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DISASTER AND MENTAL HEALTH: RESPONSES OF MENTAL HEALTH PROFESSIONALS

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ABSTRACT:

There is a growing awareness of mental health consequences of disasters all over the world(WHO,1992). This is reflected in the regular inclusion of mental health components as part of relief and rehabilitation efforts. Mental health professionals have become a part of the teams of professionals working with the disaster affected populations all over the world . There is strong evidence, based on meta-analysis, to show that disasters increase the prevalence rate of psychopathology by approximately 17-20% on average .The mental health professionals involvement in disasters,in India, has been only in the last 20 years. Past efforts of professionals have been to (i) raise awareness of the impact of disasters on mental health of the affected

populations, among the general public and policy makers;(ii) providing direct care to the affected populations;(iii) training of primary care doctors, health workers and volunteers,(iv) support to the initiatives of voluntary organisations and (v) research. Mental health professionals in India have the challenge of building services mainly with the available community resources. The roles of professionals is different in the different phases of the disaster, namely, the pre -disaster phase, immediately following the disaster, during the first one month, as part of the long-term relief and rehabilitation. In addition they can work with the media, evaluate the ongoing programmes and report systematically on the findings and advocacy with administrators, voluntary organisations and funding agencies. These efforts not only can result in services for a large number of the population who would not normally have sought help but also increase the awareness of the importance of mental health in the minds of the individuals, communities and planners.

The Declaration of the 1990`s as the Decade for Natural Disaster Reduction by the United Nations General Assembly in 1987 was a major milestone in the recognition of the needs of the disaster affected populations. There has been significant changes in the last one decade. However, the developments have not been adequate, especially in the developing countries. At the beginning of the 21st century there is recognition of this area as an area for urgent action both at international (IFRC,2000) and national levels. (Parasuraman and Unnikrishnan,2000).

It is recognised that the laws relating to the disaster affected populations has lagged behind that of other situations like wars. The most recent World Disasters Report (IFRC 2000) noted:

" At the dawn of the 21st Century, a cohesive approach to international disaster response law is not much further along than it was at the start of the 20th.From earliest days, the Movement has been attentive to peacetime disaster response policy, but has made no sustained effort to meet the legal dimensions of the challenge. It has fallen behind, relative to its own long record of service in the development of international humanitarian law. Our response capacity grows, even as natural and technological disasters cut deeper and wider paths in the world. The law has grown very slowly, perhaps because earlier generations seldom encountered the same mix of humanitarian needs and means that are spread before us now. That said, it is unlikely that any other challenge looming so large in world affairs has received so little attention in the legal realm. During the early decades of the 21st century, a strong, new international law of disaster response could, and should, be counted among the International Red Cross and Red Crescent Movement`s contributions to the world community".

The scope of this article will be to (I) review the international literature on the magnitude and nature of mental health needs of the disaster affected populations;(ii) consider the past efforts of mental health professionals in India to address these needs and (iii) identify the specific tasks for the professionals at different stages of the disasters.

MAGNITUDE AND NATURE OF MENTAL HEALTH NEEDS:

Systematic studies of mental health aspects of disaster affected populations all over the world is of recent origin. The disaster of Buffalo Creek was a milestone(Stern, 1976).Following this disaster,litigation was initiated by the 625 survivors of the flood .For the first time individuals who were present at the scene of disaster were allowed to recover compensation for mental injuries. Psychic impairment, the term coined for these injuries, was found in virtually all the survivors. Of the $ 13.5 million, $6 million was distributed for the psychological damages. The Three Mile Island nuclear disaster, in 1979, (Dew et al, 1987) is an another landmark study which used sophisticated methodology as well as the prospective design.

Mental health aspects of disasters have been studied in a wide variety of disasters and countries. From India, the major disaster of importance and a reference point is the Bhopal gas tragedy (SrinivasaMurthy and Issac,1987, Sethi et al,1987,Bharucha and Bharucha,1987,Jasanoff, 1988,SrinivasaMurthy,1990,Muralidhar,1994,Cullinan et al,1996) .This is the first major disaster to be studied systematically for both physical and mental health impact.

