Presidential Address

DISASTER AND MENTAL HEALTH

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I express heartfelt gratitude to all the members of Indian Psychiatric Society for bestowing upon me the responsibility of the office of the President of Indian Psychiatric Society. I believe your blessings and guidance will help me to do justice to the confidence reposed in me.

I have pondered a lot to select the topic of the customary Presidential·address to be delivered on this auspicious occasion as a foremost duty. I have sought valuable advice of my esteemed teachers and respected senior members of our society. I am thankful to all those who have spared their valuable time to share views with me.

In the meantime, my own state was hit by the apocalypse, the worst-ever super cyclone on the 29th of October, 1999 which ravaged the coastal Orissa claiming thousands of lives and leaving millions homeless, helpless, starving, and bereaved. Devastation of such enormous magnitude numbed not only the survivors but also the whole world at large. This disaster that attracted prime attention of global mass media, is just one of the many that have affected Orissa. The super cyclone was preceded by a major cyclone in Berhampur and followed by flood in Bhadrak. Besides Orissa is a favourite haunting ground of natural calamities like famine, flood, fire, cyclone etc. As I have lived through these disasters and seen my fellow-men struggle past the debacles, I believe I can put heart and mind-both to the selected topic.

At the outset I would like to share with you my personal experience of working on two major disasters, i.e. Baripada Inferno on 23.2.1997 and the recent super cyclone.

BARIPADA INFERNO

Date	:	23rd February,1997 at 3.15 PM
Type	:	man-made, peripheral
Affected	:	30,000 gathering
Injured	:	1500 (approx.).
Death	:	277
Mental health	:	58.4% with high score on PGIQ. Females relatively more affected. Anxiety, depression, PTSD common.

SUPER CYCLONE, ORISSA

Date	:	29th & 30th of October, 1999
Type	:	natural, central
Affected	:	15 million
Death	:	beyond 30,000 (unofficial) 20,000 approx. (official)
Mental Health	:	65% score by DIPAS & DIPR PTSD, anxiety, depression, psychoses.

Both these disasters have been observed to exert remarkable adverse impact on the mental health of not only the survivors but also their relatives, helpers, volunteers and aid-providers.

Such detrimental effects of disasters on mental health has been observed all over the world irrespective of the nature of disaster. A study on disaster and mental health is pertinent in order to be able to assess the effects of disaster, plan remedial measures and develop preparedness to tackle sudden onslaught of such unwanted events.

DEFINITION

As commonly understood disaster implies a sudden misfortune causing extensive damage. It is not easy to evolve a precise, scientific and

all-inclusive definition of disaster. It has been variously described by different authors (Korver, 1987). A disaster is a complex phenomenon with multiple variables. An event may be a disaster along certain dimensions, such as ecological, economic, material, psychological or social, but not necessarily along all of these in any particular event. The number of human lives lost is also an important aspect of disaster.

However, WHO provides a convenient and comprehensive definition : viz - A disaster is a severe disruption, psychological and psychosocial, which greatly exceeds the coping capacity of the affected community. The remarkable feature of this definition is that it incorporates the element stress vs. coping capacity gradient.

The important elements to be considered in the conceptualization of disasters include :

1. A disaster disrupts the social structure and can not be handled by the usual social mechanisms. This disruption may create more difficulties than the physical consequences (Quarantelli, 1980).

2. Several variables like the ability of the victims to adjust psychologically, the capacity of the community structures to adapt to the crisis and the amount of help that can moderate the impact of disasters.

3. The concept of disaster changes across time and among different cultures. A lengthy first-hand experience of coping with natural disasters has produced the creation of specific "disasters sub-cultures", which are likely to affect their pattern of psychosocial reactions.

4. Frequent catastrophic events may unfortunately raise the threshold for an event to be considered a disaster. Ideally this should not lead to a failure to recognize and respond to the adverse effects that may occur, even with repeated disasters. Otherwise the morale and resources of the community may even further deteriorate and may lessen its capacity to cope.

TYPES OF DISASTER

Disaster is a multi dimensional event. Hence it has been attempted to classify in different ways. Conventionally it may be classified as natural or man-made :

Natural : cyclone, earthquake, hurricane, drought, landslides etc.

