

OCCUPATIONAL HAZARDS AND SAFETY MEASURES AMONG HEALTHCARE WORKERS IN A TERTIARY HEALTH INSTITUTION IN SOUTHERN NIGERIA

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ABSTRACT

Objectives: The objectives of the study was to determine the occupational hazards HWCs face and the safety measure put in place to mitigate these hazards in a tertiary health institution in Edo State, Nigeria.

Methods: A cross-sectional descriptive study design was used to carry out this study among HWCs in a tertiary health institution. Data were analyzed with IBM-SPSS version 23 and statistical significance was set at $p < 0.05$.

Results: Out of the 163 respondents interviewed, 50.92% of them had poor knowledge of occupational hazard while 49.08% had good knowledge. All the doctors interviewed had good knowledge as compared to a larger proportion of other HWCs who had poor knowledge of occupational hazard and this association was statistically significant. Most of respondents (96.93%) had positive attitude toward occupational hazard with few of them having poor safety measures to avoid injury in the work place.

Conclusion: Majority of Health care workers with the exception of medical doctors have poor knowledge of occupational hazards with poor safety measures though they may have positive attitude.

Keywords: Occupational hazards, Healthcare workers, Safety measures.

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INTRODUCTION

Worldwide, the health-care force represents 12% of the working population. Occupational hazards exist wherever healthcare is practiced [1,2]. There are numerous implications of occupational diseases and injury among health workers, which include: Physical, biological, chemical, ergonomics, and psychological damage to the worker and his family. Substantial morbidity and mortality among these workers inevitably lead to loss of skilled personnel and adversely impact health-care service, which are adversely strained in many low- and middle-income countries. To minimize these hazards in the workplace, health workers need to ensure hand hygiene, use of personal protective equipment, safe injection practices, safe handling of potentially contaminated equipment or surface in the patient environment, and respiratory hygiene. In addition, good knowledge of occupational hazards, proper, and effective compliance with safety measures will go a long way in addressing these hazards.

METHODOLOGY

A descriptive cross-sectional study design was utilized in this study involving HWCs in a tertiary institution. The sample size was determined using the Cochrane formula [3] for a descriptive cross-sectional study with a prevalence of occupational hazard in a previous study of 89%, giving a minimum sample size of 163 after correcting for attrition. A stratified sampling technique with proportional allocation to size was used to select the health workers for the study. The questionnaire was used for data collection, which was entered into a spreadsheet and analyzed using the IBM-SPSS version 23.0. The results were presented in tables and charts where appropriate. Chi-squared test was used to test the association between variables and level of significance set at $p < 0.05$.

RESULTS

A total of 163 the socio-demographic characteristics of the respondents are shown in Table 1. Most (41.7%) of the respondents were within the age group 33–39 years. However, their ages ranged from 19 to 56 years, with a mean age of 36.31, and a standard deviation of ± 6.83 . About two-third (62.6%) of the respondents were married. Females were more, making up 69.3% of the total number of respondents. The majority (70.6%) of the respondents had a tertiary level of education, while 2 (1.2%) and 4 (27.1%) of the respondents had primary and secondary level of education respectively. Only 2 (2.1%) of the respondents had no formal education. Most (96.3%) were Christians and about two-third (63.8%) were Esan. Nurses were more in this study, making up 35.6% of the total respondents. This was followed by doctors (27.0%), cleaners (22.1%), and laboratory scientist (14.7%). Only one portal was interviewed. Respondents were drawn from the various departments of the hospital. Respondents from medicine and surgery departments were more as they made up 40.2%, of the total number of HWCs interviewed. Pediatrics represented 19.6%, obstetrics and gynecology 17.2%, and hematology 15.3%. Other departments (Accident and Emergency, Theater) made up 7.4%. About two-fifth (46.6%) of the respondents have worked for <5 years. However, the mean duration of employment was 7.7 years ± 6.5 SD.

The respondents were fairly distributed in the department such as medicine (20.2%), Surgery (20.2%), Paediatrics (19.6%), Obstetrics and gynaecology (17.2%) and haematology (15.3%) except theatre (2.5%) and A and E (4.9%) with mean duration of employment of 7.7 ± 6.5 years (Table 2). Knowledge of biological hazard were below 50%. Needle stick injury (9.6%), HIV/AIDS (49.1%), Hepatitis (49.1%), and Lassa fever (47.9%) while knowledge in most other hazards

Table 1: Socio-demographic characteristics of respondents

Variable	Frequency (n=163)	Percentage
Age group (year)		
≤25	8	4.9
26–32	39	23.9
33–39	68	41.7
40–46	37	22.7
47–53	9	5.5
>53	2	1.2
Mean±SD=36.31±6.83		
Marital status		
Single	61	37.4
Married	102	62.6
Sex		
Male	50	30.7
Female	113	69.3
Level of education		
No formal level of education	2	1.2
Primary	2	1.2
Secondary	44	27.0
Tertiary	115	70.6
Religion		
Christianity	157	96.3
Islam	5	3.1
African traditional religion	1	0.6
Tribe		
Esan	104	63.8
Etsako	26	16.0
Bini	12	7.4
Owan	12	7.4
Others*	9	5.4
Job category		
Doctors	44	27.0
Nurses	58	35.6
Laboratory scientist	24	14.7
Cleaners	36	22.1
Potters	1	0.6

