ONE-YEAR LONGITUDINAL STUDY OF SNOW STORM DISASTER SURVIVORS IN KASHMIR

Mushtaq A. Margoob MD, Akash Yousef Khan MBBS, Muhammad Musadis Firdosi MBBS, Sheikh Ajaz Ahmad MBBS, Tasneem Shaukat MBBS

Disasters can be seen as a nature’s instrument to test people: the survivors for their resilience and coping; the authorities for their preparedness and fleetness of action and the unaffected for their empathy. A natural disaster (snowstorm) struck and destroyed ‘Waltengo Nard’ a small hilly village in South Kashmir, on 19 Feb 2005, wiping out 24.77% of its population. While delivering services to the surviving, a controlled longitudinal cohort study was conducted collaterally, to assess the psychological consequences of the disaster. A matched control was selected for comparison. GHQ-12 was used to screen subjects in both study and control groups, using a cutoff score of 6/7. 57.67% of study group scored positive on GHQ, as compared to 27.02% of control group. Further evaluation using DSM-IV based MINI neuropsychiatric interview showed a Psychiatric disorder in 34.39% of study population, compared to 14.05% in control group at the end of 1 year follow-up. PTSD formed the predominant diagnosis in the study group (18.5%) compared to control group (1.08%), followed by MDD (14.28% vs. 9.27%). Against the expected course there was no significant remission in psychiatric morbidity with time due to a number of factors, not the least important of which were the continued abandonment, poor social rehabilitation of the population and breakdown of existing social support system. (JK-Practitioner2006;13(Suppl.1);S29-S38

Key words: Natural disaster, psychosocial distress, morbidity, PTSD, intervention.

Introduction

a) Description:
A natural disaster took over a small mountainous village in South Kashmir on 19th Feb. 2005, about a month after the devastating Indian Ocean Tsunami. Unprecedented during recent years, heavy snowfall for five consecutive days completely cut off Kashmir from the rest of world and all means of communication and transport were totally disrupted, with life coming to a freezing stand still. A small picturesque village “Waltengo Nard” at the foothills of Pir Panchal range of Himalayas about 90km from Srinagar, the summer capital of Kashmir, was struck by a snowstorm at about 12 in the noon. All the children, women and elders were indoors while healthy men were engaged outside clearing 10-12 feet high snow around their single or double room mud houses (Kothas), and a few double storeyed tin roofed houses. Suddenly with a deafening noise a dreadful snowstorm struck the area, burying everything, including uprooted trees, damaged houses, dead, injured and other survivors under a cover of 20 to 30 feet snow. The whole event went unnoticed for more than two days, though the neighboring natives living in the plains were alarmed by the observation that against an age-old routine, no person from Waltengo Nard village had visited the locality after the snowfall. On the next day with great hardships, a couple managed to reach the people in adjacent plain area and told them about the disaster. Thereafter, rescue work was initiated, initially by the neighboring villagers, and was joined by government and non-government organizations from third day onwards. 24.77% (n=164) population had perished. Since dead bodies could not be moved out to graveyard, 5-10 bodies had to be buried together in mass graves in the same houses where some of the injured and surviving people were still trapped. The survivors were shifted to a tented colony created in the vicinity.

Over the past one year we have been regularly visiting the population and assessing their needs and post disaster psychological sequelae and providing all possible services as and when needed, to the best of our capabilities. A total absence of any kind of mental health care facility in the community in Kashmir made us to undertake this exercise, to satisfy our desire to provide continued services to the affected population. This experience also gave us a unique opportunity to assess psychosocial issues in disaster management as well as a chance to provide community consultation at the doorstep of each affected family. In the face of gigantic needs and demands, whatever little our humble effort might have contributed to ameliorate the distress of the suffering community, this self started innovative community outreach activity has been a real soul satisfying clinical experience and is worth sharing with the fraternity, more so in view of other devastating natural disasters of the year 2005 in the region, with which it closely shares most of its characteristics. The snowstorm was named “Snow Tsunami” by the Air Chief of India and the other rescue agencies, although it could also with equal vehemence be described as a “Pilot Project” of the destruction unleashed by the earth quake of 8th October, 2005 which struck a similar population equidistant, to the north as against the snow storm site towards the south, from Srinagar.

