. Vacating homes after flood, previous experience of flooding and poor health were associated with greater psychological distress. Although it was not possible to determine if the symptoms were a direct consequence of the flood, symptoms of distress were significant issues amongst affected communities affected deserving attention to prevent chronic distress.

The British Red Cross (2010, p.16), while studying the impact of recent flooding in Greater Belfast, found that the emotional and practical consequences could be devastating and that support needs
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could be immense. Social impact included lack of confidence in response agencies. Older people were hesitant to leave homes. There was strong community resilience where neighbors helped each other in floods and in family separation. Physical and psychological impact included increased anxiety and fear, loss of weight, lack of appetite, disturbed sleep, fatigue and depression etc.

Objectives of the Study

The objective of the study was to examine post effects of the flood among elementary and secondary school students. The study particularly investigated the distress level of the affected students.

Methodology

The study was descriptive in nature. The study was delimited to the schools of Khyber Pakhtunkhwa province of Pakistan that were badly affected by the flood.

Participants of the Study

The sample of the study comprised of 150 students. These students were directly affected by floods as their homes were completely destroyed or damaged. Their age ranged from 11 to 18 years (Mean=14.9, SD=2.1). Average number of family members of these students was 9 with standard deviation of 3.7.

Instrumentation

The Child's Reaction to Traumatic Events Scale-Revised (CRTES-Revised) by Jones, Fletcher & Ribbe (2002) was used for the purpose of study. The scale is a revision of the Horowitz Impact of Events Scale (Horowitz, Wilner & Alvaraz, 1979) and is used to quantify psychological responses to stressful life events. It is developed on a 4
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point rating scale i.e. not at all (0), rarely (1), sometimes (3), and often (5); and consists of 23 items. For CRTES a low distress total score is 0-14, moderate distress score is 15-27, and high distress score is 28 and higher. A score of 28 or higher is suggested for diagnosis of Post Traumatic Stress Disorder (PTSD).

The scale was translated in the national language, Urdu, to make it understandable to students. Questions regarding general information about students were also asked. In the end of the scale an open-ended question was added to get further information about any other problems faced by students.

Two focus groups discussions were held with the school principal and 12 teachers. The discussions were of 40 minutes. In each of the discussions the school principal and six teachers participated. The discussions were led by the researcher. The participants belonged to the same school, so they felt comfortable speaking in the group. Focus group discussions provided a means to explicate detailed and in depth information about flood affected students.

These discussions focused on the teachers' perceptions of issues and problems related to flood affected students. It helped reveal the impact of floods on students more clearly. Participants were given the opportunity to directly involve in the research process through their own words and experiences. Participants were informed that they could leave at any time, and were told about the research purposes. A discussion guide was used and the discussions were recorded for transcription and analysis.

Focus group discussion questions included opinion questions (What is your opinion about effects of the flood on students? What do you think about the school environment after flood? What is the most serious problem for the students?); Questions surrounding their experience with the flood affected students (Did you see any change

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in the attendance of the students after flood? Did you see any effect of floods on students, school environment and discipline?); Questions regarding students attendance (What is the present situation of drop out students and what trend do you see in the future? and questions for improvement (As a teacher/principal, what betterment you can bring in the present situation? What other measures can be taken to address the situation?)

A pilot test was held with 25 students to refine statements on the scale.

The pilot test provided feedback on the understandability of translated items. The statements were reviewed for improvement on the basis of the pilot test. The scale was personally administered in groups. It was administered in the second week of October; 75 days after the floods. Out of the 150 copies distributed 149 were returned and analyzed for the study. The return rate was 99%. Data were analyzed using features in Microsoft Excel 2002 and SPSS 13.0 for windows.

Data Analysis

Percentages might not add up to 100 because of rounding off. All quoted statements came from the group participants and were translation of their own views and feelings. Data analysis is presented in below tables.

