International Journal of Advance Research in Science and Engineering
Volume No. 11, Issue No. 05, May 2022
www.ijarse.com
IJARSE
ISSN 2319 - 8354

HOSPITAL EMERGENCY/DISASTER PREPAREDNESS

Name: Maryam Ibrahim, Manu Jamilu Idris, Yusuf Gambo Hamza

Email: ***ibrahimmaryam666@gmail.com*** **,** ***jmanu4all@gmail.com*** **,** ***yusufghamza@gmail.com***

(+919509527930)

University Name: *Mewar University Chittorgarh, Rajasthan India*

Department: *Paramedical science*

ABSTRACT

During times of disaster, hospitals play important role within the health-care system by providing essential medical care to their communities. Any incident that causes loss of infrastructure or patient surge, such as a natural disaster, terrorist act or chemical, biological, radiological, nuclear or explosive hazard often requires a multijurisdictional and multifunctional response and recovery effort. The aim of this study is to assess Hospital Emergency/Disaster preparedness: A case study of Barau Dikko Teaching Hospital Kaduna, Nigeria. A cross-sectional, descriptive study was carried out in January, 2017 using 250 semi-structure self-administered questionnaires. Data collected was analyzed using STATA statistical software and then the result was presented using Suitable frequency distribution tables and charts. The results revealed majority of the respondents are within the age of 40years and also females have the higher percentage. The result also indicates that 40% of the respondents don't know the meaning of disaster and civil unrest is the major type of disaster the respondents are aware of. Mean while those without the knowledge on how to manage disaster constituted the majority (69.2%). Again majority of the respondents (80.0%) are involved in any form of training. Also, Majority of the respondents believe there are available equipment/facilities to handle mass casualty incidents in Barau Dikko Teaching Hospital. The study concluded that the hospital has no policy on disaster preparedness and such does not organize drills to test the efficacy of its policy in disaster management. The lack of adequate policy appears to be the basis for the poor disaster preparedness of the hospital as was shown in this study. Therefore a written disaster policy should be put in place by the Management of the BDTH and made known to the entire hospital staff for an efficient disaster management in the event of a disaster and the Hospital staff should be educated about the content of the policy among others.

INTRODUCTION

Misfortune, misadventure, disaster, accident, blow, reverse Disasters, calamities, catastrophes, and cataclysms are all terms used to describe negative events that occur abruptly and unexpectedly. A disaster can be caused by human error, such as negligence or poor judgement, or by natural forces such as hurricanes or floods.

Health issue being one of the most crucial service, from the point of view of caring & rehabilitation of injured &preserving formalities for dead, requires the highest state of alertness round the clock, all 365 days of the year, with no breaks for any reason.

During disasters, hospitals play an important role within the health-care system by providing essential medical care to their communities. Any incident that causes infrastructure loss or a patient surge, such as a natural disaster, terrorist act, or chemical, biological, radiological, nuclear, or explosive hazard, for example, frequently necessitates a multijurisdictional and multifunctional response and recovery effort. Due to a scarcity of resources, a rush in demand for medical services, along with communication and supply line disruptions, poses a severe obstacle to health-care delivery. To enhance the readiness of health facilities to cope with the challenge of a disaster hospital need to be prepared to initiate fundamental priority action. Hospitals are complex and potentially vulnerable institutions that rely on outside assistance and supply lines. Furthermore, given the current emphasis on cost containment and efficiency, hospitals frequently operate at near capacity during a disaster. An interruption in standard communications external support services or a natural disaster or supply delivery can disrupt essential hospital operations, and even a minor unanticipated increase in admission volume can overwhelm a hospital beyond its functional reserve. Employee turnover and a lack of critical equipment and supplies can limit access to necessary care and occupational safety. Even for a well prepared challenge. Amid those challenges and demands, the systematic implementation of priority actions can help facilitate a timely and effective hospital based response. The concept of a hospital incident command centre was thus developed. It is an incident command system (ICS) designed for hospitals and intended use in both emergency and non emergency situation it provide hospitals of all sizes with tools needed to advance their emergency preparedness and response capability both individuality and as members of the broader response community.

During the last decade medical organizations in many countries have instituted programs to maintain preparedness in order to cope with threats of mass casualty incidents (MCI) A mass casualty incident (often shortened to MCI and sometimes called a multiple casualty incident or multiple casualty situation) is any incident in which emergency medical services and resources such as personnel and severity of casualties like natural or manmade disasters.

