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Assessment of Practice of Preparedness to Manage Disaster Victims among Healthcare Workers in General Hospitals Northwest Zone, Nigeria

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Abstract
The study assessed practice of preparedness to manage disaster victims among healthcare workers in General Hospitals in Northwest zone, Nigeria. To achieve this purpose a research question was raised. The population for the study was 24,475 healthcare workers in twenty seven (27) general hospitals in Northwest Zone, Nigeria. 600 copies of questionnaire were distributed for data collection. Five hundred and seventy one (571; 95.2%) were retrieved and used for the analysis. A sample of 571 respondents comprising 387 males and 184 females respectively was drawn for the study. Multi-stage sampling technique was used to draw respondents for the study. The instrument used for data collection was modified questionnaire adapted from similar studies on disaster preparedness questionnaire. The questionnaire consisted of items on practice of disaster preparedness. The reliability of the instrument was 0.71 tested by Guttman Split-half Coefficients. The data was analysed by using Statistical Package for Social Sciences (SPSS) IBM version 23. Mean and standard deviation (SD) was used to answer study research question. Inferential statistics of one-sample t-test was used to analyse the hypotheses and tested the significant difference among healthcare workers at 0.05 Alpha level used as a criterion for retaining or rejecting the null hypotheses. The finding revealed that healthcare workers have significant practice of preparedness (P-value=0.000<0.05) the observed t-value (3.811 and t critical 1.96). It was concluded that healthcare workers in Northwest Zone, Nigeria have regular practice of preparedness. It was recommended that hospital management should take the issue of healthcare workers disaster preparedness a matter of priority and allocate funds and logistics to boost and sustain their drills and exercise in order to maintain their level of practice of preparedness.

Keywords: *Disaster Preparedness, Drills, Exercise, Northwest Zone, Healthcare Workers*

Introduction

Disaster is the serious disruption of a community, society, region or nations causing widespread human, material, economic and environmental losses which exceed the ability of the affected community, society, region or nation to cope using its own resources (United Nation International Strategy for Disaster Risk Reduction (UNISDR) (UNISDR, 2016). It is natural and human-made global phenomenon that involves a large number of victims. Such events affect people and hospitals of all sizes and geographic locations.

Globally, disasters cause untold human suffering, death, and destruction. For instance, the Centre for Research on the Epidemiology of Disaster (CRED), (2017) reported that injuries, diseases, disability, and deaths due to disasters continue to rise worldwide. In 2017, the Electronic Medical Dictation and Transcription (EM-DAT) data indicated that

318 natural disasters occurred, which affected 122 countries, claimed millions of lives and cost billions of dollars worldwide especially in Asia, South East, US Atlantic and Gulf coast, parts of Africa and sub-Sahara (United Nation International Strategy for Disaster Risk Reduction (UNISDR), 2013).

Nigeria today, is faced with many disaster challenges. For instance, the seven states of the Northwest zone, Nigeria from 2012 to 2017, were adversely affected disasters in the form floods, fire outbreaks, disease outbreaks, and road traffic accidents. In addition, a spate of bomb blasts in Kano and Kaduna state in public places such as the Kano Central Mosque (Masjid), Federal College of Education Kano, Bayero University Kano, and the GSM handset market. The Daily Trust (2017) reported the outbreak of Cerebrospinal Meningitis (CSM) with suspected cases of 1, 966 across 15 states, with over 109 cases treated, and 314 deaths.

In all of these disasters, multiple injured victims sustained severe and fatal injuries which call for urgent and prompt care from disaster prepared healthcare workers. Furthermore, the researchers' Emergency Nursing background, observance of the manner these victims are handled by healthcare workers ignited the interest to assess the Healthcare Workers practice of preparedness to manage disaster victims in General Hospitals in Northwest Zone, Nigeria.

Hypothesis

Healthcare workers in General Hospitals in the Northwest Zone, Nigeria would not have a significant practice of preparedness to manage disaster victims.

Methodology:

Research Design

The research design used for this study was a survey descriptive research design. According to Akuezuilo (1993), Njodi and Bwala (2010), survey study a group of people or items (population) by collecting analysing data from only a few people or items (sample) considered to be the representative of the entire group.

Population of the Study

The population for the study consisted of twenty-four thousand, four hundred and seventy-five (24, 475) healthcare workers in the General Hospitals in Northwest Zone, Nigeria only. These are the healthcare workers working in the seven states General Hospitals of Jigawa, Kaduna, Kano, Katsina, Kebbi, Sokoto and Zamfara states respectively (Researchers Fieldwork, 2017).