Table 1: information about flood damages

Statement	Option	Frequency	Percentage
Home damage due to floods	Completely destroyed	77	52%
	Partially damaged	72	48%
Damage to school bag, books, &	Completely destroyed	89	60%

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stationary items	Partially damaged	37	25%
	No damage	23	15%
Threat to life during floods	Yes	76	51%
	To some extent	32	21%
	No	41	28%
Pocket money after floods	Increased	1	1%
	Unchanged	14	9%
	Reduced	135	90%
Ability to continue Future education after floods	Yes	110	73%
	Not sure	13	9%
	No	27	18%

Data in Table 1 presented that homes of 52% respondents were completely destroyed by floods while homes of 48% respondents were partially damaged. Similarly 60% respondents reported that their school bags, books, & stationary items were completely destroyed; 25% reported them to be partially damaged, while 15% reported no damage to their school bags, books, & stationary items. Similarly 51% respondents considered that their life was in danger during floods, while 28% respondents did not feel such danger. 90% respondents reported that their pocket money was reduced after floods. Although 73% respondents were optimistic about their ability to continue future education, 9% were not sure and 18% considered that they might not be able to continue future education.

Table 2: Age wise students distress score on CRTES-Revised

Age	N	Mean score	SD
18 years	19	65.0	13.6
17 years	27	64.4	12.1
16 years	20	63.6	13.3
15years	20	66.7	14.0
14years	20	61.4	18.2
13 years	21	66.1	12.3

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12 years	16	62.9	8.1
11 years	07	69	8.2
Total	150	64.5	13.1

Data in table 2 showed age wise distress score of respondents on CRTES-Revised. It showed that respondents distress score was high on the scale (Mean Score=64.5, Standard Deviation=13.1). The trend was prevalent in respondents of all the ages ranging from 11-18 years.

Table 3: Students' residence and distress score on CRTES-Revised

Present residence	N	Percentage	Mean score	SD
Own home	63	42%	63.8	13.1
Living in tents	47	32%	63.8	13.2
With relatives	25	17%	65.6	13.5
Rental house	11	7%	65.6	13.3
Other places	3	2%	77.3	14.2

Data in table 3 presented students' residence and their distress score on CRTES-Revised. It showed that 42% of respondents were living in own home, 32% were living in tents, 17% were living with relatives, 7% in rental houses, and 2% in other places. It showed that respondents distress score was high for all types of residence. The distress score for respondents living with relatives and rental houses was slightly higher than for those living in own residence or in tents. While the distress scores for respondents living in other places was the highest with a mean score of 77.3 and standard deviation of 14.2.

Table 4: Further problems experienced by students

Problems identified by students	Frequency	Percentage
School uniform and stationary	32	21%
Health related problems, (Malaria, typhoid, itching, mal digestion)	21	14%
Our land and crops are damaged, hard to Language in India www.languageinindia.com	19	13%

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feed animals		
we have no money for every day expenses and for education	17	11%
Floods have damaged our bicycles, we have to come to school on foot	15	10%
Our diet is not balanced	15	10%
We have to reconstruct our home on the earliest, as the winter will set in soon.	12	8%
Tents cannot keep us warm in winter		
I cannot complete home work because we have lost our home	10	7%
Parents are asking us to quit school and work to get some money	5	3%
We have to work to earn a living; can't concentrate on education any more	4	3%
Life is not the same as before	3	2%

Entries in table 4 presented further problems experienced by students. Most prevalent problems reported by students was school uniform and stationary (21%), health related problems (14%), damage to land and crops (13%), lack of money for every day expenses (11%), damage to bicycles and as a result walking long distances on foot (10%), imbalanced diet (10%), reconstructing homes before start of winter (8%), inability to complete home work due to loss of home (7%), parental pressure to quit education (3%), work to support family (3%). 2% students stated that life was not the same for them any more.

Results

It was found that more than half of the respondents considered that their life was in danger during floods. 85% of such students had completely or partially lost their school bags, books and uniforms; causing problems in school work. 27% students felt a sense of

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uncertainty about their ability to continue future education. Pocket money of 90% respondents was reduced after floods. Although most of the students were optimistic about their ability to continue future education, 9% were not sure about it, and 18% considered that they might not be able to continue future education.