*Ibibio (1.8%), Yoruba (1.8%), Ibo (1.2%), Tiv (0.6%)

Table 2: Socio-demographic characteristics of respondents cont'd

Ward/units	Frequency (n=163)	Percentage
Medicine	33	20.2
Surgery	33	20.2
Pediatrics	32	19.6
Obstetrics and gynecology	28	17.2
Hematology	25	15.3
Others*	12	7.4
Duration of employment (years)		
≤5	76	46.6
6–10	49	30.1
11–15	16	9.8
16–20	12	7.4
21–25	7	4.3
≥25	3	1.8
Mean duration of employment±SD=7.70±6.50		

*Theater (2.5%), accident and emergency (4.9%)

were above average (Table 3). All the respondents with no formal education, (100%) had poor knowledge of occupational hazard while a greater proportion of the respondents with tertiary level of education had good knowledge of occupational hazard but this association was not statistically significant. $p=0.109$ (Table 4). All the doctors (100%) had good knowledge of occupational hazard as compared to other healthcare workers and this association was found to be statistically significant. $p=0.000$ (Table 5). Fig. 1 showed the aggregate knowledge of occupational hazard among healthcare workers. 49.08% of the respondents had good knowledge while 50.92% had poor knowledge of occupational hazard. 96.9% of the respondents had positive attitude

Table 3: Knowledge of occupational hazards among healthcare workers

Variables, n=163	Correct response, n (%)	Wrong response, n (%)
Disease can be contacted from patients	163 (100.0)	0 (0.0)
Infection occur by non-observance of standard precautions	163 (100.0)	0 (0.0)
Occupational hazards		
Physical hazards		
Biological hazards	131 (80.4)	32 (19.6)
Chemical hazards	91 (55.8)	72 (44.2)
Ergonomic hazards	100 (61.3)	63 (38.7)
Psychosocial hazards	66 (40.5)	97 (59.5)
Physical hazards		
Cut	93 (57.1)	70 (42.9)
Dust	44 (88.3)	19 (11.7)
Smoke	100 (61.3)	63 (38.7)
Noise	83 (50.9)	80 (49.1)
Biological hazards		
Needle stick injury	77 (47.2)	86 (52.8)
HIV/AIDS	32 (9.6)	131 (80.4)
Hepatitis B	80 (49.1)	83 (50.9)
Lassa fever	80 (49.1)	83 (50.9)
Chemical hazards		
JIK	78 (47.9)	85 (52.1)
Formaldehyde	92 (56.4)	71 (43.6)
Dust	122 (74.8)	41 (25.2)
Psychosocial hazards		
Stress	151 (92.6)	12 (7.4)
Verbal abuse	114 (69.9)	49 (30.1)
Depression	102 (62.6)	61 (37.4)
Lack of job satisfaction	102 (62.6)	61 (37.4)
	65 (39.9)	98 (60.1)

Table 4: Knowledge and education of healthcare workers

Level of education	Knowledge of respondents		Total (%)
	Poor (%)	Good (%)	
No formal education	2 (100.0)	0 (0.0)	2 (100.0)
Primary	1 (50.0)	1 (50.0)	2 (100.0)
Secondary	27 (61.4)	17 (38.6)	44 (100.0)
Tertiary	53 (46.1)	62 (53.9)	115 (100.0)
Total	83 (50.9)	80 (49.1)	163 (100.0)

Fisher's $p=0.109$

Table 5: Knowledge and job categories of healthcare workers

Job category	Knowledge of respondents		Total (%)
	Poor (%)	Good (%)	
Doctors	0 (0)	44 (100)	44 (100)
Nurses	39 (67.2)	19 (32.8)	58 (100)
Laboratory scientist	9 (36.0)	16 (64.0)	25 (100)
Cleaners	35 (97.2)	1 (2.8)	36 (100)
Total	83 (50.9)	80 (49.1)	163 (100)

Fisher exact $p<0.0001$

while 3.1% had negative attitude towards occupational hazards (Fig. 2). 93.3% of them had safety measures while 6.7% had poor safety measures (Fig. 3).

About half (49.08%) of the respondents had good knowledge of occupational hazards among HCWs, while 50.9% had poor knowledge of occupational hazards.