In the international literature professionals have studied disaster affected populations from a variety of angles. Reports of mental health consequences of shipwreck (Henderson and Bostock, 1977), rail disaster in Australia (Singh and Raphael, 1981), cyclone in SriLanka (Patrick and Patrick, 1981), Darwin cyclone in Australia (Raphael and Middleton, 1987), plane crash in Amsterdam (Gersons and Carlier, 1993), earthquake in Armenia (Kalayjian, 1994), nuclear disaster in Chernobyl (Havenaar etal, 1996,Havenaar and Brink, 1997,Havenaar et al, 1997, Bromet et al, 2000), Australian bushfire (McFarlane et al, 1997),earthquake in Lebanon(Abdo et al,1997),terrorist bombing in Oklahoma(Pfefferbaum yet al,1999,North et al,1999),earthquake in Japan(Fukuda et al,1999),ice storm in Canada(McMurray and Steiner,2000),political violence in Azerbaijan(Goenjian et al,2000), the Marathwada earthquake (Sharan et al,1996)have focussed on the mental health aspects of the affected populations.

The review of the studies during the last three decades show a trend towards examination of the causal and modifying factors,in addition to the prevalence of mental health needs.There is an attempt to understand the process of destabilisation and restitution among the affected populations.

Two meta-analysis of the epidemiological studies of disaster affected population are available (Rubonis and Bickman, 1991, Bromet and Dew, 1995). The earlier meta-analysis concluded that disasters increase the prevalence rate of psychopathology by approximately 17% on average. The review found, a "modest and statistically significant excess in morbidity associated with exposure to disaster". In addition, this review has examined the issues relating to the psychopathology and specific outcomes studied:

" That is, are the predictors of posttraumatic stress disorder different from predictors of general measures of distress, depression, anxiety, somatisation, or disaster related bereavement?"

In one study, the background characteristics, and exposure variables, but not post disaster environmental factors, were significant factors of general distress .In contrast, exposure and post disaster variables, but not background characteristics, were significant predictors of posttraumatic stress disorder symptoms. (Solomon et al, 1993). In an another study, McFarlane (1990) concluded that premorbid vulnerability played a more important causal role than that played by the impact of the disaster itself, particularly the adversities before the event, neuroticism, history of mental health treatment, and a cognitive style characterised by avoidant thinking about negative experiences.

The role of social support is also coming under scrutiny. The different aspects of social support operate in various demographically defined populations. Palinkas et al (1992) found that perceived family support did indeed buffer the effects of exposure on depressive symptoms in Euro-Americans but not in Native Alaskans. In the study of Solomon(1987) the spouse support reduced disaster related symptoms in exposed men but not in women. In an another study, non-kin support and not kin support mediated the effect of effect of personal loss on depressive symptamatology (Kanaisty and Norris, 1993).

The shifting of emphasis on the processes determining the outcome of disaster has implications for interventions in general and mental health and social work interventions in particular.

The other important development during the last two decades is the identification of role for and the contributions of different mental health professionals,namely, psychiatrists(Raphael, 1984),nursing professionals(Adams et al,1999,Weeks,1999), social workers(Coulter and Noss,1988).In addition,investigators have worked to mobilise the community resources(Okura,1975, Young and et al,1999) and involve the primary health care personnel(Stein and Myers,1999, Lima et al,1989,Lima et al,1992) and the media(Gist and Stolz,1982).

There is also growing recognition of the impact of disaster relief work on the rescuers. This has implications for all relief and rehabilitation personnel(Beaton et al,1999). Bradford and John (1991) emphasised the need for services to plan psychological screening and support for relief staff. Laseca (1996) reported on 21 therapists, who had higher levels of psychological symptoms of depression and post-traumatic stress disorder. A new area of mental health aspect of disaster is to study the perceived benefit of disaster experience. This is considered a most promising area of stress research. (McMillen et al,1997).

