



Public Health Vulnerable Situation: State of Tribes in Cyclones

Bandela Anil Prasad

School of Studies in Social Work, Bastar University, Jagdalpur, CG, INDIA

Available online at: www.isca.in

Received 25th February 2013, revised 24th March 2013, accepted 8th April 2013

Abstract

The health of any person is based on the public health interventions, which are carried out by the State. These interventions should address the common diseases to critical illness. Public health is nothing but, the practice of preventing disease and promoting good health within groups of people, from small communities to entire countries. The goal of public health is to increase the capacity of communities to plan, implement, and evaluate comprehensive, community-based health promotion programs targeted toward priority health problems. Public health consequences associated with tropical cyclones include storm-related mortality, injury, infectious disease, psychosocial effects, displacement and homelessness, damage to the health-care infrastructure, disruption of public health services, transformation of ecosystems, social dislocation, loss of jobs and livelihood, and economic crisis. The challenge of addressing the natural disaster's healthcare needs of the population necessitates priority attention and action from all individuals and organizations working to improve Public health during disaster. The relationship between climate change and human illness is complex and difficult to assess. Human health impacts directly related to weather or climate include changes in the frequency and intensity of temperature extremes and severe weather events.

Keywords: Public health, cyclones, tribes.

Introduction

Public health consequences associated with tropical cyclones include storm-related mortality, injury, infectious disease, psychosocial effects, displacement and homelessness, damage to the health-care infrastructure, disruption of public health services, transformation of ecosystems, social dislocation, loss of jobs and livelihood, and economic crisis. These outcomes disproportionately befall developing nations, and human factors strongly influence the observed disparities¹. Natural disasters have been a major public health problem throughout the history of humankind. They are defined as catastrophic events with atmospheric, geological or hydrological origins and include earthquakes, volcanic eruptions, landslides, tsunamis, floods and drought². There are about 450 to 800 major emergencies or disasters per year worldwide affecting the community socially and economically^{3,4}. The consequences of natural disasters on the people are often amplified by socio-economic conditions. This risk may be increased risk of communicable diseases. The natural disasters particularly storms and flood, can create very important public health problems.

Health and socio-economic developments are so closely intertwined that is impossible to achieve one without the other. The challenge of addressing the natural disaster's healthcare needs of the population necessitates priority attention and action from all individuals and organizations working to improve Public health during disaster. The worst conditions of disaster are causing tribal people more mortality and morbidity. The tribal people are more susceptible to disasters due to their living

conditions. Living in such appalling conditions has severe bearing on health of the tribal population. Infectious diseases, which are a major cause of morbidity, mortality and disability, affect tribal populations disproportionately. Infectious disease does not recognize boundaries, it spread nook-ends and affects the health status of the tribes and moreover it causes the impoverishment. This period leads to double jeopardy.

The relationship between climate change and human illness is complex and difficult to assess. Human health impacts directly related to weather or climate include changes in the frequency and intensity of temperature extremes and severe weather events. Among all the disasters Tropical cyclones are causing utmost damage to human life. Tropical cyclones are low-pressure weather systems that develop over the warm waters of the oceans, typically between the latitudes of 30°N and 30°S⁵. Tropical cyclones cause a range of public health consequences, including mortality, injury, and infectious diseases⁶.

Impact of Tropical Cyclones on Public Health: The health of any person is based on the public health interventions, which carried out by the State and NGOs during disasters. These interventions should address the common diseases to critical illness of the Tribal communities who are very vulnerable. Public health is nothing but, the practice of preventing disease and promoting good health within groups of people, from small communities to entire countries. The goal of public health is to increase the capacity of communities to plan, implement, and evaluate comprehensive, community-based health promotion programs targeted toward priority health problems. Public

health facilitates to assess and improve the health and quality of life in their communities. Surroundings they live are very critical to manage the good public health during the cyclones since their living structures and habits are inadequate.

Tribal poor are likely to be disproportionately vulnerable during disasters because they are more likely to have chronic illnesses; functional limitations and traditional restrictions. Tribal people are unaware of preparedness due to their inhibitions and unawareness. They are very weak in coping too. To address this community based disaster management (CBDM) plans need to inculcate among the tribes. Community level preparedness is important, because people at the community level are first responders in emergencies⁷. Preparedness is the key to preserving human health in the wake of Tropical cyclones. Although most disasters are unpredictable, the impact of disasters can be mitigated through strengthening the response capacity of tribes at risk.

