



HEALTH ISSUES CAUSED BY NATURAL DISASTERS: AN EMPIRICAL STUDY OF AFFECTED POPULATIONS IN PRAKASAM DISTRICT OF ANDHRA PRADESH

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Abstract

Natural disasters have serious and multidimensional consequences for human health. Apart from causing injuries and loss of life, disasters may result in psychological stress, communicable diseases, chronic health complications, and disruption of healthcare services. The present study examines the prevalence of major health issues experienced by people due to natural disasters and analyses whether these health problems differ significantly across age groups. The study is based on data collected from 540 respondents. Descriptive percentages and one-way Analysis of Variance (ANOVA) were used for analysis. The findings reveal that stress was the most prevalent health problem, reported by 92.4% of respondents, followed by injuries and fractures (84.1%), skin diseases (63.9%), and eye problems (60.9%). ENT problems (31.7%) and hyper acidity (30.0%) were also reported by a considerable proportion of respondents. ANOVA results indicate statistically significant age-wise differences in hyper acidity, diabetes, heart diseases, joint pain, eye problems, ENT problems, stress, and skin diseases. However, injuries and fractures did not show a significant difference across age groups. The study highlights the need for integrated disaster-health preparedness, age-sensitive medical interventions, psychological support, sanitation measures, and effective emergency healthcare systems in disaster-prone communities.

Keywords: Natural Disasters, Health Issues, Stress, Injuries, Age Groups, Disaster Management, Public Health, ANOVA.

Introduction

Natural disasters are among the major threats to human life, health, livelihoods, and social well-being. Floods, cyclones, droughts, earthquakes, landslides, heat waves, and other disasters can cause widespread destruction within a short period. Their effects extend beyond immediate physical damage and often continue for months or years after the disaster. Communities affected by disasters frequently experience displacement, loss of property, disruption of livelihoods, shortage of food and drinking water, inadequate sanitation, and limited access to healthcare services.

Health is one of the most important dimensions of disaster vulnerability. During disasters, people may experience injuries, fractures, infections, respiratory problems, skin diseases, eye problems, and other physical conditions. At the same time, fear, uncertainty, displacement, loss of family members, financial difficulties, and destruction of homes and livelihoods may result in considerable psychological stress.

The health effects of disasters are not uniform among all sections of society. Children, elderly persons, persons with disabilities, people with chronic diseases, and economically vulnerable households may face greater difficulties in accessing healthcare and recovering from disaster-related health consequences. Age is therefore an important factor in understanding disaster-related health vulnerability.

The present study examines the major health issues experienced by respondents due to natural disasters and determines whether the prevalence of selected health problems varies significantly across age groups.

Objectives of the Study

The study was undertaken with the following objectives:

1. To identify the major health issues experienced by people due to natural disasters.
2. To assess the prevalence of physical and psychological health problems among the respondents.
3. To examine the prevalence of injuries, fractures, skin diseases, eye problems, and other health conditions following disasters.
4. To determine whether selected health problems differ significantly across age groups.
5. To suggest appropriate measures for improving disaster-related healthcare and preparedness.

Methodology

The study adopted a descriptive and analytical research approach. Data were collected from 540 respondents affected by natural disasters. Information relating to selected health problems was obtained through a structured research schedule. The health conditions examined in the study included hyper acidity, blood pressure, diabetes, heart diseases, lung-related problems, joint pain, eye problems, ENT problems, stress, skin diseases, and injuries and fractures.

The collected data were coded and analyzed using statistical techniques. Percentage analysis was used to examine the prevalence of different health problems. A one-way Analysis of Variance (ANOVA) was employed to determine whether the prevalence of selected health issues differed significantly among various age groups. The significance level was assessed using the reported *p*-values.