The present observations are based on our self sponsored longitudinal first year post disaster service-cum-survey records of the mental health aspect of the entire surviving population of Waltengo.

b) Definition:
More than 40 different definitions of disaster exist in literature. The definition of disaster as severe disruption, ecological and psycho-social, which exceeds the coping...
capacity of the affected community, given by WHO is the most widely used one. Much of the confusion in defining a disaster is due to the varied interests of the specialities dealing with the event, be it in medicine, sociology, political science or ecology. Catastrophic events being more frequent in the developing world often raise the threshold for an event to be considered a disaster. At the same time, unfortunately, there is limited research data on the psychosocial consequences of disasters from this region.

During the past two decades there has been considerable research on mental health aspects of disasters, in terms of service delivery, training of professionals and some systematic research in India, but to the best of our knowledge no controlled longitudinal epidemiological study of the entire disaster hit population has so far been reported from the South Asian region. The present study is an attempt to fill the gap in our understanding of the subject so as to develop appropriate means and skills for better disaster management in the region, especially for the economically disadvantaged and underprivileged communities, which constitutes the universe of this study.

Most of the subjects studied had lost their entire belongings including the livestock and other property items. In some instances, a single orphan or a widow or an elderly person was the only survivor of the family. In the first weeks following the disaster the first author constituted a team under his leadership comprising mostly of the trainee psychiatrists and medical student volunteers, with the objective of providing psychosocial support and mental health services to the survivors. During the initial two visits in the first month after the disaster a pervasive indifference towards mental health needs by the Government, as well as of NGO relief service agencies working there was observed. Even, a statement was issued by a senior health services official, that except one case of mental disorder (a chronic schizophrenic), there were no psychiatric problems among the survivors. But, we knew that our presence would be of immense importance for future intervention. The initial three visits during the first six weeks although mainly utilized to create a working relationship with the local health providers and community leaders but spending some time with the bereaved families, listening to what they wanted to say without digging into their nightmarish experience, helped us a lot subsequently in establishing an effective therapeutic alliance and a positive cognitive restructuring.

Methodology

Study Design:

In this cohort design study, the study group comprised of the whole surviving population of the disaster affected area (exposed) at the Waltengo Nard, Qazigund. The control group included the population of snow storm unaffected area (unexposed) about 30km away from the disaster site at 'Shalnard' Sagam, Kokernag, with identical...
CASE 2

S, a 10yr old boy with a normal developmental history, student of 3rd standard with complaints of outbursts of anger associated with a disorganized behavior and aloofness was examined outside his tented shelter. The child did not communicate freely at the beginning, but within 15-20 minutes a good therapeutic rapport was established and he started giving details about his distress. The other source to collaborate the narration was his mother: “As it was a cold winter day with 7-10 feet of snow already having accumulated outside, the boy was playing with his sister inside their mud house, ‘Kotha’, when with a big bang the whole structure collapsed and both got trapped inside with his sisters’ body falling under rubble in the opposite direction. He was frightened, and unsuccessfully kept on struggling to reach his sister who was crying and repeatedly asking for water. Though he did succeed in pushing some snow with his feet towards his right hand and threw it towards his sister’s mouth but she was already dead. The boy was lying near her dead body for two days, when he was finally rescued. Since then he had been getting recurrent nightmares, whose intensity and frequency had increased with every passing day. He felt as if something similar to the disaster was impending. He found it very difficult, rather impossible to divert his attention and thoughts away from the traumatic images and memories. The child had developed loss of interest in all activities including studies and would not like to see or play with other children; “I am waiting for my sister to come and will play only once she returns back”. He had decreased appetite and had to be coaxed to take meals. There was a loss of sleep and repeated outbursts of anger accompanied by disorganized behavior. He was not able to concentrate on his studies and said “whenever I sit in the class and look up to the mountains surrounding my village, I can see my sister coming and calling me, her cries asking for water and my failed attempts (a stream of tears running down his cheeks), all this comes before my eyes as a real scene”. After discussing with the first author a diagnosis of PTSD was made. Since the child failed to respond to psychological interventions we shifted to pharmacotherapeutic intervention and he was put on 7.5mg of Mirtazapine bedtime for first week and 15mg after that. The child was on 6-8 weekly follow-ups and was in complete remission for 6 months, when the symptoms returned suddenly, following the Killer Kashmir earthquake of Oct 2005. The child had a relapse of all the previous symptoms of re-experiencing, hyper arousal, and avoidance clusters, with a marked distress. Although no physical damage by earthquake was reported anywhere in South Kashmir (the site of snowstorm), but the child said “He could see mountains moving and thought that all of them would be buried under debris”. With a combination of psychotherapy including reassurance, education to the child and his parents, some cognitive restructuring and pharmacotherapy the child again improved, but worsened with the first snowfall, as against all promises and plans by all concerned, they continued to live and shiver in open tents under the cover of snow. It was finally only after the child along with his parents moved to a permanent residential area that the psychosocial interventions and community consultations yielded the dividends, and the child is much better, studying and progressing well now.