The overall finding with regard to mental health effects of disasters is, that, the majority of persons exposed to a disaster do well and have only mild, transitory symptoms, and some individuals develop psychiatric illness.(Ursano et al,1995). The recommended approach to mental health care in disasters is to focus on the existing community resources and to provide services without the "psychiatric" label. The efforts should be to maximise the resources within the communities by equipping community leaders to provide initial crisis intervention and emotional relief services. In some communities such an approach has increased the awareness of the community to other mental health issues

like school violence and utilisation of the same methods of community mobilisation to address the issue (North and Hong, 2000).

MENTAL HEALTH INTERVENTIONS IN DISASTERS IN INDIA:

Mental health professionals, psychiatrists, clinical psychologists and social workers have contributed to the current high awareness of the psychological aspects of disasters for the affected population. This is reflected in the current emphasis of the relief and rehabilitation in the cyclone-affected population of Orissa, where psychosocial interventions are receiving as much importance as other relief activities. This development has been the result of 5 different initiatives by the professionals.

(i) Raising Awareness:

The first disaster when the issue of mental health aspects of the post-disaster population came up acutely was in the Bhopal gas tragedy. The complaints of the affected population,initially, were seen largely as compensation related. It took the efforts of professionals (Sethi et al, 1987,Srinivasa Murthy and Issac, 1987) to present the known knowledge about the `wounded minds` similar to the wounded bodies.The change in attitude of the administrators and the medical profession was achieved by presenting the video recording of the interviews of psychological distress. Specifically the prevalence in the general population of a cluster of symptoms like panic attacks, the occurrence of symptoms in all social classes helped to convince the authorities and the general

population the real nature of the complaints. This shift from considering them as `imaginary` and not giving importance, to recognising the psychological reactions as understandable and normal and requiring specific help and support was the result of this process of sensitisation. Looking back, the change in attitudes of care providers to mental health aspects of disasters is significant.

(ii)DIRECT CARE TO AFFECTED POPULATION:

Mental health professionals have responded along with the rest of the community to provide direct services. This was most actively seen during the Marathwada earthquake in 1993.Teams of mental health professionals from cities of Bombay, Pune and other cities reached to share their skills and provide care to the affected population. For many months all the four mental hospital teams visited in mobile vans and provided care at the doorsteps of the affected populations. Similarly, the different mental health professionals
in the Bombay city (from the TISS, SNDT, medical colleges etc) came together to reach out to the affected population in the post riots phase to facilitate recovery of the affected population. This role of professionals is going to be a constant factor for the many years to come, due to the lack of existing mental health infrastructure in most parts of the country.This approach of utilising the available resources is the preferred way of providing care. The mobilisation mental health professionals from different parts of the country to the disaster affected populations is generally not a desirable approach to mental health care for the reason that the affected population may speak a different language, have different cultural beliefs and practices and the visiting teams are unlikely to be sensitive to these aspects. However, when there is no other

alternative, the professionals moving from distant places is a need in India following disasters affecting large populations, for the acute phase of the disaster.

(iii) TRAINING OF PERSONNEL IN MENTAL HEALTH CARE:

This role has been a very important one. As pointed out in the earlier section, even in countries with extensive mental health infrastructure the emphasis is on empowering of the community (individuals, families, voluntary agencies etc) to provide mental health care. It is to the credit of mental health professionals in India, that they have not only recognised the need to share their skills with non-specialist doctors, health workers and volunteers but have gone further to prepare information booklets and manuals in a user friendly manner(,SrinivasaMurthy et al,1987,Srikala et al,2000,KishoreKumar et al,2000).

Two examples are illustrative of this approach to provide mental health care. .At the time of the Bhopal disaster there was no psychiatrist in the city of Bhopal to care for the 700000 population. Two initiatives were taken. The King George Medical College, Lucknow under the leadership of Prof.Sethi moved professionals to work in rotation in The Bhopal City(Sethi et al,1987). NIMHANS, Bangalore, with their background of community mental health, developed a manual for the medical officers and carried our training for all the medical officers (SrinivasaMurthy and Issac, 1987,SrinivasaMurthy et al, 1987).

