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# "DISASTER - THE IMPACT OF A CATASTROPHE ON THE HUMAN COMMUNITY"

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The Philippines continues to beset by a major disaster. For two years its citizens in Central Luzon have had to cope with the effects of a major earthquake and subsequently, the eruption of a six-hundred-year-old dormant volcano. In addition, a devastating flood caused the death of thousands in one of the southern islands; and typhoons have recently caused destruction in the northern parts of the country.

On July 14, 1991 the Pinatubo Volcano Observatory (1), published by the U.S. Department of Interior, reported that the Mt. Pinatubo eruption was decidedly the greatest disaster in terms of human impact since the Krakatau eruption of 1881. The report cited that the fine particulate matter it has injected into the stratosphere will have global ecological impact and the massive destruction of communities as a result of volcanic mudflows, lahars, and floods will have serious impact on Philippine society and social structure for many years.

A year after this eruption, headline news stories like this one "ERASED COMMUNITIES, – one by one, entire towns in Tarlac and Pampanga are vanishing; along with lives, and, a way of life." (2), have come from Central Luzon, confirming the heavy magnitude of the Mt. Pinatubo disaster.

The Mt. Pinatubo disaster continues to stun the entire country, even as it struggles to manage its other socio-economic and political problems. The consciousness of the physical destruction is sustained because it is projected nationwide by media everyday. There continues to be active efforts to help the hungry, the sick and the homeless, although donor fatigue is evident. Through all these, there is agreement that changes also occur in the inner recesses of the victims of this disaster, that are not right away obvious, yet equally important. These changes are the psychosocial consequences that accompany any disruption to one's life, any suffering in the loss of that which one holds dear, important or meaningful; or in giving up long established or familiar life styles, livelihood or relationships.

A recent meeting of experts from the World Health Organization has defined disaster as a severe disruption, ecological and psychosocial, which greatly

exceeds the coping capacity of the individual and the affected community(3). Quarantelli(4) further clarifies that disasters are crisis events where demands exceed resources. In common usage, disasters are extraordinary adverse life experiences, which cause widespread damage, physical injury, death and intense human suffering.

What has become clear is that a disaster is not a technological accident or a natural event; it is the impact of a catastrophe on a human community(5). The magnitude of the disaster is defined by the intensity of the human consequences of an event, and not by its magnitude. In otherwords, the number of human lives lost or significantly affected by the event is the most important criterion for defining a disaster. Since man is a biopsychosocial organism, the effects of the disaster must be viewed from this perspective on all three levels. In most cases, the psychosocial consequences outweigh the physical. The common pathway of all the physical concerns is man himself. His thoughts and feelings determine his consciousness of himself and his envronment and ultimately his subsequent actions and behavior. The nature of the disaster is determined by how man as the victim suffers and copes with the circumstances of the disaster; how he is able to recover from it, pursue a livelihood, rebuild his community, restore its resources, and ultimately survive and be involved in others.

From this psychosocial perspective, the following are important considerations:

1. A disaster is the product of the impact of a natural or technological catastrophe on a specific population.
2. Such impact disrupts the social structure which cannot be handled by the usual social mechanisms. The destructive force will have different consequences, depending on both its strength and the resistance of the affected community(6).
3. Of particular consideration is that catastrophes occur more frequently in developing countries(7). People in these countries like the Philippines are already in disadvantaged situations and are pushed to live in hazardous conditions. A higher proportion of victims who survive will strain the resources of their communities further.
4. Disasters are adverse life events which generate psychological reactions and distress from individuals. Pervasive experiences of unexpected stress and grief, anxiety and anger need to be recognized as intervening stress reactions in the efforts of recovery from the disaster(8).
5. Several variables can moderate the impact of the psychological distress experienced by the disaster victims. These include the vulnerability of the individual or his capacity to adopt psychologically, as well as the capacity of the community to respond to the crisis, especially the degree of support system it can generate to buffer the impact(9).
6. The most important concern in disaster is the human victim and the community where he lives. The basic psychosocial issue is the transformation of those affected by the disaster from being victims to being survivors(10).

