Disaster and Public Health

Component-I (A) – Personal Details

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Component-I (B) Description of Module

Items	**Description of Module**
Subject Name	Social Work
Paper Name	Fields of Practice in Social work
Module Name/Title	Disaster and Public Health
Module Id	
Pre-requisites<Expected to know before learning this module>	Some basic understand about what is mean by disaster, health and public health
Objectives	• Understand the concept of public health in disasters. • Understand the different health problems that arise after disasters. • Understand the impact of disasters on health services • Understand the need of mental health and psychosocial care after disasters
Key words	Health and Disaster, Health services, Hospital preparedness, Psychological care

DISASTERS AND PUBLIC HEALTH

INTRODUCTION

Disasters are one of the greatest threats facing human beings today. The impact of disasters in the recent years has increased manifold. Disasters result in loss of lives, damage to assets, disruption in functioning of various government departments, and serious damage to infrastructure. Among many problems posed by disasters, issues of public health are one of the most significant. Sudden-impact disasters cause widespread damage and death and may cause outbreak of epidemic diseases. Disasters and health are related in a number of ways. In the aftermath of disasters, governments face numerous health-related challenges from providing immediate relief to addressing the long-term health impacts of the population. Disasters with immediate impact such as earthquake cause a lot of injuries compared to floods or tidal waves; not all effects of disasters are direct, some are potential occurring at different times (Shoaf and Rottman, 2000). While the casualties that occur during the disaster require immediate medical care, diseases may develop over a period of time among displaced populations living in overcrowded conditions. In most cases, the affected people living in relief camps lack basic sanitation and hygiene, which give rise to diseases. Government, NGOs, INGOs try their best to provide medical care to disaster-affected population. In order to achieve effective results, proper strategies should be laid out to meet the needs of all sections of disaster-affected people.

3. LEARNING OUTCOMES

After reading the module you would be able to:

- Understand the concept of public health in disasters.
- Understand the different health problems that arise after disasters.
- Understand the impact of disasters on health services
- Understand the need of mental health and psychosocial care after disasters

4. HEALTH PROBLEMS DURING DISASTERS

4.1 Death and injuries

Immediate injuries and loss of lives are inevitable during disasters. Certain disasters result in immediate deaths of people as they provide very little time to react. Greater number of deaths pose problems with dead body disposal. Mass burial may give rise to an epidemic problem.

4.2 Social reactions

Panic strikes disaster-affected population. Spontaneous behaviour of the people often proves to be detrimental for the overall population. Rumors make situations worse and lead to unjustifiable medical actions after disasters.

4.3 Communicable diseases

This is not an immediate public health issue but disaster-affected people are at a high risk of contracting communicable diseases due to unsafe health and hygiene conditions. The displaced population, living in relief camps, is mostly at risk because of pressure on food, water supply, sanitation conditions, medical supplies etc. Fecal contamination of water and food is the main reason for spread of diseases. Conditions of heavy rains and floods increases the incidence of vector borne diseases (Pan American Health Organization, 2000).

Water, Sanitation and Hygiene priorities

- Facilities for people to excrete safely and hygienically.
- Protect water supplies from contamination.
- Minimum water for drinking, cooking and personal and domestic hygiene.
- Ensure that people have enough and clean water containers to collect and store water.
- Ensure that people have soap for hand washing.

4.4 Mental health issues

Disasters are stressful events that give rise to a number of mental health issues. Anxiety, neuroses, stress disorders etc. are quite common. Death of close family members put a lot of stress on the surviving members. Children who lose their parents especially are at a high risk of going into depression.

Post-traumatic stress disorder (PTSD)

Post-traumatic stress disorder (PTSD) is a mental illness in people who have suffered severe violence or abuse. These people have painful memories about the trauma and have difficulty in differentiating the real world from the unreal. PTSD is common in people remind them of the trauma as a way to stop the memories from coming back. Many people develop PTSD after disasters and conflicts.

4.3 Deficiencies

In case of disasters such as droughts, the health issues emerge over a period of time. In drought-affected areas, mortality may increase due to protein malnutrition or calorie malnutrition. Deficiency of certain vitamins like vitamin A may cause night blindness or xeropthalmia. Prolonged malnutrition may lead to increase in diseases and mortality.