However, the understanding of the larger needs of the population was limited at the time of the Bhopal disaster, as no effort was made to focus on providing skills to the affected population. In the course

of the next 15 years, the growth of the understanding of the needs of the population led to think of giving skills not only to doctors but to the general population itself. In the Orissa disaster, soon after the disaster, information booklets were prepared for the general population, community level workers, teachers and doctors(Srikala et al 2000).This development is very creditable. These efforts emphasise the important role of the professionals to SIMPLIFY and SHARE their skills with the general population.

(iv)SUPOPORT TO VOLUNTARY ORGANISATIONS:

In disaster relief, voluntary organisations play a vital role in reaching to the people immediately and being sensitive to the local needs. However, driven by the need to reach out, very often the voluntary organisations do not have the skills to provide mental health care.In India, mental health professionals have worked with these groups to empower them and legitimise their interventions .A good example of this type of support was the initiatives of OXFAM, India under the leadership of Dr.Harish Shetty of Bombay, following the Gujarat cyclone. In the affected Kutch region there was no possibility of any other approach to reach the affected population except by working with the local developmental agency. The result was to include mental health care through a group of 20 developmental workers. Some of the workers had very little educational background. A positive outcome of this effort was the development of a large variety of culturally relevant intervention materials in the form of poems, group grieving through" shraddanjali" programme.

(v) Research:

There was no literature to understand the psychological effects of disasters in the country before the Bhopal Disaster. In the last 15 years, significant progress has been made. The 5 year, annual mental health survey of Bhopal population, the ongoing studies of the Marathwada earthquake affected population are important contributions to a better understanding of the mental aspects of the affected population. There are a large number of issues that require further elucidation in the Indian context, like the role of family, social supports,religion, the relief and rehabilitation and their benefits and limitations.

MENTAL HEALTH CARE PRINCIPLES

From the international disaster literature the following broad principles of mental health care has been identified.(SAMSA,1999)

1.No one who experiences the event or witnesses the event is untouched by the event.

2.Disaster result in two types of trauma, namely the individual and the collective trauma.

3.Most people pull together and function during and after a disaster but their effectiveness is diminished.

4.Disaster stress and grief reactions are normal responses to an abnormal situation.

5.Many emotional reactions of disaster survivors stem from problems of living caused by the disaster.

6.Disaster mental health services must be uniquely tailored to the community they serve.

7.Survivors respond to active interest and concern.

8.Interventions must be appropriate to the phase of the disaster.

9.Supoport systems are crucial for recovery.

Based on the past experiences of providing mental health care to disaster affected population in the country, and the international literature, the following schema of interventions at different stages can be outlined. It is significant to note that the measures do not require a large mental health professional base and relies on community resources. The second important point to remember is to consider the mental health needs as normal need of the population.

INTERVENTIONS IN DIFFERENT PHASES OF DISASTER:

The above nine principles can be translated into specific activities that need to be taken up at different phases of the disaster as follows.

PREDISASTER PHASE:

This is relevant to those types of disasters where there is prior warning or where the occurrence of a disaster (like annual flood and cyclones in the coastal areas of Andhra Pradesh) is predictable. Usually the preparations in these areas includes building of shelters, improving the communication etc. It is in this phase mental health professionals should work with other officials and voluntary organisations to prepare the community and individuals to the impact of the disaster on them at the individual and group levels. This would include joining the meetings of disaster preparedness, sharing the information about the stress and its effects on individuals, emphasising the need to keep the family as a unit in relocation (avoiding separating men from women and children), keeping

the community together when large groups are relocated temporarily, and teach the adults to maintain regular daily routines and methods of handling disruption of psychological functions by regular rest, sleep and organising group interactions. It would also be valuable to identify at this stage itself some volunteers who can be trained on psychosocial help. These people from the community would not only provide help but also become the communication agents between the affected community and the helping agencies. It is ideal to have one key individual for every 25 - 30 families. The use of the Manuals prepared in the Orissa Cyclone are suitable for their training.(kishorekumar et al,2000,Srikala et al,2000)

INITIAL PHASES OF DISASTER (1-4 weeks):