The public health impacts of disasters on populations and leads to a state of vulnerability. Primary the tribes are very poor in managing their regular health during regular days; during the Tropical Cyclones their problems are inexpressible. It looks at the social, political, economic and cultural factors that create vulnerabilities. Tropical Cyclone is associated with an increased risk of infection; however this risk is low unless there is significant population displacement and/or water sources are compromised. The major risk factors for outbreaks associated with cyclones are the contamination of drinking-water facilities. There is an increased risk of infection of water-borne diseases contracted through direct contact with polluted waters, such as wound infections, dermatitis, and conjunctivitis, and ear, nose and throat infections.

Tropical Cyclones may indirectly lead to an increase in vector-borne diseases through the expansion in tribal area. Their living conditions are unique and unhygienic. Standing water caused by heavy rainfall can act as breeding sites for mosquitoes, and therefore enhance the potential for exposure of the disaster-affected tribal population to infections such as dengue, malaria and filarial. Cyclones may initially flush out mosquito breeding, but it comes back when the waters recede. The lag time is usually around 6-8 weeks before the onset of a malaria and filarial epidemic.

Public health is uniquely placed at the community level to build human resilience to climate-related disasters. "By focusing on vulnerability and the ability of individuals and communities to recover (resilience), vulnerability reduction places the individuals at risk at center stage and tasks the responsible authorities with enhancing social equity and promoting community cohesiveness, alongside a heightened sense of individual responsibility." By promoting safety and health, public health works to reduce the pre-existing burden of disease, build social capital, and strengthen community resilience to a wide range of health hazards, including extreme weather events.

Community public health and medical institutions can play an active part in reducing human vulnerability to climate-related disasters through promotion of "healthy people, healthy homes and healthy communities." The State should concentrate on the building capacities of the communities to combat natural disasters and create awareness on the Public health issues.

Public health concerns do not stop at the relief point, but continue through the recovery phase. Following authorities such as local water authorities, Health departments, and Electricity and Public Distribution System officials provide the guidance to manage the after event of tropical cyclone. After the tropical cyclone there was much debris and residuals are seen in the tribal villages. Population displacement caused by tropical cyclone can result in overcrowding in resettlement areas, raising the risk of transmission of certain communicable diseases. Most of the people succumb to Respiratory Tract infections and gastroenteritis. The health department must concentrate on these communicable diseases after the affect of tropical cyclone.

The study: The Present study was undertaken to determine community perceptions regarding preparedness and response to Tropical Cyclones in tribal areas. There are 5 tribes (Gond, Muria, Bhatra, Dhruva and halba) are living in Bastar region among these tribes Muria tribe was selected due to their living conditions and poor economic conditions. The Muria tribe community is very backward and unaware of the present trends and usually they live in the midst of the dense forest. If disaster strikes their problems are uncountable and lead to medical emergency. Data from both secondary and primary sources are collected for the study. The data was both qualitative and quantitative in nature. The secondary data was collected from the Government agencies, civil societies those who were engaged in promotion of Public Health and Sanitation. Extensive primary data were generated through the process of consultation at the grass roots and other sources.

The study carried out from the perspective of Muria Tribe in response to Public Health during tropical cyclone. The study covered a range of families and Civil Society Organizations (CSOs) and their interventions in the managing disasters and addressing the public health interventions during the tropical cyclones. The researcher interviewed 200 families spread over in 5 Villages (Banpuri, Parsaguda, Raniguda, Ammabal, and Badepara) in Bastar Block, Chhattisgarh.

Objectives for the Study: i. To assess the knowledge levels of Muria Tribe regarding Natural disasters, ii. To study the trends and consequences of Muria in relation to Cyclones. iii. To find out the disaster preparedness, response, reconstruction and mitigation strategies, iv. To evaluate the major political, economic, social and cultural factors which affect the public health of Muria Tribe during disasters. v. To discover the factors effecting Public Health during disasters. vi. To examine the levels of peoples engagement or participation in the during relief activities and lastly. vii. To make suggestions, if any, for policy and practice.

Methodology

Research Tools: For the purpose of the study, the researcher conducted in-depth interviews with families. A structured schedule for families were designed and administered. The investigator conducted 2 focused group discussions from the two villages. The SHG president, secretary, members and non members were made to sit in an angular shape and the investigator assumed the role of a moderator. Certain issues such as Public health, Preparedness, loss, mitigation, participation in relief and coping mechanisms were discussed and the opinions of the members were elicited. The study had been conducted in June and July 2012.