topographical and socio-cultural background as the study group.

In entire international literature on disaster epidemiological studies, there are only a few studies of true cohort design available so far9. The present study is first of its kind from this region, which in a truly cohort study design investigates mental health morbidity in the entire surviving population affected by a natural disaster in a community setting with an experimental design. Stringent criteria were adopted for selection of control group from a geographical area of comparable socio-economic background that had never experienced a snowstorm. In the analysis for matching the study group and control group some minor inter-group differences in per capita income, education and employment were observed. By using appropriate assessment tools the mental health morbidity was studied not only in terms of prevalence and pattern of diagnosable psychiatric disorders but also that of psychological ill health and distress. Besides other instruments and diagnostic tools, we used GHQ, which has been used as a screening instrument in disaster epidemiology internationally5, as well as in India7. We used 6/7 cut off score for GHQ, which has been documented as valid cutoff for the Indian population.

Sample

All the surviving individuals of each household were enrolled as the study subjects, after the tentments/households were enumerated with the help of key persons at the relocated site. Similarly in the control population, households where included randomly and their inmates enrolled as study subjects. All the persons above age of 8 years were included in the study. Those who refused to consent or could not be contacted were excluded.

Sample Size

All the tentments/households were included in the study, which numbered 72, with a total surviving population of 498 out of which only 378 subjects were included finally after applying exclusion criteria. In the control group, 33 households were included with the population of 231 individuals, out of which 185 were finally selected as study subjects.

Method

After proper consent, the subjects were briefed about the interview by the psychiatrists. This followed the initial interaction period of more than 3 visits with the whole community, when the lead author informed them about the study. A semi-structured interview schedule specifically prepared for the study was used to collect information on the socio-demographic variables in both groups and the extent of exposure to snow storm disaster in the study group.

General Health Questionaire-12 short version (GHQ-12) was used for screening of subjects. All the subjects having scores of seven and above were investigated further to find out the pattern and extent of psychiatric morbidity. MINI screening instrument with high validity and reliability scores for DSM-IV based diagnostic categories were used to assess psychiatric morbidity in subjects who were screened positive on GHQ-12. MINI-Plus Neuro-psychiatric interview was used to assess adults while as MINI-Kid was used for children. The interviews were carried out by a trainee/trained psychiatrist.
Fieldwork Procedure

Informed Consent
After an appraisal of the purpose of study to the key persons, their help and cooperation was taken for contacting the families. Informed consent was obtained from the head of each household and further from each subject included in the study.

In addition to routine visits to the study population, selected subjects were screened at regular intervals of 6-8 weeks with the above tools to update clinical information obtained earlier and also to diagnose any fresh psychiatric disorder patient. The interviews were carried out at three months, six months, nine months and twelve months post disaster.

Data Analysis
Prevalence of psychiatric disorders and patterns of GHQ score in both the groups were computed by using descriptive statistics and statistical test for the two proportions was used to obtain P-value.

Results
All the subjects in both the groups could be contacted as their mobility was almost confined to their houses/tentments or at the most to the surrounding locality. They could easily be contacted on any visit. Out of 378 subjects in the study group, most of the men were illiterate, unskilled, Muslim adults, with labour, livestock breeding and minor agricultural activities like cropping corn as their main occupation. Females were mostly engaged in household activities besides helping the male in cattle grazing and agricultural activities. The only two educated males, one a graduate and the other a matriculate were serving as government teachers in the local school. Majority of the children were attending a school established in a tent in the locality.