Man-made : chemical, nuclear or transport accidents etc.

The line of demarcation in such taxonomy remains blurred, because man's actions grossly distort the natural process and ecological equilibrium. Flood may be the result of the collapse of a dam. Poor construction may result in heightened damage following an earthquake and so on.

It is important to have an integral perusal of such events keeping in mind the inherent dimensions. Barton (1969) suggested four main dimensions : scope of impact (geographical, number of people); speed of onset (sudden, gradual, chronic); duration of impact (e.g. repeated episodes) and social preparedness of the community.

A further important dimension has been added (Green, 1982) which refers to whether disasters are central or peripheral with respect to a geographic community. Peripheral disaster is one which happens to a group of people who have come together by chance (e.g. an aeroplane crash), survivors return to their respective geographic communities where the physical setting and social support networks are still intact.

MODERN DISASTERS

Apart from the natural calamities, modern days, with its inherent characteristic of advanced technology empowered with extensive destructivity, high degree of activity, cut-throat competitiveness, political chaos, etc. have seen occurrence of newer disasters. It will be worthwhile to outline some :

Nuclear accident : Chernobyl accident is a glaring example which has been adequately studied by many (Viel, 1997; Havenar et al., 1997).

Chemical accident : Be it an industrial accident or the result of chemical warfare such mishaps are characterised by vivid psychosocial aftermath, of which the Bhopal Gas Tragedy of

1984 has been well documented (Sethi et al., 1987; Murthy,1997).

Refugees : Sudden intrusion of refugees for whatsoever reason is being observed all over the globe i.e. sudden transition of a large number of helpless and desperate persons with deep psychological trauma into another country. The strain is felt among both - the refugees and host. The cases of Rwandan refugees in 1994, Cambodian in 1979 and the Ethiopian in 1980 are well known, India being no exception. Khan (1997), and Shetty (1997) have highlighted the related factors.

Bomb blasts : It is usually the consequence of increasing terrorist and antisocial activity and has become a frequent occurrence. Post-blast psychological impacts have been demonstrated by Gautam et al.(1998).

Communal riots : Communal riots have become more frequent as a result of the unwanted interplay between religion and political manipulation by which India has been affected many a times. The sad Bombay blast well studied by Shetty & Chhabaria (1997) and the Delhi riot following assassination of Mrs. Indira Gandhi, the then Prime Minister of India are just examples.

Political collapse : Tadzjikistan provides an unique example of how a nation can be suddenly subjected to disastrous situation by political change. After disintegration of USSR, there was a halt of supplies to Tadzjikistan which was left with no money, no medical care, no food but ample chaos as a result of civil war (Veeken, 1998). .

Others : Air crash, train accidents, other transport accidents, hijacking, terrorism, mass-killing etc. are some more disastrous contributions of 'modern day' which are just mentioned to avoid extensive elaboration.

All these disasters, natural or man made, share the fact that they are ravaging, unwanted and sudden. Suddenness implies that they hit unexpected. The paradox is that we do not remain prepared for such unexpected events although they are reasonably "frequent". One has to understand the psychological response of individuals and community, possible preventive and remedial measures and related psychosocial issues in order to develop a system to either avoid devastation or minimize detrimental aftermath.

EPIDEMIOLOGY

The first systematic study on the psychological consequences of a disaster was undertaken by Eduard Stierlin (1909) from Zurich who investigated 21 survivors of a mining disaster in 1906 and an earthquake in Messina, Italy in 1908. Another documented one is the Coconut Grove night club fire disaster in Boston in November,1942, with 491 casualties (Lindemann,1944). This represents one of the first systematic civilian studies on the psychological reactions in victims of disaster.

A look at available reports reveals how frequently the 'unexpected' disasters appear. A WHO publication (1991) estimates that approximately 339 million people had been affected by flood alone between 1900 to 1988. A pertinent observation is that out of the 109 worst natural disasters which occurred between 1960 and 1987, as selected and studied by Benz (1989), 41 occurred in developing countries only. However, the number of deaths caused among the affected populations was far greater in the developing countries (7,58,850 deaths in developing countries as compared to 11,441 in developed ones). Similar difference between the developing and developed countries is also evident from the fact that all the disasters causing high fatality between 1960-81, as listed in an UNDRO publication (1984), occurred in developing countries.