7. Psychosocial interventions can be undertaken through the different phases of the disaster (impact through recovery and rehabilitation) to achieve this transformation.

From the psychosocial perspective, it is assumed that the entire population are victims of the disaster. However, they may further be categorized as direct, indirect and hidden victims.

a. Direct victims are those in the disaster area who have suffered losses, bodily injuries, or loss of body parts, property or livelihood.

b. Indirect victims are those in the area but have no particular experience of loss. This is the general population.

c. Hidden victims are those who have to attend to, take care of and provide for the needs of direct victims. These include the relief and rescue workers, the emergency care givers, the community organizers, and the spiritual counsellors in the churches.

**Disasters and Developing Countries**

In 1986 the United States Agency for International Development(7) reported that in this century, there have been 2392 disasters in the world; this figure excluded those occurring in the U.S. Of these disasters 86.4% occurred in developing countries, producing a total of 42 million deaths and 1.4 billion affected individuals. Seventy-eight percent of all deaths occurred in developing countries, where 97.5% of all affected individuals are located. The observed ratio between affected and killed of only 2.9% for the developed nations is ten times greater for developing countries. Hence, not only are disasters disproportionately more frequent in developing countries, they are also responsible for a much higher proportion of victims who having survived, will need long-term management. Disasters are more likely to affect the socioeconomically disadvantaged populations because their very condition has forced them into more hazardous areas, rendering them more prone to disasters. The United Nations Disaster Relief Organization (UNDRO) (11) list of disasters for the period 1960-81 indicates that in general the number of deaths and injuries and the amount of damage is closely related to the prevailing level of economic development. The greatest numbers of people killed or affected by disasters lived in countries characterized by low economic status: Bangladesh, Nicaragua, Ethiopia.

**Psychological Reactions in Disasters**[12], [13], [14], [15], [16], [17], [18], [19]

After an extreme life experience such as a disaster, one can expect an immediate psychological stress response. These reponses are of varying intensities and are related to the horrifying dimensions of disaster: multiple deaths or physical injuries, exposure to extreme danger, witnessing deaths and injuries of loved

ones, traumatic experiences of helplessness, the need to choose to help others or to fight for one's own survival; or there are acute experiences of loss of properties, of livelihood, of heritage. These create feelings of disequilibrium and a sense of loss of control over one's life and destiny. Shock, numbness, helplessness, and anger ensue. Bereavement becomes a pervading feeling. A disruption or deterioration of ordinary life activities occurs and physical symptoms such as heavy perspiration, rapid heart rate, inability to think or concentrate, and other digestive symptoms are felt.

Soon, there is an upsurge of energy and emotions, and anger becomes much more expressed. Resentments and accusatory behaviors are as common as the compelling drive to help and rescue others. Panic may happen. However, there is a continuing sense of loss of control and equilibrium. Guilt at having survived may be felt; doubts and self-blame are not uncommon. There may be periods of excessive chatter, or undirected or purposeless activities.

If no relief occurs as time goes on, there will be a feeling of helplessness, withdrawal, resentment or unresolved feelings and hopelessness. If, however, the impact of the disaster has been mitigated, the person recovers and starts to join his family and his community in the task of regaining control of their lives and daily activities.

Oftentimes, for a majority of disaster victims, their reactions may be short-lived and they may recover without much difficulty. For those at high risk of developing psychological symptoms, especially those in constant or chronic lingering stress conditions, psychological symptoms may linger on for several months or even years and may need definite interventions. These are powerful emotions produced by powerful disruptions to ordinary lives.

These chronic reactions to stress are shown in Table I. They are divided into physical, emotional, cognitive and behavioral, and spiritual. A whole range of physical symptoms are experienced by disaster victims; these are their reasons for consulting the health clinics very often. Physicians and other health workers are advised to be aware that disaster victims who frequent medical clinics and who are not found to have significant physical illnesses may be suffering from the intense somatizations of chronic stress reactions.