This is the period of intense disruption of the lives of the affected individuals. A lot of immediate relief activities in terms of food, clothing, shelter, security and medical care are provided by a variety of groups- both governmental and non-governmental. There will be people who would have lost relatives, experienced injuries, separated from the family and the chief need is for crisis intervention. Often the psychological aspects are not given importance at this stage. The lack of psychological sensitivity leads to problems of various types like non acceptance of help and not following the directions, to the expression of hostility .The mental health professionals will have to reach the people themselves as well as through the variety of persons working with the disaster affected population .A special group that should be sensitised are the medical personnel as they see most of the distressed population. . I recall visiting the hospitals after the Latter earthquake and hearing the staff complain about the crying of the patients and the patients wanting to share their experience of the earthquake again and again with them .The health staff,

especially the nurses saw this process of sharing as waste of their time and did not understand this as an emotional need. An orientation to them to understand the need to share the experience of disaster again and again led to the better understanding of the behaviour and greater sympathy to the affected population. Similarly encouraging the family members to stay with the physically ill is also helpful to decrease the anxiety of the affected persons and the families. During this phase all affected persons live in a world of "impending disaster" and overreact to all types of uncertainities.

At this stage mental health professionals should reach out to the leaders of the voluntary organisations for two reasons. One is to emphasise the needs of the staff working with the disaster for emotional support as well as to prepare them to understand the emotional needs of the population, along with other physical needs. Translation of the simple clearly written self-help material emphasising how individuals can take care of themselves is useful. Some of the messages of self-help that can be shared with general population are relaxation and meditation; sharing of feelings; resuming family routines; rituals; restarting activities; participating in relief and rehabilitation. A sense of empowerment of the population should be the goal.

FIRST FEW MONTHS (1-6 months):

This is the most important phase for mental health interventions. The initial phase of intense relief efforts usually start receeding from the agenda of help providers. Often the period of first 6 weeks is described as the "honeymoon" period. Soon after this, individuals have to face the reality of rebuilding there lives and come to terms with the losses. Psychological reactions are common in this phase. Some studies have

reported that nearly everyone experiences symptoms of anxiety, depression, panic and related symptoms during this phase.
Mental health professionals will be too few to meet the needs of a large population. This is the period for sharing the caring skills with all help providers working in the community. It is tempting to think of a separate mental health worker. This is best avoided except at the supervisory level. The effort would be to identify all the care providers and orient them to mental health care. Some of the key persons are the primary health care personnel, the schoolteachers, and the developmental workers. Mental health professionals should become trainers of these groups and provide regular support to them to integrate the mental health care along with all other activities. It is also important to not present emotional needs as deviance, as this approach would stigmatise the individuals and lead to denial of help. The effort would be to provide help as a natural need of the affected population and to every one rather than the "ill "persons only. Again the effort would be to strengthen methods of understanding the disaster at the level of family and community.
An additional role of the mental health professionals will be to function as referral support to those persons who require greater degree of help and those found not responding to the initiatives of the community level help providers.

RELIEF AND REHABILITATION PHASE:

The disaster affected population and their needs start to recede from the headlines of the media as well as the priority of help providers. The rebuilding of the disrupted lives of the individuals and communities is a continuous process. The effort at this stage is to rebuild the community institutional structures to take over the activities of outsiders.

WORKING WITH THE MEDIA:

Media is an important part of the disaster relief activities .It is the media that brings to attention the human side of the disaster. However, it is commonly see that media is relatively insensitive to the psychological needs. Often they refer to psychological distress in derogatory terms. This happens due to lack of correct information. Following the Orissa cyclone, mental health needs were projected as people going mad, committing suicide. Mental health professionals have to work with the media to help them understand the emotional reactions, the different phases of such reactions and the correct way to project the issues.

DOCUMENTATION:

There is a lack of documentation of the many innovative experiences of mental health care provided to the different disaster affected populations in the country .It appears that everyone is busy doing things and in this process the experiences do not get written up and the core lessons are not identified. An important role of the mental health professionals, especially that of social workers will be to build documentation into the ongoing activities of relief and rehabilitation.