Meeting the challenge of emergency preparedness necessitates defining the components of readiness for a MCI one definition is the preparedness pyramids which identifies (1) planning and policies, (2) equipment and Infrastructure, (3) staff knowledge and capabilities, and (4) training and drills are the major components of maintaining a high level of preparedness in hospitals. Disaster plans must be established. A disaster plan should serve as the mechanism for tailoring the response to specific scenarios and locations such organizational plans serve as a basic for an effective response to treating casualties during emergencies, as they delegate those who response prepare the necessary infrastructure and train medical teams.

Nevertheless, one must not regard the plan as the entire essence of emergency preparedness, but rather as one element in a spectrum of activities an effective perspective is to view the planning as a holistic process that includes activities amid at improving emergency response.

RESEARCH METHODOLOGY

DATA COLLECTION TECHNIQUE

Data was obtained using a well-structured questionnaire arranged in section labeled with alphabet with each section reflecting the objective of the study. Self-administered questionnaires were used to obtained information from the emergency staffs while a checklist was used to obtained information on the disaster preparedness policy, infrastructure and equipment availability of the hospital. The questionnaire included questions on bio-data of a respondents, level of qualification, training and experience in disaster management. Both the questionnaire and the check list are an adaptation of the WHO Hospital Emergency Response Checklist

TYPE AND SOURCE OF DATA

Primary and secondary source

Primary data: this include data generated from administration of questionnaires, oral interview, and field survey, they are raw information, not process anywhere before but for the purpose of this research. This includes information like Hospital Emergency, Disaster Preparedness Among Staff of Barau Dikko Teaching Hospital, Kaduna State.

Secondary data: This includes already processed information generated form secondary sources like textbooks, environmental journal, magazines, newspaper, thesis, the internet. Such data include maps of the study area, population statistics etc.

RESEARCH DESIGN

Both **Descriptive and exploration survey Design** will be used for the study .survey are the most common type of descriptive research performed in health and human performance. In survey research, opinions or practices are obtained from a sample of people representing a population using interview or questionnaire .the inf0ormation thus obtain will provide a basis for making comparisons and determining trends. It will reveals current weaknesses and or strength in a given situation and provide information for decision making (Baumgartner, Strong & Hensley 2002).

SAMPLING TECHNIQUE

Creswell (2002; 163) defines a sample as a sub group of the target population that the researcher plans to study for the purpose of making generalization about the target population. The sample in this study comprises of Doctors, Nurses and Attendants working in Barau Dikko Teaching Hospital Kaduna at the time study will be conducted.

Inclusion criteria are the characteristics that the respondent must have in order to be included in the study (Burns and Grove 2001:367). Respondent must meet the following criteria.

- Male or Female
- Doctors, Nurses and Attendants
- Must be working in Barau Dikko TeachingHospital, Kaduna.

Probability Sampling Approach will be used for the study. Sampling refers to the systematic method of selecting subjects for the study (Baker 1998:148) in probability sampling, each unit in the population has a chances of being selected .the sample can be said to be representatives of the population from which it was selected and as such generalization of finding can be made to the population (Araoye,2004 & Baumgartner et al 2002.

DATA ANALYSIS

Data analysis is a systematic organization and synthesis of research data and a testing of the research hypothesis using the data (Polit & Hungler 1999).In this study, data analysis will be

done in collaboration with a biostatistician using STATA statistical software .Descriptive statistics will be used in the analysis and univariate analysis, which include frequency distribution of key items, which will be represented. Vicarite analysis (Cross tabulation) will be used to describe the study hospital emergency disaster preparedness among Doctors, Nurses and Attendants.

RESULTS

Table 1 Socio-Demographic characteristics of the Respondents (n 250)

Variable	Frequency	Percent
Age (in years)		
20-25	13	5.2
26-30	37	14.8
31-35	61	24.4
36-40	59	23.6
≥41	80	32.0
Sex		
Male	100	40.0
Female	150	60.0
Marital Status		
Single	57	22.8
Married	193	77.2
Years of Experience		
1-5	18	7.2
6-9	22	8.8
10-15	117	46.8
≥16	93	37.2
Profession		
Nurse	107	42.8
Doctor	44	17.6
Pharmacist	22	8.8
Laboratory scientist	13	5.2

Medical records	10	4
Attendants	54	21.6
Specialization		
Orthopedic Doctor	5	2.0
Cardiothoracic surgeons	2	0.8
Trauma Doctor or Nurse	20	8.0
None specialize	223	89.2

Table 1 above shows that majority of the respondents are within the age of 26-40 year (62.8%) while female constitute the highest population of the study with 60% of the total respondents. Then 77.2 % are married and 62.8% have 1-15 years of working experience.