Results and Discussion

Findings of the Study: It can be seen from the table-1 that a majority of the subjects (64.0%) were male and the rest were female. A majority of the respondents i.e. 65.0 per cent was in the most productive age group between 25 and 35 years. Respondents (35.0%) in the age group of above 35 were also found. It was found that 58.0 per cent had completed high school education. On the other, a significant number (31.0%) were illiterate. A few (11.0%) had completed intermediate.

Table-1
Social Characteristics

Variable	Per cent (n=200)
Gender	
Female	36.0
Male	64.0
Age (in years) Mean=(32.5) SD=(10.96)	
< 25	35.5
25-35	29.5
35-45	21.0
45-55	12.0
> 55	2.0
Education	
Illiterate	31.0
1-10 th	58.0
Intermediate (10+)	11.0

Family Details: It can be seen from the table-2 that a majority of the respondents (78.0%) were married and the remaining (21.0%) were unmarried. As regards the family size 54.5 per cent of the respondents were having 4 persons in the family and little over one-fifths (23.5%) were having 3 persons. A few (10.5%) were having 5 persons in the family, however. The mean size of the family came to be 3.7

Occupation and Income of the Respondents: The above table-3 revealed that a little less of fifty per cent of the respondents was daily labourers. More than one-fourth of the respondents were home makers (28.5%). A sizeable number of the female respondents were found to be home makers (28.5%). As and a significant number of respondents (16.5%) were Fire Wood and

Forest Products collection. As regards the earning levels, a majority of the respondents (73.0%) were earning less than Rs 2000/- a month. The rest were from different earning levels.

Table-2
Marital status and Size of the Family

Variable	Per cent (n=200)
Marital status	
Married	78.0
Unmarried	21.0
Divorced	1.0
Size of the family Mean=(3.665) SD=(0.8734)	
One	1.5
Two	9.0
Three	23.5
Four	54.5
Five	10.5
Six	1.0

Table-3
Occupation and Income of the Respondents

Variables	Per cent (n=200)
Occupation	
Petty Business	5.5
Daily Labor	49.5
Fire Wood and Forest Products Collection	16.5
Home Maker	28.5
Income	
Less than 2000	73.0
2001 to 3000	18.5
3001 to 5000	8.5

Details of Housing and facilities: The table-4 states that 82.5 per cent of the respondents were living in their own houses and 17.5 per cent were residing in rented houses. It was noted that the respondents live in different types of houses such as Reinforced Cemented Concrete Structures (RCCS) (34.0%) and 15.5 per cent of the respondents each were living in tiled respectively. An overwhelming number of respondents (50.5%) are living in hutment made with palm leaves and mud walls.

Table-4
Nature and type of Housing

Variable	Per cent (n=200)
Nature of tenement	
Own	82.5
Rented	17.5
Type of House	
Reinforced Cemented Concrete Structures (RCC)	34.0
Tiled	15.5
Hutment	50.5

Awareness on Natural Disasters & Preparedness: The below table-5 depicts that, a majority of the number of respondents (94.0%) stated that they were aware of natural disasters. As regard to Disaster Preparedness 86.0 per cent of the respondents stated that they were unaware of disaster preparedness strategies.

Table – 5
Awareness on Natural Disasters

Variable	Per cent (n=200)
Awareness	
Yes	94.0
No	6.0
Preparedness	
Yes	14.0
No	86.0

Knowledge on Public Health: The data reveals that a significant number of respondents (83.0%) opined that they did not have knowledge on public health. As regard to diseases after cyclone more than two fifths of the respondents (43.0%) stated that Malaria was more prevalent after cyclone. Common fevers (18.0%), Diarrhea (17.0%) and Respiratory Problems (12.0%) in that order.

Table – 6
Knowledge on Public Health

Variable	Per cent (n=200)
Knowledge on Public Health	
Yes	17.0
No	83.0
Diseases after Cyclone	
Malaria	43.0
Diarrhea	17.0
Filarial Disease	3.0
Common fevers	18.0
Typhoid	7.0
Respiratory Problems	12.0

Losses during Tropical Cyclone: The table-7 accentuated that a majority of the respondents (76.0%) expressed they were lost asserts due to tropical cyclone and rest of the respondents (24.0%) negated. As regard the type of losses 39.0 per cent of the respondents stated that they lost fruit plants (Horticulture Crops) and 26.0 per cent of the respondents stated that they lost crops. Houses (19.5%) and Food grains (11.5%) in that order.