Most likely the high extent of risk in developing countries is owing to increasing population size, greater population density in vulnerable areas and rapid urbanization. Bromet and Dew (1995) provide a relatively recent review of epidemiology on disasters.

India is a regular victim of disasters. Every year, on an average, 63 millions of Indians are affected (World Disasters Report,1997) of whom 4723 are killed, the economic loss being nearly 1.6 million US$ per annum (CRED, Brussels).

United Nations General Assembly Resolution 42/169 adopted on 11 December, 1987, designated the 1990s as a Decade for Natural Disaster Reduction. There are two United Nations Offices dealing specifically with matters related to disasters namely the UN Disaster Relief Co-ordinator's Office (UNDRCO) and the office of the UN High Commissioner for Refugees (UNHCR). This reflects a global realisation of the intensity of the problem and need of focussed attention.

It is observed that until the 1970s, the disaster literature on psychosocial aspects was periodic and unintegrated. Since the 1970s a rich literature, largely American and Australian, has been published. There are also important works in other languages (German, Russian, Spanish and French). As a research field, however, the study on the mental health aspects of disasters is yet to be adequately explored.

POST - DISASTER PSYCHOLOGICAL PROBLEMS

There are divergent opinions about the extent of post disaster psychological disorder (Perry & Lindel,1987). Some are of the view that disasters represent catastrophic events producing adverse psychological reaction among most victims, while others suggest that the extent of the problem has been overestimated, and that psychological problems due to the stressful event appear only among people with a pre-existing vulnerability.

The emotional response to disaster follows a predictable pattern over phases. The phases include : (i) evaluating damages, (ii) the heroic phase, (iii) the honeymoon, (iv) disillusionment and (v) reconstruction. These phases have been divided by considering specific characteristics over defined periods of time.
1. Evaluation of damages (hours) : characterised by apathy, disorientation, wandering, surprise, perplexity, fear, anxiety and helplessness.
2. Heroic phase (1-2 weeks) : characterised by strong direct feeling, heroism, solidarity and optimism.

3. Honeymoon (2-24 weeks) : characterised by great solidarity, eagerness to rebuild and sharing of common experiences.
4. Disillusionment (2 months - 2 years): characterised by withdrawal, loneliness, anger, frustration, community disorganization, negativity, hostility, impulsiveness, violence, alcohol and drug abuse.
5. Reconstruction phase (rest of life) : characterised by acceptance of losses, realistic assessment of the situation and search for alternatives to rebuild lives.

The factors influencing psychosocial response involve three broad areas, viz :
The disaster : Occurrence, magnitude, suddenness & type.
The community : Level of preparedness, social support, leadership & past experience/s.
The victims : Age, level of education/exposure, marital status, physical health, personality, coping skills, losses & social support.

Scarcity of resources, inadequate intervention and lack of mental health support system worsen the psychosocial aftermath which is a major concern in developing countries. The differences in culture patterns, social structures, and coping behaviours may reasonably modify the incidence, the severity, and the psychosocial outcome. Flynn (1997) particularly emphasizes the factors of nature of people, culture and society.

Perceived emotional support, perceived disruption and perceived benefit are three new dimensions that have attracted attention. In a study on family role, Solomon et al.(1993) found that perceived emotional support was found to be an important moderator of disaster's effect on psychiatric distress, generally overriding the effect of family role. Burnett et al.(1997) had emphasized the importance of perceived disruption as a major determinant and proposed a scale for its measurement. McMillen (1997) analysed the importance of perceived benefit in post disaster phase and observed that perceived benefit moderated the effect of severity of disaster exposure on mental health

diagnosis over time. Without perceived benefit, as exposure severity increased, the amount of recovery decreased. If benefit was perceived, as exposure severity increased, the amount of recovery increased. On comparison between three types of disasters he further observed that survivors of a tornado had the highest rates of perceived benefit, followed by survivors of a mass killing and survivors of a plane crash.