In conclusion, the understanding of the mental health aspects of disasters is developing rapidly all over the world. Indian mental health

professionals have contributed to these efforts.The current understanding has strong links to social work principles and practice. Mental health professionals can bring the best of their skills and knowledge to benefit the affected population. In these efforts the professionals have to play a multifaceted role. Here lies the challenge and opportunity.

REFERENCES:

Abdo,T,al-Dorzi,H. Itani,A.R. Jabr,F. & Zaghoul,N. 1997 — Earthquakes: health outcomes and implications in Lebanon, Journal of Medicine Libanon,45(4),197-200.

Adams,S.M. Dolfie,E.K. Feren,S.S. Love,R.A. Taylor,S.W. 1999 — Mental health disaster response: nursing interventions across the life span, Journal of Psychosocial Nursing and Mental Health Services,37(ii),11-19.

Beaton,R. Murphy,S,Johnson,C Pike,K. Corneil,W. 1999 — Coping responses and posttraumatic . stress symptamatology in urban fire service personnel, Journal of Trauma and Stress,12(2),293-308.

Bharucha,E.P. & Bharucha,N.E — Neurological manifestations among. Those exposed to toxic gas at Bhopal,

1987 Indian Journal of Medical research, 86,Suppl.59-62.

Bradford,R.& John,A.M. 1991 The psychological effects of disaster work:implications for disaster planning,Journal of Royal Society of Health,111(3),107-110.

Bromet,E. & Dew,M.A. 1995 Review of psychiatric epidemiologic research on disasters, Epidemiological Reviews,17(1) 113-119.

Bromet,E.J. Goldbager,D. Carlson,G. Panina,N. Golovakha,E. Gluzman,S.F. Gilbert,T. Gluzman,D. Lyubsky,S. Schwartz,J.E. 2000. Children`s well-being 11 years after the chornobyl catastrophe, Archieves of General Psychiatry, 57(6),563-571.

Ciuca,R. Downie,C.S. &Morris,M. 1977 When a disaster happens: how do you meet emotional needs? American Journal of Nursing, 77(3)454-456.

Coulter,M.L. & Noss,C.I. 1988 Preventive social work in perceived enviornmental disasters, Health and Social Work,13(4),296-300.

Cullinan,P. Acquilla,S.D. Dhara,V.R. 1996 Long term morbidity of survivors of the the 1984 Bhopal gas leak, National Medical Journal of India,9(1),5-10.

Dew,M.A..Bromet,E.J. Schulberg,H.C. Dunn,L.O. Parkinson,D.K. 1987 Mental health effects of the Three Mile Island nuclear reactor restart, American Journal of Psychiatry,144(8),1074-1077.

Fukuda,S. Morimoto,K. Mure,K. & Maruyama,S. 1999 Posttraumatic stress and change in lifestyle among the Hanshin-Awaji earthquake victims, Preventive Medicine, 29(3),147-151.

Gersons,B.P. Carlier,I.V. 1993 Plane crash crisis intervention:a preliminary report from Bijlmermeer,Amsterdam, Crisis, 14(3),109-116.

Gist,R.& Stolz,S.B. 1982 Mental health promotion and the media. Community response to the Kansas City hotel disaster, American Psychologist, 37(10),1136-1139.

Goenjian,A.K. Steinberg,A.M. Najarian,L.M. Fairbanks,L.A. Tashjian,M &Pynoos,R.S. 2000 Prospective study of posttraumatic stress,anxiety,and depressive reactions after earthquake and political violence, American Journal of Psychiatry,157(6),911-916.

Havenaar,J.M. &van den Brink,W. 1997

Psychological factors affecting health after toxicological disasters, Clinical Psychology Review,17(4) 359-374.

Havenaar,J.M. Rumyantzeva,G.M. Van den Brink,W. Poelijoe,N.W. Van den Bout,J. van Engeland,H. Koeter,M.W. 1997

Long-term mental health effects of the chornobyl disaster: an epidemiological survey in two former Soviet regions, American Journal of Psychiatry,154(11),1605-1607.