Food Priorities

If the assessment reveals that the amount of food required for the affected population exceeds the availability, and the distribution of food has to take place for a longer period of time, it must be ensured that food is obtained from elsewhere in the country or abroad. An estimate should also be made for contingency.
The initial emergency distribution of food should be taken care of by the nationalgovernment or wholesaler stocks, or from international development agencies (e.g., World Food Program, NGOs). Potential donors should be advised of the eating habits and preferences of their affected populations. The need for special

infant foods (“baby foods”) and vitamins should be assessed for the long term.

5. IMPACT OF DISASTERS ON HEALTH SYSTEM

- **Infrastructure:**Disasters directly or indirectly affect the health infrastructure system. Earthquakes and sudden fires damage hospitals, thus limiting the capacity of the hospital staff to provide services.

- **Health staff:** The health staff is vulnerable to diseases, disability and death. They are at a risk of acquiring infections and being injured. They may also face psychological trauma due to illness or death of their colleagues.

- **Health information management:** Disasters lead to the collapse of health information management system and hence the inability to monitor health problems and status.

- **Medical supplies:** There’s always a dearth of medical supplies in disaster situations. Looting of medical supplies also increases. Disruption of roads, bad weather conditions and ill-management also breaks down the supply-chain management system, thus resulting in scarcity of drugs and medical equipment to treat the injured population.

- **Health financing:** The funds allocated for health are often diverted towards other sources such as defense. The increased healthcare cost increases the inaccessibility of people to healthcare.

6. HEALTH SERVICES

Health services play an important role during humanitarian emergencies. Immediately after disasters, police officers, fire personnel and health workers are involved in search and rescue and triage operations. The existing health facilities get overwhelmed due to a large number of casualties. The best way to overcome the challenges is to strengthen the local health system. Situations in which the local

health system is not functioning, parallel health systems may be established, which align with the host government's protocols and policies.

6.1 Role of emergency health services in disasters

The number of casualties or injured requiring immediate medical care varies with disasters. The number of victims requiring immediate assistance during disasters such as earthquakes is high as compared to other disasters. While the local healthcare services provide immediate help, external aid arrive when the situation becomes unmanageable. Medicines, equipment, mobile hospitals etc. are flown in by foreign humanitarian aid workers.

Since the demand for curative care is highest during the emergencies, priority should focus on preventive measures that can improve the health of the affected population. Otherwise, a delay in the immunization or disease-control measures may lead to outbreak of diseases such as measles, cholera, typhoid etc. (Abdallah and Burnham, ND). Hence, a coordination between curative and preventive healthcare services should exist. The relief and response should be organized into three levels of preventive health measures to minimize the mortality and morbidity:

- **Primary Prevention** aims to prevent thetransmission of diseases to populations by promoting healthy practices, adopting public health measures to reduce the risk factors that the population is exposed to and by promoting medical actions.
- **Secondary Prevention** is identifying and treating a diseased person to prevent the infection from progressing to a more serious complication or death. This can be done by alleviating symptoms from diseases.
- **Tertiary Prevention** aims to reduce permanent damage from disease or injury.

6.2 Managing a mass casualty incident

A mass casualty incidentgives rise to a number victims that overwhelms the capacity of the local health services. The available resources are used in the best possible

manner. The patients are sorted and prioritized for medical attention, a process called *triage*. It is carried out so that the burden on health facilities is reduced. The ones who have the least chance of survival are treated at the end. Victims with minor injuries receive care first so that health facilities are freed to attend to more critical tasks. By properly managing a mass casualty incident, the loss of life or disability of disaster victims could be minimized by meeting the needs of those most likely to benefit from services first.

6.3 Emergency Health Services Planning

Due to limited resources during emergency period, planning is important. In order to plan well, information has to be gathered by carrying out a needs assessment. All concerned groups such as the governments at all levels, health professionals, experts should be involved. A proper assessment will reveal whether external assistance is necessary and help design the strategies for the target groups. The strategies should be shared with the concerned authorities and also the target groups, for their feedback.