The control group had almost similar socio-demographic profile as the study group except for a slight better literacy and economic status.

57.67% (n=218) subjects in the study group and 27.02% (n=50) in control group had positive GHQ-12 scores. Though all of them did not fulfill criteria for major psychiatric disorders, the high scores did point towards high prevalence of psychological distress, with symptoms like loss of concentration, sleep, appetite, irritability, loss control, depressive feelings etc. being very common.

a) Populations Characteristics

<table>
<thead>
<tr>
<th>No. of deaths</th>
<th>Survivors</th>
<th>Total Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>A) Study group</td>
<td></td>
<td></td>
</tr>
<tr>
<td>164 (24.77%)</td>
<td>498 (75.23%)</td>
<td>662</td>
</tr>
<tr>
<td>Male</td>
<td>41 (6.19%)</td>
<td>165 (33.13%)</td>
</tr>
<tr>
<td>Female</td>
<td>71 (10.72%)</td>
<td>143 (28.71%)</td>
</tr>
<tr>
<td>Children</td>
<td>52 (7.85%)</td>
<td>190 (38.15%)</td>
</tr>
<tr>
<td>B) Control group</td>
<td></td>
<td></td>
</tr>
<tr>
<td>231</td>
<td>82 (35.49%)</td>
<td>82</td>
</tr>
<tr>
<td>Male</td>
<td>68 (29.43%)</td>
<td>68</td>
</tr>
<tr>
<td>Female</td>
<td>81 (35.06%)</td>
<td>81</td>
</tr>
</tbody>
</table>

b) Sample Characteristics

<table>
<thead>
<tr>
<th>Total No. of sampling units(households)</th>
<th>Study group</th>
<th>Control group</th>
</tr>
</thead>
<tbody>
<tr>
<td>72</td>
<td></td>
<td>33</td>
</tr>
<tr>
<td>No. of individuals</td>
<td>498</td>
<td>231</td>
</tr>
<tr>
<td>Total No. of individuals who could be included in the study (GHQ-12 administered)</td>
<td>378</td>
<td>185</td>
</tr>
<tr>
<td>No. of subjects who couldn't be included*</td>
<td>120</td>
<td>46</td>
</tr>
<tr>
<td>No. of subjects screened +ve on GHQ-12</td>
<td>218 (57.65%)</td>
<td>50 (27.02%)</td>
</tr>
</tbody>
</table>

*i) subjects below 8 yrs ,  ii) Could not be contacted,  iii) Did not consent
c) GHQ Score

Table 3: GHQ scores of study group and control group

<table>
<thead>
<tr>
<th>GHQ score</th>
<th>Study group (n=378)</th>
<th>Control group (n=185)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive</td>
<td>218 (57.67%)</td>
<td>50 (27.02%)</td>
</tr>
<tr>
<td>Negative</td>
<td>160 (42.33%)</td>
<td>135 (72.97%)</td>
</tr>
<tr>
<td>Total</td>
<td>378</td>
<td>185</td>
</tr>
</tbody>
</table>

P=0.000

d) Mental Health Morbidity

Table 4a: Psychiatric morbidity in study and control group at 1-year post disaster

<table>
<thead>
<tr>
<th>Psychiatric disorder</th>
<th>Study group (n=378)</th>
<th>Control group (n=185)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Present</td>
<td>130 (n=34.39%)</td>
<td>26 (14.05%)</td>
</tr>
<tr>
<td>Absent</td>
<td>247 (65.60%)</td>
<td>156 (85.95%)</td>
</tr>
<tr>
<td>Total</td>
<td>378</td>
<td>185</td>
</tr>
</tbody>
</table>

P=0.000

e) Pattern of Psychiatric Disorder.