Table 2 Respondents Knowledge on Disaster and Disaster management (n 250)

Variable	Frequency	Percent
Meaning of disaster		
Fully Correct response	52	20.8
partially correct response	98	39.2
Incorrect response	100	40.0
Types of Disasters identified by the respondents		
Fire	71	28.4
Flood	29	11.6
Road accident	47	18.8
Civil unrest	103	41.2
Knowledge on disaster management		
Those with knowledge	77	30.8
Those without knowledge	173	69.2

The above table indicates that (40%) of the respondents don't know what disaster is all about. Also, civil unrest is the major type of disaster the respondents are aware of, while those without knowledge form 69.2% on how to manage disaster.

International Journal of Advance Research in Science and Engineering
Volume No. 11, Issue No. 05, May 2022
www.ijarse.com
IJARSE
ISSN 2319 - 8354

Table 3 Training on disaster management by the respondents (n=250)

Variable	Frequency	Percent
Attendance of training on emergency preparedness		
Yes	200	80.0
No	50	20.0
Years since last training in emergency preparedness		
1-2	33	16.5
3-4	42	20.0
≥5	125	62.5
No. of time involved		
1-4	120	60.0
5-10	67	33.5
≥11	13	6.5
Involved in Hospital drills		
Yes	50	25.0
No	150	75.0

Table 3 above revealed that most of the respondents (80.0%) attended training on emergency preparedness and 62.5 attended training in the last five years and above. also 60% of the respondents are involved in a training for not more than four (4) times, the majority of the respondents (75%) are not even involved in any form of drills.

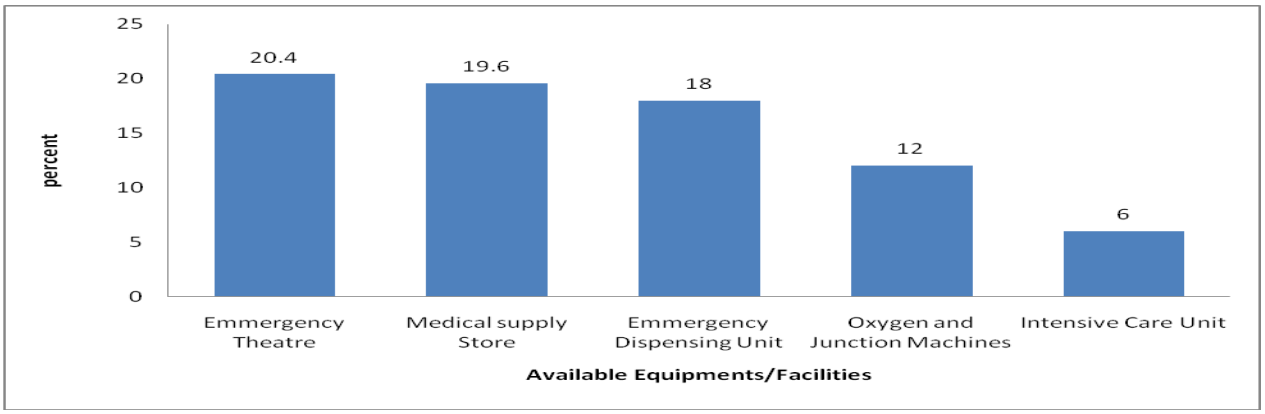

Figure 1: Availability of adequate equipment/facilities required for disaster management (n=250)

The availability of emergency theatre, oxygen and sunction machine and ICU were 20.5%, 12% and 6% respectively.