Rapid Initial Assessment

The aim of Rapid Initial Assessment (RIA) is to provide precise inputs for planning the required interventions. Its main objectives are to know the magnitude of the impact, to identify the target groups, to know the immediate health priorities, to identify the potential public health problems and to understand the availability of resources. RIA is done ideally within 3-4 days after the disaster event have occurred by a multi-disciplinary team with local representation.

Before starting RIA, a few things have to be done – (i) the background details have to be collected (demographic details, geographical location, presence of other hazards, resources etc.) (ii) inter-agency coordination has to be established (iii) the methodology has to be worked out (iv) the timeline has to be set (v) the expenses, logistics and safety have to be estimated and assessed and (vi) the responsibilities have to be assigned. The information may be collected by quantitative or qualitative methods such as interviewing key informants, reviewing the existing records, surveys etc. Some of the possible sources and methods of data collection for RIA

are presented in the table below.

Table: Sources of information and method of data collection

Source	Information	Method
Affected population	Background information, pre-/post-disaster community health information, environmental conditions, needs and available resources, future prospects	Surveys, observation, mapping, interviews, focus groups
Host government authorities	Background information, demographic profile of local and displaced population, needs and available resources, future prospects	Mapping, interviews, review census and survey reports (e.g., Demographic Health Survey)
Health authorities (local/central MOH)	Health status, environmental conditions, health policies, needs and available resources	Interviews, review registers, surveys, reports
Health facilities (MOH, private, NGO)	Health status of local (and perhaps displaced) populations, needs and available resources	Observation, interviews, review registers, surveys, reports
Humanitarian agencies (international & local), multilateral agencies (e.g., UN), media, internet web sites	Background information, pre-/post-disaster demographic and health status data, needs and available resources, future prospects	surveys (e.g., Demographic Health Survey), situation reports

Source: The Johns Hopkins and IFRC Public Health Guide for Emergencies, pp. 4-13

7. HOSPITAL PREPAREDNESS IN DISASTERS

All hospitals should have a disaster management plan in place. The plan should be

guided by the following principles:

- **Predictable:** The plan should have a predictable chain of management.
- **Simple:** The plan should be operationally simple.
- **Flexible:** The plan should be executable.
- **Concise:**The plan should specify various roles and responsibilities.
- **Comprehensive:**It should be comprehensive enough to look at the network of various other health care facilities.
- **Adaptable:**There should be enough space for adaptability.
- **Anticipatory:** The worst-case scenario should be kept in mind while preparing the plan.

7.1 Phases of Hospital Disaster Plan(GOI-UNDP DRM Programme[2002-2008])

- **Pre-disaster phase:** Most of the assessment and planning is done in the pre disaster phase, the hospital plans are formulated and then discussed in a suitable forum for approval. The plan should be documented and made available in all areas of the hospital. The staff should be trained to use the disaster plan.
- **Disaster phase:** In this phase, the chain of command in the hospital is activated. The actual tackling of mass casualties happens in this phase.
- **Post-disaster phase:** This an important phase of disaster planning in which the activities of the disaster/ emergency phase are discussed and the inadequacies are noted for future improvements.

7.2 Hospital Activities during Disasters

At the time of disasters, hospitals are faced with the challenges of catering to the disaster-affected people. The main activities of hospitals during disasters are:

- Managing the patient load.
- Managing the ambulance services.

- Arranging the logistics for added burden.
- Managing the human resources.
- Dead body identification.
- Seeing to it that the labs and investigations are functioning properly.
- Communicating with the media and the family members of the injured being treated.
- Setting first-aid booths.
- Organizing blood donation.
- Networking with other hospitals and setting up a referral system

8. EMERGENCY MENTAL HEALTH AND PSYCHOSOCIAL SUPPORT

Although there is no accepted definition of mental health, people with sound mental health have some qualities such as ability to understand and respond to the daily challenges of life, to be able to express emotions and to be able to value relationships. Different factors such as environmental and biological, determine the mental wellbeing of people. Many stress factors related to work, illness, family issues etc., social unrest, and intolerable living conditions may result in physical and emotional upheavals.