Table 4b: Pattern of psychiatric disorders in study sample at 1 year

<table>
<thead>
<tr>
<th></th>
<th>Study group (N=378)</th>
<th>Control group (n=185)</th>
</tr>
</thead>
<tbody>
<tr>
<td>MDD</td>
<td>54 (14.28%)</td>
<td>18 (9.72%)</td>
</tr>
<tr>
<td>PTSD</td>
<td>70 (18.51%)</td>
<td>02 (1.08%)</td>
</tr>
<tr>
<td>Pain disorder</td>
<td>04 (1.05%)</td>
<td>02 (1.08%)</td>
</tr>
<tr>
<td>Conversion</td>
<td>02 (0.52%)</td>
<td>04 (2.16%)</td>
</tr>
</tbody>
</table>

P=0.107  P=0.000  P=0.980  P=0.419

Over a period of One Year

Table 4c: Pattern of psychiatric morbidity over a period of 1 year

<table>
<thead>
<tr>
<th>Duration</th>
<th>Study Group</th>
<th>Control Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 months</td>
<td>92</td>
<td>152</td>
</tr>
<tr>
<td>6 months</td>
<td>125</td>
<td>105 (69.07%)</td>
</tr>
<tr>
<td>9 months</td>
<td>25 (27.17%)</td>
<td>40 (26.31%)</td>
</tr>
<tr>
<td>1 year</td>
<td>04 (4.35%)</td>
<td>06 (3.95%)</td>
</tr>
<tr>
<td>1 year</td>
<td>02 (2.4%)</td>
<td>01 (0.65%)</td>
</tr>
</tbody>
</table>

* varying number of cases at different visits was due to dropout/remission/relapse/addition of new cases

As is evident from the table (4c) post traumatic stress disorder and major depressive disorder formed the major chunk of patients over the period of one year, in spite of the varying number of subjects (cases) due to dropout, remission, relapse and addition of new cases.
pattern of Psychiatric Morbidity in Study Sample.

Discussions

Besides immediate death and destruction, the short and long-term psychological consequences of disasters have been recognized for long. As compared to man made disasters, natural disasters occur suddenly, usually without warning and kill a large number of people in defined or limited geographical area over a limited period of time. Irrespective of whether natural or man made, the collective social suffering resulting from disasters require a, 'supreme effort by individuals, communities and even entire societies to overcome'. Findings available so far regarding the mental health effects of disasters reveal that the majority of persons exposed do well, suffering only from mild transitory symptoms, but a detailed research about the sizeable proportion of survivors who develop psychiatric morbidity after disaster exposure is certainly warranted taking all the risk detriments and vulnerability into consideration. The emerging evidence that the loss to the individuals and the destruction of the community are inter-connected, [with worse outcome in persons belonging to the communities with severe destruction and suffering severe personal losses], additionally reinforces the need. Our study sample comprises an impoverished, marginalized, socially backward class of mountain dwellers, with a possibility of disproportionately adverse psychological impact. The observations made so far while dealing with their trauma are likely to guide us better in understanding the needs and appropriate methods of service delivery for Kashmir earthquake survivors who are a part of the same socio-cultural system, traumatized by a natural disaster of an other kind.

Whole of the village was destroyed by the snow storm with at least one death in each house-hold. Most of the survivors had a near relative dead in the disaster. The realization that 3-4 times higher disaster related deaths and about 40 times higher affected population rates in developing countries as compared to the developed world has led to recognition of the consequences of disasters as a serious health problem demanding not only provision of physical needs like shelter and food but psychological rehabilitation as well. Paucity of data available from the developing world on the psychological consequences of natural disasters following December 2004 Tsunami in the Indian ocean region led to unprecedented enthusiasm resulting in mobilization of a lot of resources and man power to study the mental health consequences of such disasters. Occurrence of repeated natural disasters during the past few months all over the globe including hurricanes 'Katrina' 'Rita', 'Williams' in U.S.A. and Brazil, floods in many other parts of world and the latest one in South Asian region as a killer earthquake of October 8, 2005, further highlights the need to study the short term and long term psychological sequelae of these disasters. The importance of psycho-social consequences need to be recognized at the earliest so as to develop appropriate policy with relevant plan of action and integrate it into the overall disaster management strategy to meet the mental health needs of the disaster affected population. As revealed by our study the GHQ scores are positive in 57.67% of study population compared to 27.02% of control sample (P=0.000), which indicates high prevalence of psychological suffering and psychiatric morbidity in disaster survivors. The scores in the control group are also high when compared to other studies, which may be due to a chronic mass trauma situation already prevailing in Kashmir. 34.39% of study sample had a psychiatric disorder at the end of one year after disaster compared to 14.05% in control group (P= 0.000). The prevalence of psychiatric disorders in the study group of our sample is much higher than any of the studies reported so far from India. Various reasons may explain the high post disaster prevalence of psychiatric problems. Exposure to disaster leads to increased morbidity of varied nature and magnitude depending besides other factors, on spatial and temporal dimensions of the particular disaster. Though the pattern of high initial level of distress declining over time has been reported consistently by various longitudinal studies, up to 75% of victims during the first few hours or days after the event have been reported to suffer from immediate post disaster reactions. By 2 to 3 months there is usually a considerable decline with a progressive reduction over the first year. As reported in our other study, during the initial post disaster period we also observed a very high rate of post disaster reactions. Grief was universal in the first week after disaster and lessened as the weeks passed by. A high prevalence of core trauma symptoms, somatic complaints, anxiety symptoms during the first few weeks also gradually decreased with the passage of time in the majority of cases. However, in a sizeable number of survivors not only did symptoms like suicidal ideations, avoidance symptoms, somatic complaints and anxiety symptoms continue, but also increased. A clear cut symptomatology of various psychiatric disorders clearly emerged after initial 3-4 months period.