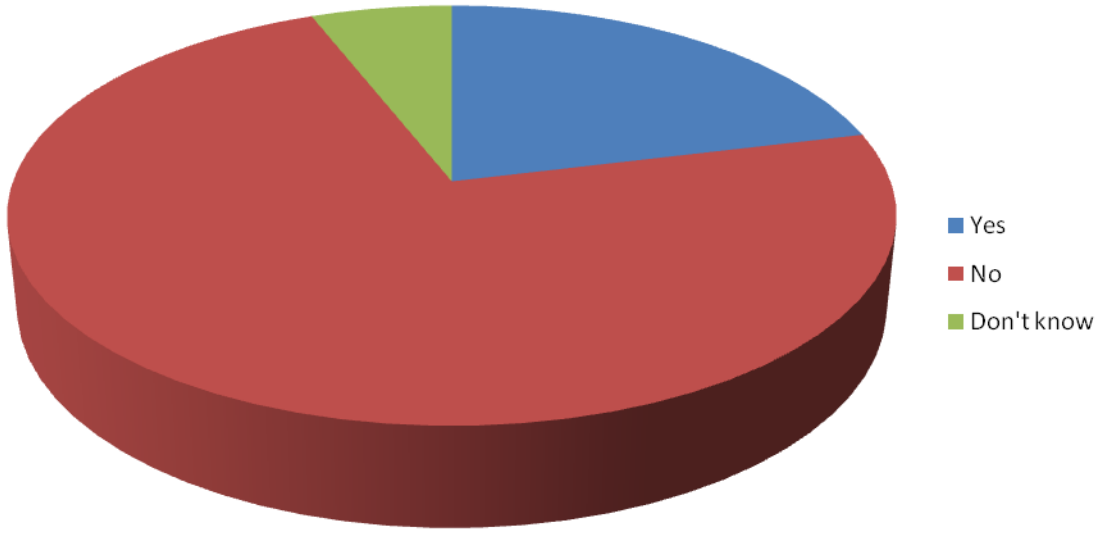

Figure 2: Availability of the hospital disaster preparedness policy (n=250).

The above chart shows that about 72.8% of the respondents believed that BDTH don't have disaster preparedness policy neither is there a hospital incident command centres.

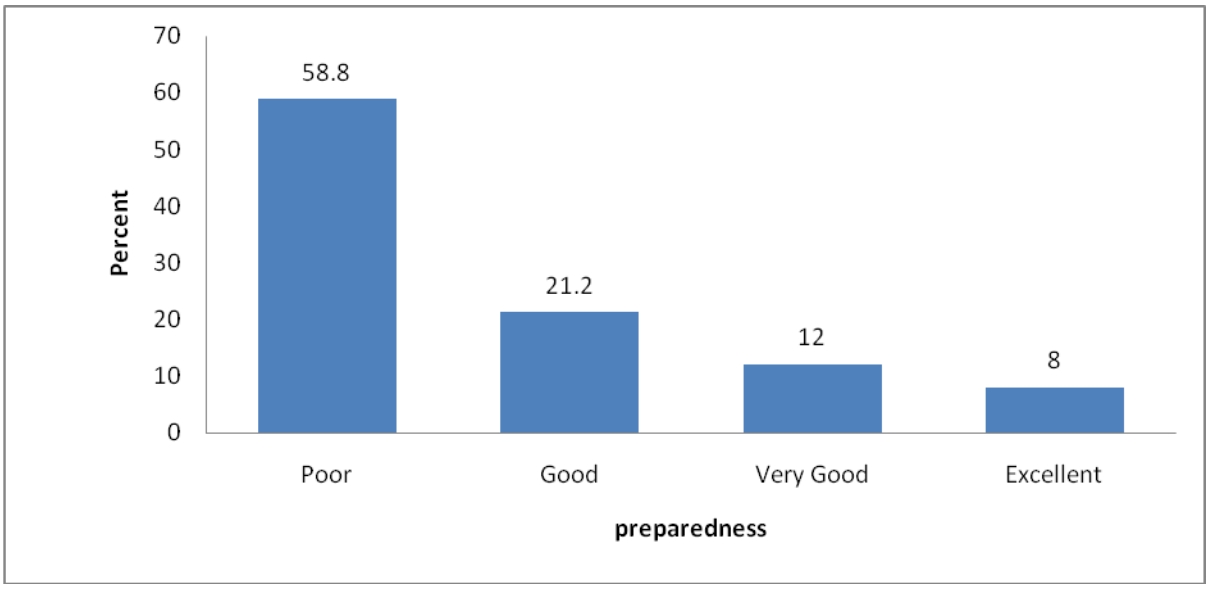

Figure 3: Disaster Preparedness assessment of the Hospital by the respondents (n=250)

Majority of the respondent assessed the preparedness to be poor (58.85) while 21.2%, 12%, and 8%, described the preparedness as good, very good and excellent respectively.

International Journal of Advance Research in Science and Engineering
Volume No. 11, Issue No. 05, May 2022
www.ijarse.com
IJARSE
ISSN 2319 - 8354

DISCUSSION AND CONCLUSION

DISCUSSION

This study aim to assess the knowledge of staff's on disaster and disaster preparedness of Barau Dikko Teaching Hospital (BDTH) Kaduna as a case of study and majority of the respondents 32 were found to be within 20 to 40 years this may reflect a good age for hospital staff to be knowledgeable about disaster and disaster preparedness. The other significant proportion of staff are above 41 years which may not have enough skills and experience of guide the younger staff in disaster management.

Majority of respondents were nurses. This can be explain by the fact that they constitute the bulk of workforce in the hospital and in the presence, they are the next in tern of skills and experience in managing patient and providing the first aid care hence their large representation also show their knowledge on disaster and disaster preparedness.