It was not until recently that mental health and psychosocial care during disasters began to gain attention of aid workers. This happened because of an increase in the frequency of disaster events and trauma-affected populations. Mental health problems during disasters can be attributed to the following factors:

- **Loss of near and dear ones:** Disasters and conflict situations kill many people. At times, survivors would have lost an entire family. Such situations are traumatic and it takes time for people to cope with the loss of their near and dear ones. Death of parents or relatives leaves a deep impact in the minds of children.

- **Displacement:** People get displaced from their hearths and homes during disasters and conflict situations. Displaced populations are at a high risk of

mental health problems and need psychosocial support. Forced displacement is associated with a number of stressors such as loss of family members, property, homes; deprivation of family members; and trauma of death, killings, rape etc. Displaced population have to adjust to new surroundings; some are never able to return to their property. These can cause high level of stress.

- **Lack of basic needs:** When disasters strike or conflicts occur, societies are torn apart and people are deprived of the basic means of survival. Affected people are forced to live in over-crowded spaces with poor sanitation, limited access to water and food and health services. In the absence of these basic facilities, people lose their right to live with dignity, which in a way has a negative impact on people's mental condition.

- **Disruption of social ties:** Conflicts and disasters disrupt social and family ties. Societies in which relationship ties are very strong with families and communities, coping up with loss of these ties is extremely difficult. While women continue their roles as caretakers, men find it difficult to adjust without any occupation. This may give rise to problems of domestic violence and abuse.

- **Violence against vulnerable groups:** Displacement is associated with violence. Women and children who have lost their family members are especially vulnerable to violence. Rape, sexual abuse, molestation commonly take place in relief camps. These experiences result in psychological consequences.

8.1 Mental health assessment and evaluation

Intervention programs should be locally and culturally valid and should be evidence-based, beginning with the assessment of the existing mental health and psycho-social strategies. Mental health assessments begin with qualitative studies of the target population to get an overview of the local perceptions of the problems. This helps in designing the intervention programme and assessing its feasibility. Some of the essential prerequisites of designing mental health intervention strategies for

disaster and conflict-affected population are:

- **Establishing relationship with the community:** Any programme that is introduced to a community needs to first link with the affected community. The mental health workers shouldidentify and consult with community leaders, seek their advice, and include them in decision-making process.

- **Measuring need and resources:** The assessment team should be multi-sectorial. The assessment should help identify the unmet physical and psychosocial needs of the community.

- **Identifying local beliefs about mental illness:** Identification of local terms of mental illnesses is important. It is also important to identify traditional means of treating mental illness in the community.

- **Screening the general population:** It is important to check the entire population to identify the people with the greatest difficulty.

8.2 Intervention

- **Protect** survivors from further harm by creating a shelter for them and keep them away from traumatic stimuli (Young et al., ND)

- **Direct** the survivors in a kind and firm manner, away from the site of destruction, severely injured people and danger.

- **Connect** the survivors to the external world, to loved ones, to accurate information and to where they will find support.

- **Acute care,** by being with the survivors to help them manage grief and pain.

CONCLUSION

The impact of disasters on public health is considerable and it requires a lot of effort on the part of the local, state, national governments and international communities to cater to the health needs of the disaster affected people. Death and diseases are not easy to handle. Hence, a preparedness plan is of utmost importance to deal with the disruption that disasters pose. Having strategies in place, with roles defined and resources in place, might be useful in addressing the public health needs that arise after disasters. Coordination is at the heart of managing public health during disasters. Local government, hospitals, health experts, media should all work in tandem to cater to the needs of disaster survivors. Controlling the spread of infectious diseases is one aspect because under unsafe and unhygienic conditions in overcrowded settlements, diseases spread faster than anticipated. Hence, water, sanitation and hygiene are the most important sectors that need immediate attention after disasters. The international community has arrived at certain standards that are required to be followed by donor agencies and governments to address these needs of the people. Food and nutrition is another aspect that needs to be taken care of post disasters. Yet another aspect is addressing the psychosocial needs of people affected by disasters and conflicts. Loss of any kind is not easy to cope with. Hence, people affected by disasters and conflicts are in utmost need of psychosocial care and support. Hence, a multi-pronged and well-coordinated approach has to be adopted to meet the public health needs of people after disasters.