In case of natural disasters like snow storm and earth quake, the threat and destruction is not spread homogenously in the geographical area but areas nearer to the disaster site get severely affected while as distant areas are affected only marginally. We have also had similar observations during the past 4 months post disaster service and follow up of the worst ever Kashmir Killer earthquake of October 8, 2005 victims in the population of both the districts of Kupwara and Baramulla (unpublished). The dose response relationship between the severity of exposure and subsequent psychopathology results in varied rather than uniform prevalence rates. The probability of development of posttraumatic stress disorder due to natural disaster has been reported to be about 23.9% in males and 19.7% in females. Our study reveals the prevalence of 18.51% PTSD in the study population compared to only 1.08% in control population (P=0.000). Major depressive disorder forms the next most common diagnostic entity of 14.28% in study group compared to only 1.08% in control population. These findings are in agreement with other reported studies from other parts of the world, which revealed PTSD to be the most prevalent disorder after exposure to a disaster. Prevalence rates of PTSD ranging from 1.5% in population affected by Hurricane Andrew, to 67% in Armenian earthquake victims have been reported. Our study also reveals that out of the psychiatric patient group,
PTSD was the major diagnostic disorder with rates of 60%, 65.2%, 69.07% and 53.05% at 3 months, 6 months, 9 months and 1 year after disaster respectively in the study population. Similarly, major depressive disorder stood at 29.6%, 27.17%, 26.31% and 41.54% after a period of 3 months, 6 months, 9 months and 1 year post disaster, respectively. Norris reported that in developing countries, after exposure to natural disaster PTSD was found in 81%, MDD in 57%, generalized anxiety disorder (GAD) in 19% of the sample population. Our study also reveals almost uniform prevalence of PTSD and MDD over one year with slight increase in PTSD prevalence at 9 months and increase in the MDD prevalence at one year, which besides due to continued adverse socio-political conditions might be due to the harsh environmental conditions and lack of proper physical rehabilitative measures. Also the onset of winter and the earthquake precipitated the symptoms and led to a relapse in patients in remission and onset of delayed psychopathology in some. Besides, dose response relationship, many other vulnerability factors are important for interaction between disaster exposure, mediating factors and psychopathology. Displacement of survivors to other areas, housing them in tentments, unemployment, in activity and lack of recreational possibilities, favoring dependency in survivors and breakdown of traditional forms of social support are known to contribute significantly to mental morbidity.

One more reason for the persistence or increase in the prevalence of psycho-pathology may be due to breakdown in social support and family cohesion as due to lack of physical rehabilitation and harsh winter many families left the tentments and shifted to other places. It is well known that support from family and friends to disaster survivors leads to improved recovery, as psychological consequences of disasters especially in developing countries are known to be worst for subjects who are alone. Another reason for increased psychopathology may be the poor socio-economic and educational status of the survivors which is a risk factor for development of posttraumatic stress disorder.