Intense feelings of anxiety which may be accompanied by flashbacks or intrusions of frightening memories of the disaster are common. Any reminder may trigger these feelings and the person may try to avoid such reminders or shut out his feelings in an avoidance response. Anxiety and intrusive memories or reexperiencing may alternate with numbness or with states of high arousal, or panic. These may prevent the person from going on or from regaining control of himself. Ordinarily these reactions may be short-lived; however, if they are maintained over long periods, they represent the psychological symptom of post-traumatic stress disorder.

In some cases certain severe psychological reactions to disaster may be dismissed as only natural. However, although it may be right to think that fractur-

Table 1. Chronic Reactions to Stress

| *Physical* | *Emotional* | *Cognitive and Behavioral* | *Spiritual* |
|---|---|---|---|
| Tension in muscular-skeletal system (head, neck, backaches) | -Mood swings | -Unexpected reactions | -Declining interest in others |
| Digestive difficulties (gut reactions) | -Anxiety | -Uneven performance | -Doubt value system/religious beliefs |
| Lowered immunity; vulnerability to colds, infection, allergy | -Irritability | Disorganization | -Questioning of major life areas (profession, employment, etc.) |
| Cardio-vascular effects, blood pressure, rapid heartbeat | -Depression | -Difficulty with concentration | -Self-preoccupation |
| Fatigue/feeling of tiredness and being drained, sleep problems, appetite change, frequent physical complaints | -Feeling of alienation from people | -Reluctance to begin projects | Disillusionment |
| | -Suspiciousness | -Distraction | |
| | -Boredom | -Proneness to accidents | |
| | -Feeling of immobilization | -Absenteeism | |
| | -Negativism/Cynicism | -Withdrawal | |
| | -Feeling of always meeting needs of others | -Excesses/ Abuses | |
| | | **alcohol* **prescription drugs* **tobacco* **food* **caffeine* **work* | |

ing one's leg may be a "natural" reaction to a fall, this does not diminish the severity of the suffering from the fall and the need to help the patient who got fractured(7).

Rubonis and Bickman's review(20) on the analysis of the relationship of disasters and subsequent psychologic morbidity has shown that 7-40% of disaster victims showed some form of psychologic morbidity. Raphael(13) showed that psychological morbidity will affect 30-40% of the disaster population within the first year following it. The type of psychopathology with the highest prevalence is general anxiety (40%), followed by phobic symptoms (32%), psychosomatic symptoms (36%), alcohol abuse (36%), depression (26%) and drug abuse (23%).

## Specific Psychosocial Concerns in Disaster[3]

For those people who have suffered intense and significant loss of loved ones, homes and property, their communities and their heritage, grief may be prolonged and chronic lingering may intensify into severe depression. These victims are also vulnerable to ensuing social pathologies, or may resist recovery and rehabilitation efforts.

Social pathology after a disaster includes increases in alcohol and drug consumption. The numbing and avoidance reactions, especially in the face of chronic stresses, may lead to social withdrawal, difficult interpersonal relationships and eventual disruption of family and community life which will adversely affect adjustment. If those affected need to recover their livelihood and productivity, this maladjustment and withdrawing behavior further aggravates the difficulties in recovering their lives and daily activities. Family conflicts and problems, and in some cases even abandonment of the family, may occur.

As a result of the social changes following a disaster, secondary psychosocial stressors are generated. The displacement of individuals and families to new settlements or geographical areas, housing people in overcrowded camps and evacuation centers for indefinite periods, inactivity, lack of recreational and productive activities, unemployment, and rendering people dependent on others for daily subsistence cause a general disruption of the social organization and the breakdown of traditional social supports. This breakdown will have significant psychosocial consequences upon family members, especially young children. The latter, especially those who may have lost their parents, are especially vulnerable.