All of the respondents with no formal education (100%) had poor knowledge of occupational hazards, and just about half of

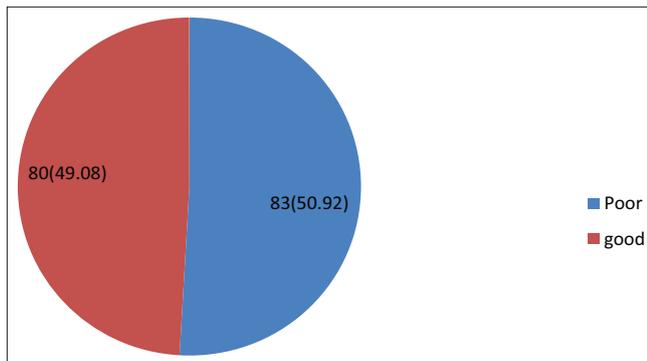


Fig. 1: Aggregate knowledge of occupational hazard among HCWs

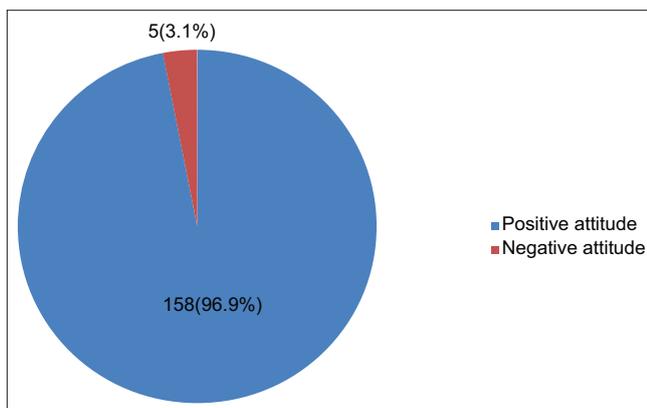


Fig. 2: Attitude of HCWs toward occupational hazards

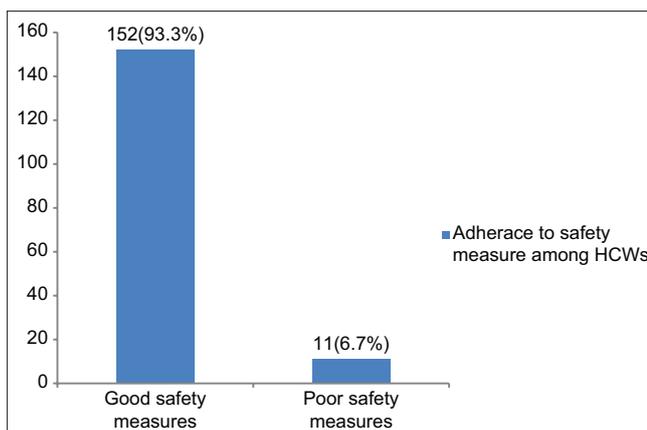


Fig. 3: Adherence to safety measure among HCWs

the respondents with tertiary education had good knowledge of occupational hazards (53.9%) and this association was found not to be statistically significant ($p=0.109$).

All the doctors (100%) had good knowledge, while a few of the cleaners (2.8%) had good knowledge of occupational hazards and this association was found to be statistically significant. $p<0.0001$.

Most of the respondents (96.9%) had negative attitude toward occupational hazards, while a few of them had positive attitude toward occupational hazards.

Most of the respondents (93.3%) had good safety measures, while few of them (6.7%) had poor safety measures.

DISCUSSION

Findings from this study highlight that about half of the respondents had good knowledge of occupational hazards. This finding is similar to a study carried out in South-Eastern Ethiopia [1] and Uganda [4], where the knowledge of occupational hazards among HCWs was 53.7% and 50%, respectively, but slightly different from a systematic study carried out in Africa which showed that about one-fifth of respondents had knowledge of occupational hazards [5]. This also contradicts a study done in the Philippines [4] where the majority 84.2% of respondents were knowledgeable about occupational hazard.

When a large proportion of HCWs do not have adequate knowledge of the occupational hazard, prevention of hazards with standard precaution is not likely, and this poses them to all manners of hazards. All of the respondents in this study understood that diseases can be contracted from patients and that infections occur by non-observance of standard precaution. Most of the respondents in this study had a positive attitude toward occupational hazards, and this is similar to a systematic study carried out in Africa where most of the respondents had a positive attitude toward occupational hazards [5]. This finding contradicts a study carried out in Iran [6] where of the 210 respondents, 75.5% of them had a positive attitude towards occupational health and safety.

Positive attitude toward occupational hazards sets a conducive atmosphere for workers in a hospital environment to observe standard precaution.

In addition, more than half of the respondents in this study had experienced occupational hazards and this is similar to a study carried out in Uganda which showed that about half of participants in the study had experienced occupational hazards [7].

In this study, most of the respondents had good safety measures, while a few had poor safety measures. It is important for health care workers to have good safety measures in place to prevent hazards in the hospital work environment. The observance of standard precautions will ensure a healthy work environment as well as healthy workforce.

CONCLUSION

About half of the respondents in this study had good knowledge of occupational hazards, with most of them having a positive attitude toward occupational hazard, and most of them having good safety measures to prevent hazards in the workplace.

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