Havenaar,J.M. van den Brink,W. van den Bout,J. Kasyanenko,A.P. Poelijoe,N.W. Wholfarth,T. Meijler-Iljina,L.I. 1996

Mental health problems in the Gomel region(Belarus): an analysis of risk factors in an area affected by the chornobyl disaster, Psychological Medicine,26(4),845-855.

Henderson,S. Bostock,T. 1977

Coping behaviour after shipwreck, British Journal of Psychiatry, 131(1),15-20.

International Federation of Red Cross 2000

World Disasters Report: Focus on public health, Geneva.

Jasanoff,S.

The Bhopal disaster and the right

1988 to know, Social Science & Medicine,27(10),1113-1123.

Kalayjian,A.S. 1994 Mental health outreach program following the earthquake in Armenia:utilising the nursing Process in developing and Managing the post-disaster Plan, Issues in Mental Health Nursing,15(6),533-550.

Kaniasty,K.&Norris,F.M. 1993 A test of the social support deterioration model in the context of natural disaster, Journal of Personality and Social Psychology,64,395-408.

KishoreKumar,K.V. Chandra-Sekar,C.R. Choudhury,P.C. Parthasarathy,R. Girimaji,S. Sekar,K. &SrinivasaMurthy,R 2000. Psychosocial care for community level helpers ,Bangalore,Books For Change.

Lesaca,T. 1996 Symptoms of stress disorder and Depression among trauma counsellors after an airline disaster, Psychiatric Services,47(4),424-426.

Lima,B.R. Chavez,H. Samaniego,N. Pompei,M.S. Santacruz,H,Lozano,J. Disaster severity and emotional disturbance:implications for

1989 Primary mental health care in Developing countries, Acta Psychiatrica Scandinavica,79(1) 74-82.

Lima,B.R. Pai,S. Santacruz,H. Lozano,J. 1991 Psychiatric disorders among poor victims following a major disaster: Armero,Colombia, Journal of Nervous Mental Disorders,179(7),420-427.

Lima,B.R. Chavez,H. Samaniego,N.&Pai,S. 1992 Psychiatric disorders among the emotionally distressed disaster victims attending primary mental health clinics in Eucador, Bulletin of Pan American Health Organisation, 26(1) 60-66.

McFarlane,A.C. 1990 The Australian Disaster:the 1983 bushfires, International Journal of Mental Health,19,36-47.

McFarlane,A.C. Clayer,J.R. VBookless,C.L. 1997 Psychiatric morbidity following a natural disaster:an Australian bushfire, Social Psychiatry and Psychiatric Epidemiology,32(5), 261-268.

McMillen,J.C. Smith,E.M. Fisher,R.H. 1997 Perceived benefit and mental health after three types of disasters, Journal Consulting Clinical Psychology,

65(5) 733-739.

McMurray,L.&Steiner,W. 2000 Natural disasters and service delivery to individuals with severe mental illness-ice storm 1998,Canadian Journal of Psychiatry,45(4),383-385.

Muralidhar,V. 1994 The Bhopal tragedy, National Medical Journal of India,7(3), 150-151.

North,C.S. Nixon,S.J.Shariat,S. Mallone,S. Mc;Millan,J.C. Spitznagel,E.L.,Smith,E.M. 1999 Psychiatric disorders among survivors of the Oklahoma City bombing, Journal of American Medical Association,282(8),755-762.

North,C.S. Hong,B.A. 2000 Project CREST: a new model for mental health intervention after a community disaster,American Journal of Public Health,90(7),1057-1058.

Okura,K.P. 1975 Mobilising in response to a major disaster, Community Mental Health, 11(2), 136-144.

Palinkas,L.A- Petterson,J.S. Russel,J. Downs,M.A. 1992 Community patterns of psychiatric disorders after the Exxon Valdez oil Spill,Americamn Journal of Psychiatry, 150(10),1517-1523.

Parasuraman,S.& Unnikrishnan,P.V. 2000 India Disasters Report,New Delhi, Oxford University Press.

Patrick,V. Patrick,W.K. 1981 Cyclone `78 in Sri Lanka--the mental health trail, British Journal of Psychiatry, 138,210-216.