Significant psychosocial stresses are experienced by disaster workers: the relief and rescue workers, the health and social workers, the community organizers and the local leaders who, though they may have been directly affected by the disaster themselves being residents of the affected areas, need to immediately overcome their own reactions and help the other victims. The survivors may be overcome by guilt; they may feel that they may not have helped enough, because being in the forefront in disaster assistance they are the objects of the emotional reactions especially anger and accusatory behavior of the victims themselves; or they themselves may have suffered from the burn-out of disaster work. The available resources in disaster usually seem too meager, creating in these disaster workers feelings of helplessness and powerlessness and of being terribly alone. The ensuing organizational stresses within their own agencies can further aggravate the psychosocial consequences of the disaster on them.

## Psychosocial Reactions Among Filipino Disaster Victims

The occurrence of major disasters in the Philippines since 1990 has given mental health workers the opportunity to document the impact of the disasters on the Filipino victims. A Self-Report Questionnaire (SRQ), found in other community mental health studies to be a valid instrument, was administered by mental

health teams in the disaster areas as soon as possible. Table 2 shows the SRQ results immediately after the disaster among the randomly selected respondents who were victims of the earthquake in 1990, the Mt. Pinatubo eruption (1991), and the killer flood of Ormoc (1991). These respondents were seen within one month after the disaster. The scores 1-20 showed the occurrence of intense psychological reactions regarding sleep, appetite, general bodily state, anxiousness, and

Table 2. Psychosocial Reactions After A Disaster
(Results from a Self-Report Questionnaire administered within one month)

| Area/Nature of Disaster | N | Range of Positive Scores | | |
|---|---|---|---|---|
| | | 1-20 (+) Score = 5 or more | 21-25 (+) Score = 1 or more | 26-30 (+) Score = 1 or more |
| TARLAC Mt. Pinatubo Eruption | 219 | 97.7% | 91.8% | 92.7% |
| NUEVA ECIJA Earthquake | 870 | 83.1% | 81.4% | - |
| CABANGAN ZAMBALES Mt. Pinatubo Eruption | 54 | 74.1% | 72.2% | 70.4% |
| SAN MARCELINO, ZAMBALES Mt. Pinatubo Eruption | 35 | 54.3% | 60% | 60% |
| ORMOC CITY Flood | 41 | 95.1% | 87.8% | 95.1% |
| TARLAC Earthquake | 95 | 37.9% | 50.5% | - |
| Mt. Pinatubo Eruption | 32 | 18.8% | 63% | 28.1% |
| BAGUIO CITY Earthquake | 104 | 34.6% | 48.1% | - |
| PAMPANGA Mt. Pinatubo Eruption | 110 | 50% | 64.5% | 60.9% |
| ZAMBALES Mt. Pinatubo Eruption | 60 | 23.3% | 36.7% | 55% |

fear. The scores 21-25 indicated more severe reactions, especially interferences in thinking, while no. 26-30 scores indicated the occurrence of disaster-related experiences of flashbacks emotions and actions when reminded of the disaster. At least 70-90% of victims showed positive scores in these items. They were also considered as high risk for psychosocial problems.

These SRG scores were further evaluated among the disaster victims of the volcanic eruption in Tarlac, (Table 3). The SRQ was administered within one month, two months, and nine months later. The victims in the two-month category were actually health workers who, although one month earlier showed positive scores, were this time better organized in the execution of their work schedules and had therefore regained relief and some degree of control. The victims seen one month and nine months later were those in the evacuation centers. Table 3 shows that psychosocial reactions were present one month and even nine months later. The victims rated high the fact that their daily work suffered. They felt tired all the time; they were nervous, tense, and worried, they had physical symptoms of headaches, uncomfortable feelings in their stomach, bad sleep and poor appetite; they had difficulty making decisions and enjoying their daily activities. They could not think clearly, experiencing interferences in their thinking. They had flash-backs of what had happened to them. They felt bad when in situations that re-minded them of the disaster, making it a point to stay away.