Analysis of specific disorders following disaster reveals occurrence of the following morbid conditions in general - PTSD (Post Traumatic Stress Disorder), grief, depression, anxiety & alcohol and substance abuse.

Early classical descriptions portray a stunned, dazed individual with apparently disengaged behaviour as "disaster syndrome" occurring in 25% (Freiderick,1981) to 75% (Duffy, 1988) of victims. According to Raphael (1986) psychological morbidity tends to affect nearly 30-40% of the disaster population within the first year following it. At two years, levels are generally less but with persistent level of morbidity that seems to become chronic for some individuals and for some disasters. Disasters that are man-made and with high shock and destruction show persisting levels of severe impairment.

PTSD following disasters has been worked upon by a number of workers. The proportion of PTSD among disaster has been observed to be 34.3% following 1995 Oklahoma terrorist bombing (North et al.,1999) and 18.5% following Tangsham quake (Benz & Hexiang, 1999). PTSD has also been reported following 1995 Hanshin-Awaji quake (Irie,1996), Exxon Valder Oil Spill (Palinkas et al.,1993), Armenian earthquake among children (Miller et al.,1993) and among survivors of mass shooting (North et al.,1997).

Grief is an obviously expected condition after disaster. There may be grief for the loss of loved ones, home, treasured possessions, livelihood or even the community one belonged to. The severity of the emotional reactions of grief include sadness, distress, anger, longing and yearning for what has been lost.

Alcohol or substance abuse form another important psychiatric problem. A high incidence of abuse associated with criminal violence as well as stress disorder, and other mental disorders among the vulnerable. Relapse of chronic mental disorder due to discontinuation of maintenance treatment or non-availability of medicines is also an important aspect deserving due consideration.

Psychopathological aftermath of three other types of disasters is worth being mentioned, i.e. Tadzjikistan following collapse of USSR (Veeken,1998), Kurdistan during war (Bailly,1996) and war-trauma following 1991-95 Yugoslav-War. The commonality is that all three were political events jeopardising a nation as a whole and pushing the people into a disaster like condition. The psychopathological profile also resemble those of disasters. Hence such conditions warrant similar crisis intervention programmes.

These problems do not present necessarily as individual cases to be treated. Adverse social conditions like social withdrawal, diminished resources and opportunities, increased criminal behaviour, unrest, increased number of orphans and widows further complicate the issue. Increased widowhood deserves special attention especially in Indian set up as they are not usually earners.

SPECIAL GROUPS

Attention must be paid to the following special groups at risk.

1. Children and adolescents : Earlier studies on children's response to disasters suffered from methodological limitations. Many studies reveal considerable stress reactions, clinging behaviour, heightened dependency and emphasize the need of focussed child and adolescent care (Pynoos et al.,1993,1998; Flynn-Nelson, 1998; Jones et al., 1994; Pfeffeerbaum, 1998). The mental health and symptoms of children are found to correlate with their parents (Breton et al.,1993). Pfeffeerbaum et al. (1999) described an effective school based

programme for the Oklahoma terrorist bombing in which 19 children had died and 200 lost one of the parents.

2. The elderly : The elderly also merit special attention. The Indian set up is characterised by joint family pattern where the elderly enjoy a respectable dependent status. Such a social situation usually has buffering effect on psychological distress. There are other family members who share the after-math and are expected to take care. But when the family is disrupted by disaster and the surviving old man becomes lonely, the situation is different. In western countries they may look out for old-age homes. But in our country they are neither habituated to nor there is ample availability of old-age homes where they can get institutional care. When a disaster ravages and tears apart a family the surviving lone aged persons face a miserable helplessness.

3. Those with suicide risk : In an extensive study over 77 countries, involving different types of disasters, and pre and post disaster analyses it was found that rate of suicide remarkably increases after such events (Krug et al.,1998). Increased rate of suicide following disasters warrant health attention.

