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Preparedness of Disaster Management in Ghana

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ABSTRACT

Disasters cause a lot of harm to properties and loss of lives. Disaster management and preparedness is very important as we know that not all disasters can be avoided. Therefore, a systematic review of peer-reviewed papers on disaster preparedness in Ghana was conducted. The aim of this review study was to identify the factors that influence preparedness of disasters, aimed at informing policy towards disaster management in Ghana. A total of 21 papers were reviewed, 4 study populations namely; Household/Community, Library staff, Health workers and Public/Governmental Bodies and 7 factors that influence preparedness were identified as follows: Educational level, Financial, Knowledge/Training, Cooperative/Managerial Social, Health and Physical. The results showed that Knowledge and Training was the major factor that influenced preparedness of disaster management followed by Cooperative and Managerial factors. Governmental Bodies, NGOs and Private Institutions are recommended to make disaster management equipment affordable and accessible. Also, institutions should be set up to offer trainings on disaster management.

Keywords: Disaster, Disaster preparedness, Disaster management, Natural disasters, Man-made disasters

1 Introduction

A disaster is a highly destructive occurrence that results from natural, technical, or societal causes and has negative effects on people's lives (Perry, 2004). According to Asamoah et al (2023), a disaster can also be a major emergency, a confluence of circumstances that usually prevents an organization from carrying out its mission, sometimes for an extended period of time.

Drought, wildfires, earthquakes, tsunamis, windstorms, and floods are a few examples of disasters that can happen. These incidents all have the potential to significantly harm communities, uproot people, create financial loss, cause property destruction, result in fatalities, and inflict severe physical and mental harm (Ogbanga, 2015).

The effects of disasters vary depending on the magnitude of the event and any pre-plans in place to mitigate the impact of the event. A disaster's impact could result in both direct and indirect losses for a community. Physical destruction is considered a direct loss, as are economic and financial losses, as well as environmental degradation. Indirect losses include lost livelihoods and market share. Intangible loss also includes issues such as loss of life and personal injury (Abeka et al, 2020). In order to reduce these disaster risks, it is important to provide disaster management and preparedness measures which must be put in place and executed properly. Disasters of all kinds, both natural and man-made, have occurred in Ghana, among others, the Accra Sports stadium disaster in 2001 and the Takoradi market fire in 2004. The nation has suffered losses in both property and lives as a result of these disasters, but mitigation and preparedness measures are given less importance. Instead, the focus is on providing relief following the event. (Mensah-Bonsu, 2022).

Disasters can be an inconvenient and costly distraction for a government organization. As a result, disaster preparedness is essential before disaster strikes. Disaster management can help to prevent such events and, if they do occur, can help to mitigate their consequences. Disaster management entails anticipating and preparing for the unexpected, as well as dealing with disasters effectively if they occur. Disaster management is not the sole responsibility of one organization; rather, it necessitates the collaboration and coordination of experts/professionals and agencies from fields as diverse as social services, administration, logistics, and health (Asamoah et al, 2023).

Hence the aim of this review study is to identify the factors that influence preparedness of disasters, aimed at informing policy towards disaster management in Ghana.

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2 Methodology

2.1 Search Process

A computerized literature search was conducted on the Google Scholar database (Google Inc.; Mountain View, California USA) for studies on the factors that influence preparedness of disaster management in Ghana. The search was conducted by using keywords such as "disaster management in Ghana", "Disaster planning in Ghana", "Disaster knowledge in Ghana", "disaster preparedness in Ghana" and "factors affecting disaster management in Ghana".

2.2 Selection standards

Inclusion criteria: The studies had to be published in English and must have occurred or focused on Ghana. The studies had to investigate the factors that influence preparedness. The search included all studies such as descriptive, surveys, observational and cross sectional studies.
Exclusion criteria: Reviewed and unpublished studies were excluded from the search.

2.3 Screening of Articles

After the removal of duplicates and screening, 21 articles were included for the final review and analysis.

2.4 Process of coding data

The qualitative data obtained from the 21 articles were analysed using thematic analysis to analyse patterns or themes. The data were then coded according to key words which had similar meanings or synonyms. The data were then put into categories and after careful research on meanings and definitions, 7 major factors were identified namely educational level, Financial, Knowledge/training, Cooperative/Managerial, Social, Health and Physical (**Table 1**).