Table 3. Psychosocial Reactions After the Volcanic Eruption
(Results from a Self-Report Questionnaire in Tarlac
one, two, and nine months after the eruption)

| Tarlac | One Month After (n=219) | Two Months After (n=32) | Nine Months After (n=326) |
|---|---|---|---|
| Daily work suffering | 90.0% | 12.5% | 71.2% |
| Feel tired all the time | 84.9% | 34.4% | 74.5% |
| Feel nervous, tense or worried | 83.1% | 37.5% | 73.0% |
| Uncomfortable feelings in the stomach | 80.4% | 25.0% | 54.9% |
| Difficulty to enjoy daily activities | 79.9% | 6.3% | 66.0% |
| Unable to play a useful part in life | 77.6% | 3.1% | 43.3% |
| Difficulty to make a decision | 77.2% | 6.3% | 63.8% |
| Often have headaches | 73.1% | 12.5% | 73.3% |
| Feel unhappy | 72.1% | 3.1% | 72.1% |
| Easily frightened | 70.8% | 34.4% | 66.0% |
| Sleep badly | 65.8% | 21.9% | 49.7% |
| Poor appetite | 65.3% | 0.0% | 63.2% |
| Have trouble thinking clearly | 63.9% | 9.4% | 50.9% |
| Cry more than usual | 63.5% | 3.1% | 57.1% |
| Hands - shaking | 43.4% | 6.3% | 46.0% |

*(continuation. . . . Table 3)*

Psychosocial Reactions After the Volcanic Eruption (Results from a *Self-Report Questionnaire* in Tarlac one, two, and nine months after the eruption)

| *TARLAC* | *One Month After (n = 219)* | *Two Months After (n = 32)* | *Nine Months After (n = 326)* |
|---|---|---|---|
| *ITEMS 21 TO 25* | | | |
| Noticed interference in thinking | 65.3% | 0.0% | 49.4% |
| Hear voices without knowing where they come from | 38.4% | 0.0% | 22.2% |
| Feel that somebody is trying to harm him in some way | 30.1% | 3.1% | 15.0% |
| *ITEMS 26 TO 30* | | | |
| Have flashbacks of what had happened | 80.8% | 18.8% | 77.6% |
| Feel bad when in situation that reminds him/her of the disaster | 79.0% | 6.3% | 68.1% |
| Make a point to stay away from place that reminds of the disaster | 57.1% | 15.6% | 57.7% |

The psychosocial stressors experienced by the Mt. Pinatubo victims are shown in Table 4. Among the highlanders, loss of their "land" and loved ones have been consistently expressed. This stress has been especially aggravated by the fact that as a consequence of the eruption, many of their elders have died, thus weakening their support system. They have become suspicious of the lowlanders with whom they often have to live in new resettlement sites.

As earlier mentioned, most of the victims of the disaster are those who, even in pre-disaster conditions, live in socially disadvantaged conditions of poverty, political instability, demoralization, and inadequate health and social services. They basically have a victimized sense of themselves. They do not have relatives they could go to and who can offer them support following the destruction of their homes and their livelihood. They, therefore, have to be relocated in other geographic areas, and a majority may have to live in temporary camps for prolonged periods. They are the ones who have to cope with psychosocial stressors listed among the lowlanders in Table 4. The same table also identifies the psychosocial stressors of service providers. The communities in general suffered to a significant degree the loss of the social support systems as well as the unavailability of basic needs for the victims – the general population.

Table 4. Psychosocial Stressors of Mt. Pinatubo Victims

HIGHLANDERS
- loss of "land"
- loss of loved ones
- inappropriate relief goods
- unavailability of traditional medicines
- unacceptable medical treatment

LOWLANDERS
- loss of loved ones
- destruction/loss of property
- loss of livelihood
- loss of jobs
- poor living conditions at evacuation sites
- repeated evacuations
- lack of/delay in provision of relief assistance
- uncertainty of situation/future
- persistent lahar threat
- cessation of normal daily activity
- temporary cessation of school