Pfefferbaum,B. Call,J.A. Sconzo,G.M. 1999 Mental health services for children in the first two years after the 1995 Oklohoma City terrorist bombing, Psychiatric Services,50(7),956-958.

Raphael,B. 1984 Psychiatric consultancy in major disaster, Australian New Zealand Journal of Psychiatry,18(4),303-306.

Raphael,B. Middleton,W. 1987 Mental health responses in a decade of disasters:Australia,1974-1983, Hospital and Community Psychiatry, 38(12),1331-1337.

Rubonis,A.V.& Bickman,L. 1991 Psychological impairment in the wake of disaster: the disaster-psychopathology relationship, Psychological Bulletin,109, 384-399.

Sethi,B.B. Sharma,M, Trivedi,J.K. Singh,H. 1987 Psychiatric morbidity in patients attending clinics in gas affected areas in Bhopal, Indian Journal of Medical Research, 86,Suppl.,45-50.

Sharan,P. Chaudhary,G. Kavathekar,S.A. Saxena,S. Singh,B.&Raphael,B. 1981 Preliminary report of psychiatric disorders in survivors of a severe earthquake, American Journal of Psychiatry,153(4),556-558. Postdisaster morbidity of the bereaved .A possible role for preventive psychiatry? Journal of Nervous and Mental Disorders, 169(4),203-212.

Solomon,S.D.,Smith,E.M. Robins,L. 1987 Social involvement as a mediator of disaster-induced stress, Journal of Applied Social Psychology,17,1092-1112.

Solomon,Z. Laor,N. Weiler,D. Muller,U.F. Hadar,O. Waysman,M. Koslowsky,M Yajkar,M.B. Beich,A. 1993 The psychological impact of the Gulf war:a study of acute stress in Israeli evacuees, Archieves of General Psychiatry,50(4)320-321.

Srikala,B. Chandrasekar,C.R. Kishore Kumar,K.V. Chowdhury,P. Parthasarathy,R. Girimaji,S. Sekar,K.& SrinivasaMurthy,R. 2000 Psychosocial care for Individuals after the Orissa Supercyclone, Bangalore, Books for Change.

SrinivasaMurthy,R. &Issac,M.K. 1987 Mental health needs of Bhopal disaster victims and training of medical officers in mental health aspects, Indian Journal of Medical Research,86,Suppl.51-58.

SrinivasaMurthy,R. Issac,M.K. Chandrasekar,C.R.&Bhide,A.V. Bhopal Disaster-Manual of mental health care for medical officers,

1987 Bangalore,ICMR Centre for Advanced Research in Community Mental Health, NIMHANS, Bangalore

SrinivasaMurthy,R. 1990 Bhopal,International Journal of Mental Health,19(2),30-35.

SrinivasaMurthy,R. Psychosocial Consequences, In Parasuraman,S.and Unnikrishnan, P.V. (Eds),India Disasters Report, New Delhi, Oxford University Press.

Stein,B.D. &Myers,D. 1999 Emotional sequalae of disasters: a primary care physician`s guide, Journal of American Medical Association,54(2),60-64.

Stern,G.M. 1976 Disaster at Buffalo creek: from chaos to responsibility, American Journal of Psychiatry,133(3),300-301.

Substance Abuse and Mental Health Services Administration, (SAMSA)Centre for mental health services Psychosocial issues for older adults in disasters, Washington.

1999

Ursano,R.J. Fullerton,C.S. Norwood,A.E. 1995 — Psychiatric dimensions of disaster: patient care,community consultation, and preventive medicine,Harvard Review of Psychiatry,3(4),196-209.

Weeks,S.M. 1999 — Disaster mental health services: a personal perspective,Journal of Psychosocial Nursing and Mental Health Services,37(2),14-18.

World health Organisation 1992 — Psychosocial consequences of of disasters:prevention and management.MNH7PSF791.3

Young,B.H. Ruzek,J.I. & Gusmam,F.D. 1999 — Disaster mental health: current status and future directions, New Directions in Mental Health Services,82:53-64.