4. The rescuer and aid providers : *No one who experiences disaster is untouched by it.* It also affects those who had not been personally hit but feel the pang when they form a part of disaster relief team in any way, i.e. as volunteers or bystanders. They may suffer the terrible trauma of not being able to achieve success in their rescue and relief attempt. Also for the professional, failure to be able to rescue victims, especially children, is a significant stressor, comparable only to the loss of a colleague. Higher rate of PTSD has been reported among trauma counsellors (Lesaca,1996), 24% of rescuers (Ersland et al.,1989) and 13.3% of medical and paramedical workers (De-Clercq et al.,1996).

It follows from the definition (exceeding the coping capacity) that in the initial phase of disaster not only the victim but also the rescuers/health personnel are faced with a demanding situation where everyone can not be helped adequately.

THE INDIAN EXPERIENCE

India is a frequent victim of disasters. There is a relative dearth of literature in comparison to the frequency and intensity at which disasters hit different regions. Disaster management has received some attention of the Government, NGOs and experts over past few years. An apex body called National Crisis Management Committee has been formed to deal with policy matters. The Natural Disaster Management division of the Ministry of Agriculture acts as the main coordinator. A national institute by the name of National Center for Disaster Management has also been established.

Two of the most devastating disasters have already been presented. It will be worthwhile to provide brief reports on some other major ones in India.

Bhopal gas tragedy, 1984 : 40 tonnes of methyl iso cyanate (MIC) from tank 610 of the Union Carbide India Limited factory at Bhopal leaked into the surrounding environment. The number of dead has been estimated to be around 2500. About 0.3 million were exposed to the poisonous gas. Late Prof.B.B. Sethi of K.G. Medical College, Lucknow and Prof.R.S. Murthy of the NIMHANS, Bangalore were one of the first to take note of mental health relevance and make a preliminary study. Dr. Ashok Bhiman and Dr. S.K. Tandon made studies on adults and children respectively. A study within 3 months yielded a 22.6% prevalence rate for mental disorders. Most of the patients were females (81.1%) and under 45 years of age (74%). The main diagnostic categories were anxiety neurosis (25%), depression (20%) and adjustment reaction with predominant disturbance of emotions (16%). Cases of psychosis were rare (Murthy,1997). A training programme for medical officers was organised by Prof.R.S. Murthy and Prof. M. Isaac.

Bombay riots, 1992-1993 : Occurred in two phases. There was large scale destruction of property with 25,000 house burnt and razed to

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ground, 10,000 shops and establishments destroyed, a large number of places of worship desecrated and 313 taxies and rickshaws reduced to ashes. About 25,000 persons were rendered destitute and 67,000 had to take shelter in 79 camps. Property worth 9,000 crores was lost (Shetty & Chhabria, 1997).

A study conducted by the Dept. of Psychiatry, B.Y.L. Nair Hospital of hospitalised patients (192) revealed that 33% expressed anger and were in a state of shock, fear and helplessness; 2% of those had attempted suicide (all female who saw the mangled bodies of their husbands); 21% of those interviewed suffered from severe anxiety; 41% had paranoid thinking and obsessional symptoms and majority had loss of libido. P.T.S.D features scored very high and few were emotionally dumb and 36% had suicidal thoughts (Shetty & Chhabria,1997).

Latur earthquake,1993 : The earthquake struck Latur and Osmanabad districts at 3.56 AM on the 30th of September, 1993 and measured 6.3 on the Richter Scale. Approximately 8,000 people died and 14,000 were injured due to the quake in both Latur and Osmanabad districts. 30,000 families were rendered homeless and 16,400 houses in Latur and 16,280 houses in Osmanabad were totally or partially destroyed. Minor to extensive damages were seen in 1,25,000 houses in other districts. The quake killed 1,017 of cattle and injured another 4,699 in Osmanabad. In Latur 1,083 cattle were killed and another 8,345 were injured. The estimated financial loss in Latur and Osmanabad with respect to infrastructural damages was 214.54 million rupees.

The V.H.A.I. study conducted during the early post impact phases in five villages revealed that the survivors were suffering from post traumatic stress disorder (74%), major depression (89%), generalised anxiety disorder (42%) and panic disorder (28%).

PSYCHOSOCIAL INTERVENTIONS

Psychosocial interventions mainly aim at the following : prevention of psychological disorders,

treatment, remaining prepared, organisation of mental health team at disaster site and rehabilitation.