Table - 1

Prevalence of Health Issues Due to Natural Disasters

Sl. No	Health Problem	Yes	No	Total N=540
1	Hyper acidity	30.0	70.0	100.0
2	Blood pressure	06.9	93.1	100.0
3	Diabetes	08.3	91.7	100.0
4	Heart diseases	01.5	98.5	100.0
5	Lungs	11.7	88.3	100.0
6	Joint pain	20.4	79.6	100.0
7	Eye problems	60.9	39.1	100.0
8	ENT problems	31.7	68.3	100.0
9	Stress	92.4	07.6	100.0
10	Skin diseases	63.9	36.1	100.0
11	Injuries and Fractures	84.1	15.9	100.0
An average total percentage		37.4	62.6	100.0

The data on health problems experienced due to natural disasters reveal that a considerable proportion of respondents suffer from both physical and psychological health issues following disaster events.

Among the reported conditions, stress shows the highest prevalence, with 92.4% of respondents reporting that they experienced stress due to natural disasters, while only 7.6% reported no stress. This clearly indicates that psychological distress is the most widespread health impact of disasters.

Similarly, injuries and fractures are highly prevalent, with 84.1% of respondents reporting such problems. This suggests that physical trauma during disaster events is a major health concern in the affected areas.

Skin diseases (63.9%) and eye problems (60.9%) are also reported by a majority of respondents. These issues may be associated with contaminated water, poor sanitation, exposure to polluted environments, and prolonged contact with floodwater or debris.

A moderate level of prevalence is observed in ENT problems (31.7%) and Hyper Acidity (30.0%), indicating that nearly one third of respondents experience these conditions following disasters. Joint pain (20.4%) and lung related problems (11.7%) are reported by a smaller yet notable proportion of respondents.

Chronic conditions such as diabetes (8.3%), blood pressure (6.9%), and heart diseases (1.5%) show relatively lower reported prevalence in direct association with disasters. This may indicate that while these are existing health conditions, they are less frequently perceived as being directly caused by disaster events.

Overall, the average total percentage indicates that 37.4% of respondents report experiencing health problems due to natural disasters, while 62.6% report not experiencing such issues. However, the very high prevalence of stress, injuries, skin diseases, and eye problems highlights that natural disasters significantly affect both physical and mental health.

The findings demonstrate that natural disasters have a substantial impact on the health of affected populations, particularly in terms of psychological stress and physical injuries. These results emphasize the need for strengthened disaster related healthcare services, mental health support systems, and improved sanitation and medical interventions in disaster prone areas.

Table - 2

Age and Prevalence of Health Issues Due to Natural Disasters

ANOVA						
Health Issues		Sum of Squares	df	Mean Square	F	Sig.
Hyper acidity	Between Groups	14.969	34	.440	2.259	.000
	Within Groups	98.431	505	.195		
	Total	113.400	539			
Diabetes	Between Groups	3.454	34	.102	1.654	.013
	Within Groups	31.011	505	.061		
	Total	34.465	539			
Heart diseases	Between Groups	1.818	34	.053	4.453	.000
	Within Groups	6.064	505	.012		
	Total	7.881	539			
Joint pain	Between Groups	13.171	34	.387	2.629	.000
	Within Groups	74.422	505	.147		
	Total	87.593	539			
Eye problems	Between Groups	19.105	34	.562	2.593	.000
	Within Groups	109.448	505	.217		
	Total	128.554	539			
ENT problems	Between Groups	22.015	34	.647	3.448	.000
	Within Groups	94.835	505	.188		
	Total	116.850	539			
Stress	Between Groups	5.575	34	.164	2.563	.000
	Within Groups	32.312	505	.064		
	Total	37.887	539			
Skin diseases	Between Groups	17.930	34	.527	2.497	.000

	Within Groups	106.653	505	.211		
	Total	124.583	539			
Injuries and Fractures	Between Groups	3.110	34	.091	.668	.926
	Within Groups	69.193	505	.137		
	Total	72.304	539			

The ANOVA analysis was conducted to examine whether the prevalence of health issues due to natural disasters significantly differs across various age groups. The results indicate that most health conditions show statistically significant differences based on age, except injuries and fractures.

Hyper acidity shows a statistically significant difference across age groups ($F = 2.259$, $p = .000$). This indicates that the occurrence of hyper acidity varies meaningfully among different age categories, suggesting that certain age groups may be more vulnerable to gastric problems following disasters.