Table – 7
Losses during Tropical Cyclone

Variable	Per cent (n=200)
Losses during Cyclone	
Yes	76.0
No	24.0
Type Losses	
Houses	19.5
Crops	26.0
Fruit Plants	39.0
Near and Dear	2.0
Food Grains	11.5
Others	2.0

Losses during Tropical Cyclone

Table-8
Losses during Tropical Cyclone

Variable	Per cent (n=200)
Losses during Cyclone	
Yes	76.0
No	24.0
Type Losses	
Houses	19.5
Crops	26.0
Fruit Plants	39.0
Near and Dear	2.0
Food Grains	11.5
Others	2.0

Satisfaction regarding Mitigation interventions: The data accentuated that, a majority of the respondents (68.0%) expressed dissatisfaction towards mitigation interventions and more than one fifths of the respondents (23.0%) were satisfied.

Table – 9
Mitigation interventions

Variable	Per cent (n=200)
Satisfied	23.0
Dissatisfied	68.0
No Idea	9.0

Satisfaction Regarding Services by Health Department: Above data emphasizes the dissatisfaction (55.0%) regarding health department services during post cyclone and a more than 2 fifths of the respondents opined that they were satisfied.

Table-10
Satisfaction Regarding Health Department

Variable	Per cent (n=200)
Satisfied	42.0
Dissatisfied	55.0
No Idea	3.0

Discussion: The present study brought out varied findings. The tribes are very vulnerable due to their systems and structures. A majority of the respondents were male and significant number of respondents was in productive age group. The study revealed that, the poor economic backgrounds and their housing structures are also not adequate. Their occupations are unorganized and it's affecting their income. A majority of the respondents stated that they were aware of natural disasters and they were not prepared to combat them. The respondents expressed that Malaria is more prevalent in their areas after the cyclone hit. The respondents sated that they income levels are very stake after cyclone due to unavailability of work and engagement in the relief activities.

Public Health is a challenge after the cyclone and the health department was not acted properly in some cases. They did not give any medicines and treatments for them while they suffering

after cyclone. Consolidated efforts were not seen in response to disaster management and there was no Community Based Disaster Management plans within the community. The water was contaminated after cyclone and there were no mitigation methods. The debris was not cleared for the long time that was created more problems and given a chance to reproduce mosquitoes. There by the public health was damaged and many of the tribes were succumbed to health problems. Chlorination, fumigation and Bleaching were not used to prevent the communicable diseases to address them.

Recommendations: i. A Comprehensive Community Based Disaster Management (CBDM) plans are need for each and every Panchayat. ii. People should be trained to manage the Disasters. iii. Care giving groups should be formed and trained on Public Health to manage after Disasters. iv. A complete Functional Assessment has to make to give Relief, Rehabilitation and Recovery. v. Panchayats should be provided separate funds to combat Disasters.

Conclusion

The health impact of emergencies and crises can be substantially reduced if both national and local authorities and communities in high-risk areas are well prepared and are able to reduce the level of their vulnerabilities and the health implications of their risks. Tropical Cyclones are very dangers than other disasters; sometimes it damages the societies from the roots. Moreover, the loss is happening due to unpreparedness to combat any sort of disasters. The tribes are more susceptible to succumb to communicable diseases due to their living conditions. The tribes must be oriented on importance of Public Health and disaster management

techniques. Generally speaking, those at the lower end of the economic and social scales lack the potential to control or mitigate many of the events that affect their lives. Because the increasing disparities in living standards across the tribes and within regions may greatly increase vulnerabilities, these are of concern to disaster planners.

The challenge is to put in place systematic capacities such as legislation, plans, coordination mechanisms and procedures, institutional capacities and budgets, skilled personnel, information, and public awareness and participation that can measurably reduce future risks and losses.

References

1. United Nations Development Programme, Reducing disaster risk: a challenge for development, New York, NY: John S. Swift Company, (2004)
2. World Health Organization (WHO), Communicable diseases following natural disasters, Risk assessment and priority interventions. WHO, Geneva, (2006)
3. Coppola D.P., Introduction to International Disaster Management, Oxford: Elsevier, (2007)
4. World Health Organization (WHO). Mass casualty management systems: strategies and guidelines for building health sector capacity, Geneva: WHO, (2007)
5. Malilay J. Tropical cyclones, The public health consequences of disasters. New York, NY: Oxford University Press, 207(27), (1997)
6. Williams J., The *Weather Book*. (2). Vintage Books, New York, NY. (1997)