Planning for intervention at any level needs appraisal of available resources. It will be in collective interest if these resources can be properly utilised. In a broad way the resources comprise of local leaders, ground-level workers like gram-sevakas/health workers, teachers, local officials, volunteers/NGOs, religious leaders, other local professionals, the affected people themselves, mass media and above all the primary health care system. Soliman et al. (1998) strongly advocate involvement of local persons in disaster relief work.

Since in developing countries the resources devoted to mental health are usually inadequate to meet even regular needs, the primary health care system is often the only health services system available in the case of disaster.

The training of primary health care personnel to give appropriate treatment to people attending health centres and showing emotional distress due to a very stressful event deserves priority (Lima,1986). Keeping in view the defined spectrum of disaster-related problem Lima et al.(1989) further advocate the convenience and essentiality of focussed training programme for primary health care personnel.

Further, the primary health care system can be utilised for proper follow-up of victims and their families over a long time.

One of the major role of mental health experts in developing preparedness is to educate and train the entire spectrum of professionals concerned with disaster rescue operation in the fundamentals of disaster psychiatry and emotional first aid.

Other measures in preparedness activities include : development of mental health teams under proper leadership; mental health care in the initial phase; planning for longterm care; mobilising support for victims and helpers at different levels and proper information dissemination.

At the disaster site it is important to identify the groups at risk, establish efficient information/ support system, help the bereaved and evolve

specific procedure to help the survivors. The groups at risk include the next-of-kin, the injured survivors, their relatives, the uninjured survivors, onlookers (particularly at risk are the helpless helpers), rescue teams, persons doing body handing, health personnel, persons holding responsibility, workmates (in company disasters) and evacuees. Further one will have to manage emotional response due to death, viewing dead bodies and missing persons.

The majority of rescuers report a need to work through emotional distress by sharing their feelings. In such condition debriefing is important. The psychiatrist can act as the formal leader of the debriefing group or may give training to professionals in rescue teams so that they can lead such activities. Debriefing ought to aim at easing expression of feelings, exploring particular problems, identifying positive gains, education, and explaining how to cope with stress.

Project Heartland was a noteworthy response to Oklahoma bombing by the mental health team (Call,1999). In 1996 Manchester bombing, Gurthrie et al.(1996) are of the opinion that service intervention was more effective than debriefing. However in our setup, we will have to evolve our strategies keeping in view our resources.

On the whole the role of a psychiatrist involves training field team before disaster, individual care during it and leading the rescue team after it (Louville,1996).

ROLE OF INFORMATION

Accurate information is important at every stage of disaster management. As part of preparedness, people should be provided with clear and unambiguous information about what to do in the event of a disaster affecting their community.

During disaster, particularly in developing countries, victims are often poorly informed about the events that are occurring. Rumours are frequent, authorities give conflicting information and ineffective action follows.

Accurate, trustworthy, and easily understood information about a disaster should be provided to the population at a local level. Such information should be provided in collaboration with leaders and community representatives.

Public information can however lead to adverse psychosocial consequences by creating a sense of confusion and mistrust. Libow (1992) particularly warns against possible trauma due to recommendations, to a situation of affective learning, which allows people to develop better strategies during and after an accident.

COORDINATION

It is essential issue to have proper coordination among the mental health team, administrators, local authority, local leaders and others. But it is unfortunate that at times administrative authorities fail to rise up to the occasion and do not realise that mental health care forms an important part of crisis management. The poverty of administrative response is evident from the remark *"time is the best healer"* by one at the top during Latur crisis (Shetty,1970). Mental health professionals should be able to convince the people and administrators and community from emotional trauma.

Much of the disaster work that mental health professionals can do falls outside of the more traditional roles usually taken by mental health professionals. These roles include reaching out to survivors through variety of modes and rarely waiting for them to seek traditional forms of help. Much of what can be done does not require labelling individuals as disorders but may be done within the overall response of the community to the survivors on a variety of levels. To be most effective, we need to be involved in planning efforts that can be activated when disaster strikes or before rather than being reactive to the situation after it has occurred (Green & Lindy,1994). *We have to be confident and proactive rather than sluggishly reactive to disasters.*

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