Sample and Sampling Techniques

A multi-stage sampling procedure was used for this study. A sample size of 600 was used for this study. However, as suggested by Krejcie and Morgan (1970), and Research Advisors (2006) a sample size of 374 sufficed. The multi-stage sampling procedure for the study took a series of steps to arrive at the sample for the study as follows:

Stage I:

Simple random sampling technique was used to select 3 states from the seven states in the Northwest zone of Jigawa, Kano, Kaduna, Kebbi, Sokoto and Zamfara states respectively. The three states randomly selected for this study were Kano, Katsina and Zamfara state respectively.

Stage II:

Random sampling technique was used to select three (3) senatorial zones (stratum) from each of the three randomly selected states. That is the Central, North, and South senatorial zones from Kano, Katsina and Zamfara state respectively.

Stage III:

Simple random sampling was used to select 3 general hospitals from the senatorial zones. In this way, twenty-seven selected general hospitals emerged used for this study.

Stage IV:

Proportionate sampling technique was used to get the sample size to administer the questionnaire based on the number of healthcare workers in the general hospitals

where research assistants assisted in the administration of the questionnaire.

Stage V:
Systematic sampling technique was used to administer a questionnaire to the respondents, in this hospitals the staff register was used to select every 5th person as a sample that participated in the study.

Table 1: Population Distribution of Sample-based on Professional Cadres in the Northwest Zone, Nigeria

S/N		Total No.	Sample
1.	Doctors	1, 278	79
2.	Nurses	8, 988	270
3.	Pharmacist/Tech	2, 688	35
4.	Med. Lab. Sci/Tech.	4, 554	68
5.	Physiotherapist	157	17
6.	Others	6, 810	115
	Total	**24, 475**	**600**

Sources: Researchers Fieldwork (2017).

Ethical clearance
The ethical clearance was obtained from the states operational research advisory committee at the Ministry of Health (MOH) of Jigawa, Kano, Katsina and Zamfara states.

Data Collection Instrument
The instrument used for data collection was a modified four-point Likert scale validated questionnaire adapted from similar studies on disaster preparedness readiness questionnaire by Moabi (2011), Chimenya (2011) and Ibrahim (2014). The questionnaire contains seven (7) items on the practice of disaster preparedness to manage disaster victims in the Northwest Zone, Nigeria. For the purpose of scoring of responses made by the respondents, 4 - point Likert Scale rating of: Strongly Agree (SA) 4 points, Agree (A) 3 points, Disagree (DA) 2 points, Strongly Disagree (SDA) 1 point.

Therefore, any mean score of response that is 2.5 and above is positive or acceptable and any mean score of response that is less than 2.5 is negative or not acceptable.

Pilot Study
A pilot study was conducted to ascertain the reliability of the research instrument. 50 healthcare workers drawn from two randomly selected General hospitals of Ringim and Dutse in Jigawa state were used. The reliability of the instrument indicated a reliability coefficient of 0.71 by Guttmann split-half coefficient of reliability.

Data Analysis
Data collected were analysed using the statistical package for social sciences (SPSS) IBM version 23 statistical software package. Descriptive statistics of percentage, frequencies, mean and standard deviation were used to describe the data. The one-sample t-test was used to test for significant differences among variables.

Result

Table 2: Mean Score and Standard Deviation of Responses of Healthcare Workers' on Practice of Preparedness to Manage Disaster Victims in General Hospitals in Northwest Zone, Nigeria

S/N	Practice of preparedness to manage disaster victims	Mean	S.D.
1.	Disaster management drills are done in my hospital.	3.45	.762
2.	Training is done when the need arises in my hospital.	3.40	.739
3.	I have ever participated in a disaster event.	3.54	.678
4.	The hospital is adequately prepared for disaster /multiple casualty events.	3.28	.825
5.	The hospital conducts workshops to educate staff members on disasters preparedness.	3.26	.824
6.	If there is a disaster in my community I am knowledgeable and competent to participate.	3.37	.785
7.	I practice disaster management drill in my hospital.	3.25	.849
8.	Disaster plans are periodically updated in my hospital.	3.29	.925
9.	Disaster plans are periodically updated in my hospital every year.	3.02	1.093
10.	Disaster plans are periodically updated in my hospital every six months.	3.00	1.099
11.	Disaster plans are periodically updated in my hospital every 3-6 months.	3.19	.962
12.	Disaster plans are periodically updated in my hospital whenever the need arises.	3.36	.880
Aggregate mean		3.28	0.554