Students' distress score was found high on CRTES-Revised (mean score=65.0, standard deviation=13.1) for students of all the ages ranging from 11-18 years. Students' distress score was also high for students living in all types of residence including tents, living with relatives, in rental houses, and in other places. The distress score for respondents living with relatives and rental houses was found to be slightly higher than for those living in own residence or in tents. It was found that the distress score for respondents living in other places was the highest with a mean score of 77.3 and standard deviation of 14.2.

Focus Group Discussion

There were several overall perceptions that continued to be mentioned during focus group discussion. These related to concern for the flood affected students. A significant challenge was to provide students with facilities and resources for learning.

“Students absenteeism is a big problem”, remarked a participant. Classroom attendance was irregular for students displaced by floods. Many students are involved in home rebuilding/repair with their parents, which also was a cause of students absenteeism. Attendance was especially low on the days when aid is distributed among the affected people. It is because many students are involved in getting material supplies for their families. Another reason for students' absenteeism was “increase in flood related diseases like malaria and typhoid”.

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School discipline was also affected. Students faced problems of uniforms, note books, and stationary. It negatively affected their academic performance and participation in other school activities. It was found that 23 students had dropped out of school after floods. Many of them were flood affected students. Some had taken School leaving certificates as they had shifted to other localities.

Participants were of the opinion that the family and peer-group structure of flood affected students was changed as they had to move to other types of residence or areas. “Students major problem is accommodation”. Many students had unstable housing that resulted in attendance problems and was negatively affecting their academic performance. Family relationships were also affected due to living in such environment. Teachers were of the opinion that the environment in which students resided was not conducive to learning. Students had problems in completing homework and in participating in co-curricular activities of the school. It made it difficult for teachers to cover course work in time.

Focus group discussions revealed that many of the flood affected students could not concentrate on school work and appeared depressed. “Students are distressed and dissatisfied, and cannot concentrate on studies”. Another participant added, “School requires them to work, while parents involve them in home reconstruction/repair”. “Parents cannot give much attention to students’ educational needs”. “Every one is in the race to get something from somewhere”. Still no delinquent behavior was reported. Students generally talked about floods, getting aid, and involvement in home repair etc.

Students faced social, economic, health, psychological and educational problems. Overall the floods affected students’ classroom behavior, attendance, and academic performances. Participants believed that community and parent involvement could help solve

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some of the problems of such students. The solution lied in teachers' commitment, allocation of resources, and community involvement. For instance, one participant remarked, "What is needed is share of work; teachers have to work collectively to solve school related problems?" It was concluded that the health, social, educational consequences of floods were overwhelming and that support was needed for flood-affected students. Participants regarded the flood and its aftermath as quite traumatic.

Teachers should make personal efforts to focus on the psychological, social, and educational needs of flood affected students. There is need to provide encouragement for academic success, and to create a conducive school environment for them. Teachers stated that focusing on co curricular activities could contribute in reducing distress level of students.

Discussion

Keeping in view the limited amount of information on the impacts of floods on students, the findings are presented as a preliminary assessment of problems and issues of secondary school students in the aftermath of the worst floods in the history of Pakistan. The effects of floods on students are difficult to measure for a number of reasons. The effects are slower to unfold because of the structure of education system. As statistical indicators for the education sector are generally monitored annually; long term effects of floods will start to surface in the academic year 2010–11. Therefore, these effects would be assessed fully after one or two years. There is a need to look at the context in which of floods keeping in view the role of family, friends, and the environment.

Cooperation between the local authorities and the affected population plays a key role in flood hazard. Effective management of floods requires approaches that incorporate an integrated view of policies,

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plans, strategies, and other social and institutional measures (Dewi, 2007).

The effects of the flood on students are wide-ranging and complex. Detailed study is needed to understand long-term social and psychological impacts of floods on families, students, and teachers. There is need to collect systematic data on the educational impacts of these floods from students, families, teachers, administrators, and other stake holders.

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