Similarly, Diabetes demonstrates a significant variation ($F = 1.654$, $p = .013$), indicating that age plays an important role in the prevalence of diabetes related complications during disaster situations.

Heart diseases show a highly significant difference ($F = 4.453$, $p = .000$), which implies that older age groups may be more susceptible to heart related health problems after experiencing disasters.

The variable Joint pain also reveals a significant age based difference ($F = 2.629$, $p = .000$). This finding suggests that musculoskeletal issues are more prevalent among certain age groups, particularly older respondents.

Eye problems ($F = 2.593$, $p = .000$) and ENT problems ($F = 3.448$, $p = .000$) display statistically significant differences across age groups. This indicates that environmental exposure during disasters affects age groups differently.

In terms of psychological impact, Stress shows a significant difference ($F = 2.563$, $p = .000$), suggesting that stress levels vary across age categories, possibly due to differences in coping capacity, responsibilities, and vulnerability.

Likewise, Skin diseases ($F = 2.497$, $p = .000$) demonstrate significant variation across age groups, which may be linked to differences in immunity, hygiene conditions, and exposure levels.

However, Injuries and Fractures ($F = .668$, $p = .926$) do not show a statistically significant difference across age groups. This indicates that physical injuries during disasters affect individuals similarly, regardless of age.

The analysis clearly shows that age significantly influences the prevalence of most health issues caused by natural disasters, including hyper acidity, diabetes, heart diseases, joint pain, eye problems, ENT problems, stress, and skin diseases. These findings suggest that age is an important determinant of disaster related health vulnerability.

In difference, injuries and fractures do not vary significantly across age groups, indicating that immediate physical trauma impacts all age categories relatively equally. The results emphasize the need for age specific health interventions and targeted medical support in disaster prone communities.

Recommendations

Based on the findings, the following recommendations are suggested:

1. Strengthen disaster preparedness: Health departments should develop comprehensive disaster-health preparedness plans at local and community levels.
2. Provide emergency medical services: Adequate trauma-care facilities, ambulances, first-aid centres, and trained medical personnel should be available in disaster-prone areas.
3. Integrate mental health services: Psychological counselling and mental health support should be incorporated into disaster relief programmes.
4. Ensure clean drinking water: Emergency water purification and safe drinking-water facilities should be provided immediately after disasters.
5. Improve sanitation: Temporary shelters should have adequate toilets, waste disposal systems, bathing facilities, and hygiene provisions.
6. Ensure continuity of chronic disease treatment: Adequate supplies of medicines for diabetes, blood pressure, heart diseases, and other chronic conditions should be maintained during emergencies.
7. Develop age-sensitive interventions: Elderly and medically vulnerable people should receive priority during evacuation, healthcare delivery, and rehabilitation.
8. Conduct health awareness programmes: Communities should be educated about hygiene, disease prevention, stress management, and emergency health practices.
9. Strengthen disease surveillance: Local health authorities should monitor outbreaks of communicable and environmentally related diseases following disasters.
10. Promote community participation: Local communities, self-help groups, volunteers, and civil-society organizations should be involved in disaster preparedness and health response activities.

Conclusion

Natural disasters create a complex health burden involving physical injuries, environmental health problems, chronic conditions, and psychological distress. The present study of 540 respondents demonstrates that stress, injuries and fractures, skin diseases, and eye problems are particularly prominent health consequences of disasters. The prevalence of stress at 92.4% highlights the importance of recognizing mental health as an integral component of disaster management rather than treating disasters only as physical emergencies.

The ANOVA findings further demonstrate that age is significantly associated with several health problems, including hyper acidity, diabetes, heart diseases, joint pain, eye problems, ENT problems, stress, and skin diseases. However, injuries and fractures did not show significant age-wise variation, suggesting that physical trauma may affect people across age categories relatively uniformly.

The study therefore emphasizes the need for a comprehensive, preventive, and age-sensitive disaster-health management system. Effective disaster preparedness should combine emergency medical care, psychological support, disease prevention, sanitation, safe water, chronic disease management, and targeted support for vulnerable populations. Strengthening these measures can reduce the health consequences of disasters and improve the resilience and recovery capacity of affected communities.

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