3 Results

A total 0f 21 articles were studied. Table 1 shows the characteristics of the studies which includes the type of disasters, the type of study population and the factor themes which were developed. Table 2 shows the descriptions of the factor themes derived from the studies that were observed. It also includes the Author and year of publication. Table 3 shows the factors that influence disaster preparedness in each study population.

Table 1 Characteristics of Included Studies

Variable	Number
Number of papers	21
Type of disaster	
Natural	
Public Health	2
Non-Public Health	8
Man-made	4
General disasters	7
Study population/Institutions	
Households/Community	9
Library	4
Health workers	5
Public/Governmental Bodies	3
Factor themes	
Educational level	2
Financial	5
Knowledge/Training	9
Cooperative/Managerial	7
Social	1
Health	1
Physical	6

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Table 2. Descriptive Components of Each Factor Theme from Study Participants

Author, Year	Factor themes/Categories	Factors observed
Abayomi et al, 2014	Managerial	Focussed on corrective measures rather than preventive measures
Abunyewah et al, 2020	Knowledge/Training	disaster information that is accessible, comprehensive and tailored to the needs of the public strongly influences intentions to prepare for disasters
Adamtey et al, 2015	Social, Financial, Physical	Negative perception that ambulances carry dead bodies, the demand for payment before patients are transported by ambulances, high cost of fuel, inadequate number of ambulances and the failure of emergency patients to pay the agreed hospital bills and services
Adinku et al, 2005	Physical, Managerial, Knowledge/Training	Presence of fire and water hazards; absence of disaster recovery plan for the library; staff and users did not have any training in the use of fire extinguisher and what to do during emergencies.
Adu-Gyamfi et al, 2021	Physical	According to estimates, any disaster that occurs in this area could affect more than twenty facilities and prevent access to healthcare because the health facilities are grouped together in a highly vulnerable enclave with a 20 km radius.
Afulani et al, 2021	Health	Fear of infection
Agyekum et al, 2017	Physical	there are inadequate escape routes in the buildings, no signage for fire escape routes, no compliance with fire bylaws in the operated buildings, only few firefighting equipment available and other conditions that make dealing with fire disasters a challenging task in the CBD
Ahenkorah-Marfo, M., & Borteye, E. M. (2010).	Knowledge/Training	inadequate training for members of staff.
Almoradie et al, 2020	Knowledge/Training	hazard assessment component is not well-practiced in Ghana and risk acceptance or lack of alternatives
Asamoah et al, 2018	Cooperative/Managerial, Financial	lack of coordination between the heads of public sector institutions, NADMO and PRAAD and inadequate budgetary allocation
Atakro et al, 2019	Knowledge/Training, Physical	Inadequate education and infrastructure readiness
Ayoung et al, 2016	Cooperative/Managerial,	institutional managers appeared unsupportive of disaster preparedness proposals from librarians. Furthermore, some staff participants did not see the need for disaster plans or mock drills.
Frempong-Kore et al, 2022	Knowledge/Training	staff training in disaster management

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		programmes was inadequate
Giago 2019	Financial	low level of individual economic capacity to withstand and recover from these disasters.
Mohapatra et al, 2012	Physical	Household built of concrete rather than mud and greater access to communication equipment. Suggests that they are better prepared against natural disasters.
Norman et al, 2012	Knowledge/Training	lack of competent medical and allied health personnel and adequate supplies and lack of general emergency preparedness programs.
Ntim-Amo et al, 2022	Financial, Knowledge/Training, Education level	perception of severe floods, high probability of flood occurrence, sense of worry, and threats to farm inputs and yield from flood disasters and off-farm employment, cooperative membership, access to credit, extension services, household income, and education significantly affected farmers' flood disaster adaptation behaviour.
Ohene et al, 2016	Cooperative/Managerial, Knowledge/Training	Poor community surveillance and poor awareness about the disaster
Oteng-Ababio, 2013	Cooperative/Managerial	low cooperative, collaboration and coordination with stakeholders,
Owusu-Sekyere et al, 2017	Cooperative/Managerial	weak institutional arrangements toward disaster risk prevention, preparedness, and mitigation, viewed as cross-cutting themes in disaster management.
Yin et al, 2021	Educational level, Financial	Years of formal education, High income leads to high preparedness