SERVICE PROVIDERS
- physical exhaustion
- role conflict
- organizational conflicts
- disorganization within/among agencies

COMMUNITIES
- loss of community social structure
- loss of social support system
- unavailable community leaders
- lack of/delay in provision of relief assistance

**Psychosocial Intervention, A Necessary Component in Disaster Management[3],[24]**

A catastrophe becomes a disaster because it impacts on a human community. A disaster is therefore an event that can not be ignored because of the number of human lives that are lost or seriously affected. The efforts of evaluating it are based principally on its effects on the physical, psychological and social aspects of the lives of the people in the affected communities. These take into consideration the number of deaths or injured, the numbers who have lost their homes, properties and livelihood, and the numbers for whom food, clothing, and shelter must be provided. However, the more subtle, less obvious psychosocial effects cannot be

ignored in the total evaluation of these victims. How do they cope with the suffering? How do they progress in the tasks of recovery and rehabilitation? Do they accept the assistance being given? Do they resist the plans being made to help them recover? Do they have suggestions in planning their activities and community programs? Do they oppose the programs being planned because they have contrary beliefs? Is there denial of the problems in their communities, making them hazards to others? These psychosocial issues should be considered integral in disaster planning and management.

Psychosocial intervention should therefore be an integral component of disaster management. A framework for psychosocial intervention is presented in Table 5. Basic to this intervention is the psychosocial processing of victims.

Table 5. Framework for Psychosocial Intervention

1. **Psychosocial Processing (PSP)**

   1.1 **Critical Incident Stress Debriefing**
   1.2 **Multiple group intervention (Therapeutic)**
   1.3 **Action-oriented PSP**
   - psychological preparation
   - exploration of psychosocial implication - planning input
   1.4 **Team Building**
   - identification of leaders
   - decision making
   - empowerment of members
   1.5 **Community Organization**
   - building a support group in the community
   - building community-based crisis management
   - food for work
   1.6 **Psychosocial Intervention/Rehabilitation**
   (Activity-based groups)
   Children and Adults
   - sports, drawing, poetry

2. **Education and Information Dissemination**
   2.1 Disaster Orientation
   2.2 Disaster Preparedness

3. **Training in PSP for Trainors and Facilitators**

4. **Identification/Management of Psychiatric Morbidity**
   - by non-psychiatrists
   - referral/monitoring
   - psychiatric treatment (adults and children)

A major component of psychosocial processing is the critical incident stress debriefing (CISD) which aims at immediately helping the victims a) regain a sense of equilibrium through the ventilation of their thoughts and feelings about the critical event, b) identify their coping strengths and c) share these with others in planning for the forthcoming days as the disaster impacts on them and their communities.