Self-strength has been reported to be one of the important predictors of psychological morbidity in post disaster situations. Due to a lack of employment, and initial dependence reinforcement by various relief and rescue agencies followed by complete abandonment, the dependent disaster population was exposed to changed realities of life, contributing to persistence or increase in psycho-pathology. This is contrary to the natural course of PTSD in other disaster populations where it was observed that after 3 months, 53% of patient population recovered and after a period of 1 year only 15-25% of patient population had diagnosable psychiatric morbidity. In study on Spitak earth quake survivors, Goenjian concluded that inability to rehabilitate the people by various agencies potentially correlates with high prevalence, marked severity and protracted duration of post traumatic stress disorder. Thus these modifiable, but unmodified, secondary stressors compromise the survivors capacity to adapt after disaster. Similar was the case with the survivors of our study where, what the concerned promised in public, they could not give in private.

Except for the initial 1-2 months after disaster, when as knee jerk response relief agencies surrounded them, the survivors’ real immediate and future concerns were never secured. They were abandoned, given false hopes, made dependent, their innate coping weakened, social fabric disrupted and ultimately to their agony fragmented. Post disaster, living bereft and impoverished in itself has been no less traumatizing in view of unfulfilled promises, deplorable living conditions in small tents even in freezing temperatures, uncertainty about the safety of self and significant others and despite all this a sense of helplessness regarding the current happenings. Although funds were allocated for the relocation and rehabilitation of the survivors on government owned land, at a much safer and central place (Kansloo), the lower rung officials successfully impeded that process. Ultimately, most of them were relocated to an adjacent mountain, a topographically even more precarious site, where another disaster waits to befall them.

Claims of psychosocial rehabilitation, which are mouthed loudly by all concerned during the initial days of disaster, remain a distant dream for most of the disaster survivors. Rehabilitation plans have failed on all fronts. Social rehabilitation, which was claimed to be pursued for, has remained an elusive target. Despite a very high psychiatric morbidity, no definite plans have been conceived by the concerned authorities, and what remains to come in future for the survivors would hardly be a surprise.

**Feb 19, 2005 Snowstorm Tragedy: Lessons for Oct. 8, 2005 Earthquake**

The population living at Waltengo was already a socio topographically isolated and economically susceptible one. This from the outset increased their risk for poor mental health is in complete agreement with the observations made recently by Patel, et al. This predisposition was brought to the fore by the snowstorm. The tragedy and psychiatric morbidity rose to the very high levels, as revealed by our study. This scenario when considered in the light of the fact that much of the population in Kashmir lives under similar predispositions makes advance presence of a module for psychosocial rehabilitation mandatory. Its importance is further understood in the light of the October 8, 2005 earthquake.

Psychosocial care means not only emotional support, but effective help, suggestions and education besides many other things. It is aimed at helping people with emotional support till their own coping take over successfully.