Table 3: Factors that influence preparedness in each study population

Study Population	Factors
Households/Community	Cooperative/Managerial, Knowledge/Training, Financial, Physical
Library staff	Physical, Knowledge/Training, Cooperative/Managerial
Health workers	Social, Financial, Physical, Health, Knowledge/Training
Public/Governmental Institutions	Cooperative/Managerial, Financial

4 Discussion

4.1 Characteristics of Studies observed

From table 1 it can be seen that a large number of studies focused more on natural disasters which are not caused by health issues for example fires, flood, tsunamis and many more. This means that Ghana is normally faced by non-public health natural disasters and hence a majority of preparedness should target these disasters. Also households were more studied than the others (library, health workers, and Public/Governmental bodies). This means that households are more affected or targeted with disasters. Knowledge and Training was found to be the factor with the highest number. This means that there is less education and training on disaster management.

Educational level, Knowledge and Training

Individuals with a higher educational level are more likely to be prepared than those of low educational level. Knowledge in terms of educating public about disasters is very important irrespective of the educational level. According to Adinku et al (2005), library staff did not know how to use a fire extinguisher in their facility. This is really disturbing because most of these facilities have been supervised by the fire service and even provided fire extinguishers but did not provide training. Training should be provided when a building facility is supervised for safety. It is the duty of the Fire service to provide that. It seems that a lot of facilities do not receive training in

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disaster management. Institutions must be formed, which will see to organizing trainings in all organizations and households. In Ghana, the National Disaster Management Organisation (NADMO) is the institution responsible for disaster managemen. The aim of NADMO is to reduce the risk of people, particularly the poor and disadvantaged, from the effects of natural, environmental, and human-caused hazards by coordinating the resources of government institutions, non-governmental organizations, and the private sector, and developing individuals' and communities' capacity in disaster prevention, response, and recovery. (NADMO 2010). Individuals and institutions might leave the training aspect to NADMO but it can be clearly seen from their aim that they are not in charge of training but majorly in reducing risks. This can be seen from Abayomi et al (2014), in which some of the participants stated that the institutions are focussed on corrective measures rather than preventive measures.

Financial

One of the financial factors that were observed were the demand for payment before patients are transported by ambulances, high cost of fuel, the failure of emergency patients to pay the agreed hospital bills and services. This shows that the financial status of individuals in Ghana can affect their preparedness towards disasters. In case there is a disaster, a lot of people will lose their lives because of inadequate funds. The Government should make certain services in Hospitals free so as to reduce risks of disasters.

Cooperative and Managerial

It was observed that a lot of Institutions were not complying to collaborate with other institutions to manage disasters. It is very important to check the attitudes of staff and heads of these institutions for effective preparedness. The Government should put in place counselling and adherence programs which will help those in charge of disaster management see the need and the risk involved in ignorance. Looking at Table 3 we can see that cooperative and managerial factors are common in 3 out of 4 major study population. This shows how serious and important managerial factors play a role in disaster management.

Social, Health and Physical

People's fear of contracting an illness especially in Nurses can affect their preparedness towards disasters. Managing disasters is crucial and hence needs attention and focus. Social factors like perceptions of what people think can influence preparedness of disasters. In Adamtey et al (2015) study, it was revealed that people had a perception that ambulances carry dead bodies. This is very false because ambulances carry injured and sick individuals who are given basic treatment before arriving at the hospital. This also shows that level of education can affect one's perception of things. Only educated people or those who have gachieved a higher level of education know the true purpose of ambulances. Another factor which was observed is the physical properties of an establishment. It was observed that some organizations and institutions were not prepared for disaster because they did not have adequate ambulances, presence of fire and water hazards, inadequate escape routes in the buildings, no signage for fire escape routes, no compliance with fire bylaws in the operated buildings, only few firefighting equipment and others. This is also connected to managerial factors and also financial. This is because if there is adequate funds, there will be adequate provision of equipment to manage disasters.

5 Limitations

One limitation of this review paper is that studies that were classified as General disasters did not focus on a particular or specific type of disaster. This could have given us more scope or elaborative view on the type of disasters in Ghana and their management.

6 Conclusion And Recommendations

It is evident that, Knowledge and training about disaster management is not carried out in Ghana and hence there is a need to establish a specific organization which will be in charge of it. It is also observed that most disaster management equipment is expensive. It is recommended that the government should make these equipment and vehicles free so that we can avoid the risk of disasters.

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