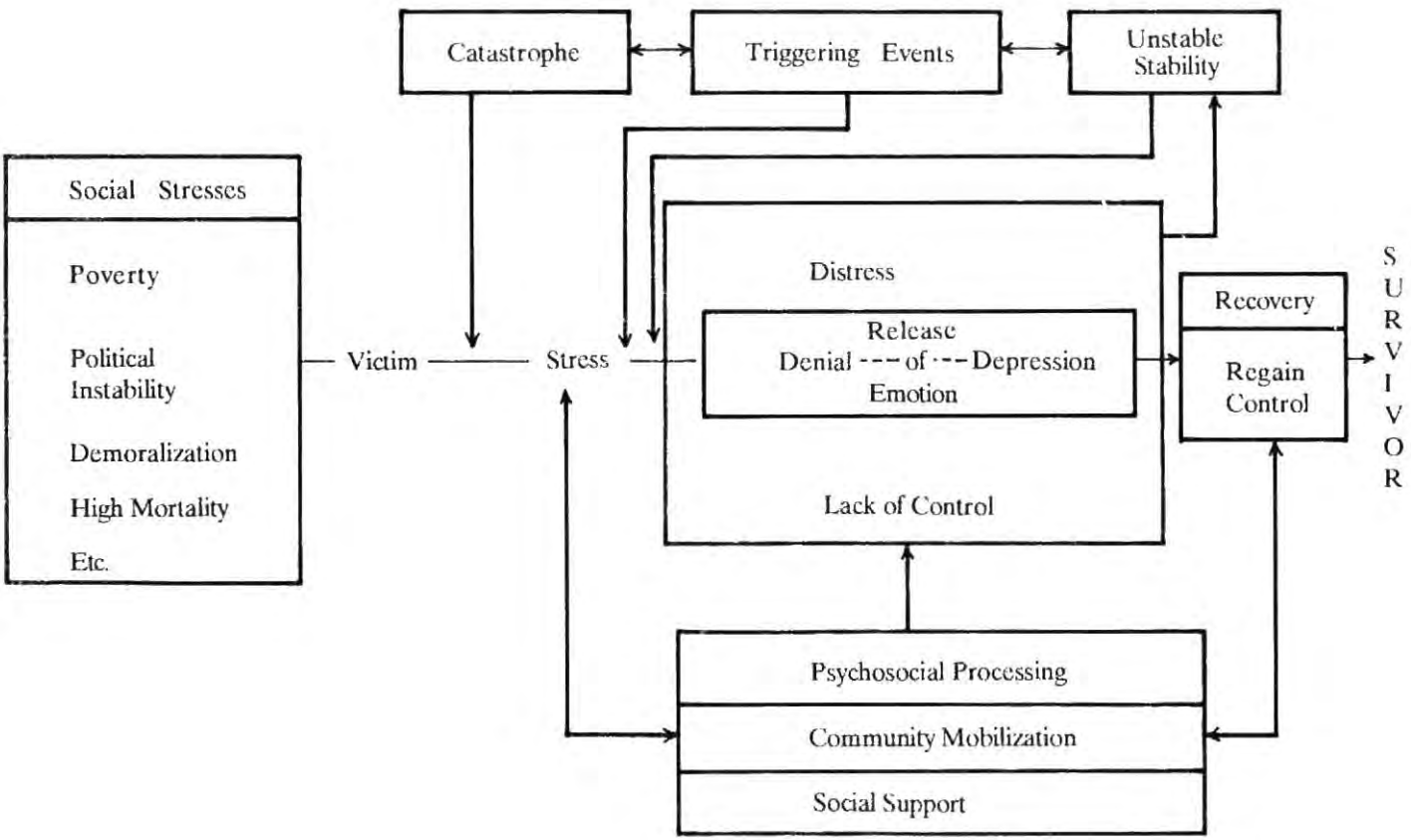
Debriefing may have immediate effects on the victims. It also has a potential advantage as an activity in which groups in the community could participate in planning and in finding solutions to the many problems they have to manage. Going through in detail sequence of events allows them time to find relief and to share with others the same experiences. The therapeutic effect of this sharing evokes positive feelings in the group, confidence in the realization that they can plan for themselves in spite of the adversities, and therefore develop a sense of empowerment at the recognition of their own capabilities.

Disaster workers need to acquire this psychosocial orientation and the skill to debrief the victims they serve. The skills to undertake this form of intervention can be learned by anyone who has an effective recognition that man has physical as well as psychosocial concerns in his life, especially when an adverse life event strikes him.

Disaster management that integrates a psychosocial aspect provides a broader dimension within which the victim can recover. Such an intervention is focused on the victim himself and the development of a feeling of control within himself even if the odds are against him. With psychosocial processing he recognizes a sense of power within himself and overcomes the victimized concept of himself. He rallies upon this power for recovery. He subsequently participates in his community's mobilization and the recovery of the necessary social supports. With these interventions, no catastrophe, no disaster, and its uncertainties, can be that formidable. The victim has become a survivor. Not only that, the survivor himself is able to be involved in others and actively participate in the crucial efforts for the resumption of their daily life activities.

In conclusion, this transformation is illustrated in the following diagram, from Victim to Survivor:

## FROM VICTIM TO SURVIVOR



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