The result of table 2 above revealed that item number 3 has the highest mean score of 3.54 which indicate that, I have participated in disaster events. It means that healthcare workers practice preparedness to manage disaster victims in the General Hospitals in the zone, which include disaster drills for such events. The opinions of health workers on the selected items are scored in means and standard deviation, the decision on the adequacy of the practices is based on a midpoint average of 2.50. The opinion suggests that they practised preparedness to manage disaster victims in the General Hospitals in the zone. This was clearly demonstrated by the mean score on drills which they agreed were

Testing of Hypothesis

This study revealed that healthcare workers have a significant practice of preparedness to manage disaster victims in the Northwest Zone, Nigeria. The mean score of 3.28 for the aggregate variable of practices is higher than the midpoint average of 2.50 for the table. The observed t-value for determining the level of significance for the test is 33.811 obtained at 570 degrees of freedom and observed level of significance of 0.00 ($P < 0.05$). By implication, the observed t-value (33.811) is higher than the critical value (1.96) at the same degree of freedom and at the fixed probability level of 0.05. These observations provide enough evidence for rejecting the null hypothesis. The null hypothesis that healthcare workers do not have a significant practice of preparedness to manage disaster victims in the Northwest Zone, Nigeria is therefore rejected. With these observations, there is enough evidence to reject the null hypothesis. The hypothesis that healthcare workers do not have a significant practice of preparedness to manage disaster victims in the north-west zone, Nigeria is therefore rejected.

Table 3: One-Sample t-test on Practice of Healthcare Workers on Preparedness to Manage Disaster Victims in General Hospitals in the Northwest Zone, Nigeria

Variables	N	Mean	Std. Dev.	Std. Error	t-value	DF	P-value
PRACTICE	571	3.28	0.554	0.023	33.811	570	.000
Test mean	571	2.50	0.000	0.000			

(t-critical =1.96, P < 0.05, Ho rejected)

The result of the test table 3 above revealed that the practices of healthcare workers were considered to be significant by the respondents from the selected general hospitals in the zone. The indications in the table included an observed t-value of 33.811 obtained at 570 degrees of freedom and observed the level of significance of 0.00 (P < 0.05). By implication, the observed t-value (33.811) is higher than the critical value (1.96) at the same degree of freedom and at the fixed probability level of 0.05. These observations provide enough evidence for rejecting the null hypothesis. The null hypothesis that healthcare workers will have a significant practice of preparedness to manage disaster victims in the Northwest Zone, Nigeria is therefore rejected.

Discussion

This study assessed the practice of preparedness to manage disaster victims among healthcare workers in General Hospitals in the Northwest Zone, Nigeria. The hypothesis was tested, the findings revealed that healthcare workers have an adequate practice of preparedness to manage disaster victims in the zone.

This finding here is in line with the work of Sakhare, Waghmare, and Joshi (2016) which revealed that majority 152(76%) of the healthcare team had on average practices regarding hospital disaster preparedness. Jiang, He, Zhou, Shi, Yin, and Kong (2015) which found out that, the highest percentage scores on the domains of practice was 67.60%. However, (Aminu 2014; Fagge, 2014; Walczyszyn, Patel, Oron & Mina, 2016) which found lack of and inadequate disaster plan and disaster training and drills and 27.5 % had no training provided. (Zarea, Beiranvand, Sheini-Jaberi, Nikbakht-Nasrabadi, 2014; Al Khalaileh, Bond and Alasad, 2012; Dangana, 2014; Hajito, 2014; Ocheche, 2014) the study found out that the majority of healthcare workers current state of disaster preparedness to be inadequate to efficiently and effectively manage disaster victims. Although, this study finding showed that healthcare workers adequately and regularly practice disaster preparedness, the researchers' differ, owing to the observed perceived lack of incentives, motivation and provision of essential instruments and equipment for disaster response and insufficient training for disaster management and disaster drills and defects in university educational systems and lack of in-service training all cadres of healthcare workers as is obtain.

Conclusions and Recommendations

On the basis of the findings of this study, healthcare workers in the General hospitals in the Northwest zone, Nigeria regularly and adequately practice preparedness to manage disaster victims in the zone. Hence, it was recommended that Government and General hospitals management should take the issue of workers disaster preparedness a matter of priority and allocates funds and logistics for seminar, conferences, and workshops to boost and sustained their practice of preparedness to manage disaster victims.

The management of the General hospitals in the Northwest zone, Nigeria should regularly encourage the practice of mock disaster drills and exercises among its healthcare workers in order to maintained and sustained their disaster preparedness level.

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Conflict of interest: None

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