Post-disaster survivors are charged with a mix of disbelief, anger, grief and frustration, which they need to ventilate. Supportive listening without excessive probing into the event and associated feeling is extremely helpful to relieve survivors of their emotions. The mere presence of the empathetic listening can give a lot of relief to the survivor, provided they are allowed to speak comfortably. Educating the survivors about the effects of disaster on the mental health and differentiating normal from abnormal reactions, not only re-assures but also facilitates help seeking for severe reactions and early treatment for psychiatric disorders, if they emerge in future.
Disasters adversely affect and overwhelm the day-to-day stress coping mechanisms of survivors. Appropriate psychological support can remarkably enhance the capacity to regain the power to resolve problems. This can be achieved by helping survivors to get back their cognitive skills, which are of immense help in preventing future psychopathology and associated disability. In this regard, spiritual help from faith healers, clergy and respected elders of the community was of immense help in helping survivors to come to terms and live down the trauma. Spirituality is a strong tool to reinforce resilience among the survivors and cope with various difficulties through the course of trauma. Eastern religions teach inevitability of fate, which helps survivors to accept and live beyond trauma. Our other studies have revealed that resorting to religion happens to be the most often used coping method for dealing with the problems and intense emotions of trauma in our society. Similar observations have been made by the recent studies in internally displaced people of Chechnya. Its effectiveness in lowering stress related responses have also been proven by studies in Israel. The beneficial effects of spiritual intervention have further been substantiated by the observations made in the other parts of the world. Following the recent hurricane, 'Katrina', it was observed that religious involvement was the mainstay for hope and peace. Russell DSouza and Bruce Singh (2005) analyzed the mental health challenges while working within the disaster area of Srilanka following Tsunami. Their observations about the role of religion, spirituality and rituals in enhancing resilience, coping and understanding the meaning of the trauma in this perspective, strikingly matches with what we have been seeing among the trauma victims and snowstorm survivors in Kashmir. Spiritual involvement in the survivors of Waltengo also involved attachment to, and obedience of local clergy (Imams) and spiritual leaders (Pir). In many cases extreme avoidance and numbing of even desperate cases was significantly reduced, within a few sessions of advice and counseling by them. Integrating spiritual components as an integral part of the psychosocial intervention was rewarding in the management of many patients with severe post disaster psychopathology. Spiritual healers (pirs) and clergy (imams) have a central role in this process among socioeconomically deprived, and educationally backward people, who in the complete absence of any mental health care services hold the pir in high reverence. Psychotherapeutic intervention through the medium of spirituality actually contains some essential elements of cognitive behavioral therapy including informal administration of elements of prolonged exposure, stress inoculation therapy and cognitive reframing. As pointed out above, there is globally an increasing recognition among mental health professionals that many patients consider spirituality as a primary human dimension. Spiritual beliefs and practices along with social, emotional, physical and cognitive aspects are getting included in the current concepts of coping strategies. Recommendations for incorporating spirituality as a core constituent of coping resources assessment or relapse prevention work for traumatized populations are getting stronger day by day. For appropriate practice of formal models of cognitive behavioral therapy in non-western societies, their ground realities are of immense importance and stressed upon by international trauma experts also. Recently Foa (At the symposium “ After the Tsunami: Mental health challenges to the community for today and tomorrow”, held Feb 2-3, in Bangkok, Thailand) pointed out that “the methods (CBT) that have been used in the United States and Israel, and even in Japan and Korea, may need to be modified to meet the requirements of countries affected by the Asian Tsunami. This will entail the use of training methods to enable large number of mental health professionals to be trained together and enable the training of paraprofessionals”. Various other interventions in the form of relaxation methods, guided imagery, systematic desensitization, cognitive reframing and sleep hygiene are quite helpful in alleviating the post disaster reactions including psychopathology. Supervised pharmacological intervention may however, be necessary in cases of severe post disaster reactions and mental disorders, which fail to respond satisfactorily to various psychotherapeutic interventions. While planning and implementing psychotherapeutic interventions, cultural and individual factors must be considered. Culturally accepted relaxation and recreational methods like street plays and social congregations are quite helpful in dealing with stress of emotional reactions and help survivors to identify loss at a higher plane and as a common one. Similarly, vocational interest of different individuals in the society must be identified and these interests externalized by engaging them in productive activities so that mental energies are channelized in a healthy fashion. Lack of updated information and biased assumption based decisions lead not only to a wastage of time and resources but also result in investment in interventions that have detrimental consequences.

The results from the study on snow storm survivors and the various possible psychotherapeutic interventions serve important lessons to the policy makers, as they embark upon the challenges of social rehabilitation and psychotherapeutic interventions in October 8 earthquake survivors. The quake area of Kashmir being just 100 kilometers away from snowstorm site shares much with it in terms of topography, the people, their living and coping strategies, the administrative setup and the general inclination of NGO's.

In conclusion the study reveals that psychiatric morbidity in disasters victims is as prevalent and persistent here, as elsewhere in world, with PTSD forming the predominant diagnosis. There is need for further longitudinal studies to evaluate post disaster psychopathology. modes of intervention need to be evaluated and standardized according to local needs of the population. In addition the physical rehabilitation, it is extremely important to limit the further development of psychopathology.

Grimfaced orphans with vacant eyes
widows who have bid joy adieu
Survivors of that fateful night
when death in guise of snow and ice
that solitary hamlet entombed...
References:
30. Fran H. Norris, Psychosocial consequences of natural disasters in developing countries: What does Past research tell us about the potential effects of the 2004 Tsunami?, National Center for Post-Traumatic stress Disorder, Department of Veterans Affairs.
46. Russell D Souza & Bruce Singh. The mental health challenge in Srilanka from working within the disaster areas. World Psychiatry, 2005; 4,2:68