More than half of the respondents believe there is emergency response service in the hospital and its good while majority of the respondents believe the hospital lack the necessary equipment to handle a mass causality incident. The former figure as commented earlier may be the attributed to individual perception, the hospital protocol of prompt referral and also knowledge gap on efficient disaster and disaster preparedness. In the same vein, majority of the respondents believe the hospital lack adequate manpower for efficient mass casualty response. This indeed gives a pointer to the need for the provision of more equipment required for disaster management.

Majority of respondents had knowledge of what mass causality incident is; furthermore majority of the respondents also are not in any form of drills. This indicates a very poor understanding of how the hospital is run in times of disaster by staff. It gives a pointer to either lack of hospital policy on disaster preparedness or a lack of implementation if such a policy exists. It also predicts a chaotic and inefficient handling of hospital in the events of disaster. However this statistic is not surprising going by the fact that only few of the respondents had received any form of training in disaster preparedness.

With the response obtained from respondents who took part in this study judging by the poor level of awareness about disaster preparedness. It is not surprising to find out that the hospital had no written policy on disaster preparedness translating into a lack of an incident command center and a hospital lockdown protocol. Interestingly however the hospital has an effective communication system between various department and unit. This will be highly beneficial for emergency service in the hospital but on the other hand without a laid down policy on disaster management, this service may not be of much benefit considering the predictable chaos that will exist. Unlike in the United State of America where all hospital had an emergency response plan this study has shown that such is not the case in BDTH on the other hand, looking at the scenario in a sister African country, the management at a Johannesburg Hospital aware of the disaster preparedness of the hospital and its plans, and disaster knowledge their attitudes towards the plans and drills were largely positive. However, the practices were deficient and work still needs to be done with regard to ongoing training, performance of drills and frequency of regular updating of the plans. However the plan alone is not all it takes to be prepared against disaster as a plan which has not been tested and reviewed may be worse than no plan at all. It can build a false sense of security in the health care facility about its level of preparedness.

5.2 CONCLUSION

The study showed that the hospital has no policy on disaster preparedness and such does not organize drills to test the efficacy of its policy and also had no sufficiently manpower in disaster management. The lack of a policy appears to be the basis for the poor disaster preparatory state of the hospital as was shown in this study.

REFERENCES

[1]. Adini B., Goldberg A., Cohen R. and Bar-Dayan Y. (2014). Relationship between Equipment infrastructure for pendemic influenza and performance in an Avain flu Drill. http;//eini.bmLy.com/content/26/11/786.full

[2]. Affirma K., Amy H.K., Kristi-L. K., and Roger J.L. (2014). Current Hospital Disaster Preparedness Lockdown. www.aflii-maine.com/hospital-lockdown.

[3]. Amy H. K; Vinette L; Roger J. L (2007) Assessing hospital disaster preparedness. Comparison of an on-site survey. Directly observed drill performance and video analysis of team work.

[4]. Kaduna State Ministry of Health (2013). Barau Dikko Teachning Hospital ; Historical profile Documents.

[5]. Collander B., Green B., Millo Y., Shamloo C., Donnellan J., (2014). Development of an "All Hazards" Hospital Disaster preparedness training course: Utilizing Multi-modality teaching.

[6]. Department of Health, Republic of South Africa (2012). Disaster Risk Management and Planning for hospital and healthcare facilities. www.preventionweb.net/tiles/ Free State province disaster risk manage pdf accessed on 05/01/20124.

[7]. Kaji A. I. Lewis R.J. (2013) Hospital Disaster Preparedness in Los Angeles Country AcadEmerg Med.2016 NOV; 13-11; 1198-203.

[8]. Mehment T., Omer G. K., and Yunus T.K (2010). An investigation of Hospital Disaster preparedness in Turkey. www.bepress.com/ihsem/vo17/iss i/69 accessed on 12/01/2014.

[9]. Moabi M. and Rosemary M (2009). Knowledge, attitudes and practices of health in Gauteng province. South Africa. http:/hdl.handle.net/10539/7409 accessed on 15/01/20124.

[10]. Renee Y. H., and Naboth A.M., (2011). Access to Emergency and surgical care in sub-sahara Africa; The insfrastructure GaP. accessed on 13/01/2014

[11]. Richard W. N. (2011). Iris M.S; Hospital preparedness for Emergency Response; United States 2008. National Health Statistics Report; Number 37, march 24,. ww.cdc.gov/nchs/data/nhsr/iihsr037 pdf accessed on 14/01/2014.