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AWARENESS OF OCCUPATIONAL HAZARDS AMONG HEALTHCARE WORKERS IN TEACHING HOSPITALS IN NIGERIA

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Abstract

The study assesses the awareness of occupational hazards among healthcare workers in teaching hospitals in Nigeria. A descriptive research design of survey type was employed in this study. The population of this study consists of twenty-five thousand, five hundred and fifty (25,550) healthcare workers in teaching hospitals in Nigeria. The sample size for this study is three hundred and forty-eight (348), which was selected among healthcare workers at teaching hospitals in Northern Nigeria by using a multi-stage sampling technique. The instrument for data collection was the researcher's designed, structured questionnaire. An inferential statistic of one sample t-test and analysis of variance (ANOVA) was used to test the hypothesis at the 0.05 level of significance. The findings of the study revealed that there was significant awareness of occupational hazards among healthcare workers in teaching hospitals in Nigeria (t=118.047, df:339; P=.000) and there is no significant difference in awareness of occupational hazards among healthcare workers in teaching hospitals in Nigeria based on their cadre (F =.591, df = 6,333; P > 0.05). Based on the findings of this study it was concluded that healthcare workers at teaching hospitals in Nigeria are aware of occupational hazards and there was no difference in awareness of occupational hazards among healthcare workers of teaching hospitals in Nigeria based on their cadre. It was therefore recommended, among others, that the Federal Ministry of Health, in partnership with non-governmental organisations, should regularly conduct seminars and workshops for healthcare workers in teaching hospitals across Nigeria. This initiative aims to enhance awareness and adherence to occupational hazards and safety practices, ensuring sustained and effective safety measures.

Keywords: Awareness, occupational hazards, healthcare workers and teaching hospitals

Introduction

Occupational hazards are the degree of risk posed by activities and programmes engaged in at workplace. In this regard, occupational hazards refer to all activities in the workplace that can promote the risk of infection and injury. Occupational hazards in hospitals refer to the potential risks and dangers that healthcare workers, patients, and visitors may encounter within the hospital environment. Due to the nature of hospital work, which involves the care of patients with various medical conditions, there are specific hazards that are unique to this setting (Lugah, Ganesh, Darus, Retneswari, Rosnawati, & Sujatha, 2017). Occupational hazards in hospitals encompass chemical, physical, psychosocial, and environmental risks. Common risks include exposure to pathogens, needlestick injuries, handling hazardous drugs, musculoskeletal strains, radiation exposure, emotional stress, incidents of workplace violence, airborne contaminants, and noise exposure (Ncube, Meintjes, & Chola, 2018).

Awareness of occupational hazards plays an adequate role in preventing injuries and diseases among hospital employees. Programmes that create awareness can be used to educate workers on positive attitudes and solidify safe working behaviours (Lugah et al., 2017). Raising awareness of occupational hazards among healthcare workers is essential for promoting a safe and healthy work environment (Abdulbaqi et al., 2024). Awareness of potential hazards enables HCWs to take proactive measures to minimise risks and prevent accidents or injuries. Awareness helps HCWs recognise symptoms of exposure-related illnesses early on, facilitating timely medical intervention. Distributing informational pamphlets, posters, and digital resources highlighting common hazards and preventive measures serves as a constant reminder and reference for HCWs (Assawadithalerd & Romin, 2020).

Awareness of occupational hazards provides a well-informed workforce and fosters a culture that prioritises safety, leading to improved overall health outcomes and reduced absenteeism. Awareness about the risks of exposure to pathogens, such as viruses and bacteria, emphasises the importance of infection control practices, vaccination, and proper handling of biohazardous materials. Therefore, HCWs need to be informed about the potential dangers of handling hazardous drugs, disinfectants, and sterilants, promoting safe storage, use, and disposal practices. Awareness of the emotional and psychological challenges, such as stress, burnout, and workplace violence, encourages HCWs to seek support, practice self-care, and utilise available resources for mental well-being (Akorede, 2021; Akorede, Ajayi, Toyin & Uwadia, 2021; Assawadithalerd & Romin, 2020; Baksh, Ganpat, & Narine, 2016).

Healthcare workers (HCWs) attend to clients and patients through a variety of preventive and curative services (Akorede, 2024). However, while their attention is focused on providing care, they are vulnerable to hazards that could be detrimental to their health and well-being. Professionals working in a hospital are seen as people who are capable of keeping their health

without help, and hospitals and other health facilities are also considered to be safer than other workplaces. As a result, only a few resources are allocated to the occupational health of the hospital workers. Therefore, the hospital environment presents healthcare employees with various occupational hazards, including exposure to infectious agents, needle sticks and sharp injuries, musculoskeletal disorders (MSD), exposure to carcinogenic agents, latex allergies, violence, and stress (Lugah, et al, 2017).

According to a report by the WHO (2020), healthcare facilities employ about 59.8 million healthcare workers worldwide, with two-thirds providing health services, while the remaining are management and supporting staff. Healthcare workers are exposed to several biological, chemical, physical, and psychosocial hazards from their day-to-day activities, which may in some instances be life-threatening (Dal-Poz, et al, 2017). 3 million percutaneous exposures occur annually among 35 million healthcare workers globally, with more than 90% of these occurring in countries with limited resources (Fingerhut et al., 2016). Health Care Workers (HCWs) are at risk of occupational health hazards (OHH) at the workplace like other workers in large facility operations and maintenance, including heavy metals and solvents, as well as those hazards that are unique to caring for ill patients. The likelihood of exposure to these hazardous agents by healthcare workers depends on the job category and the work environment (Abdulbaqi et al., 2024; Salvage et al., 2018).

Prajwail, Kundury and Sujay (2020) conducted a study on assessing the awareness of occupational safety and health hazards among nursing staff in a teaching hospital. The results of the study revealed that the participant response rate was 88% (150/170). Awareness of occupational safety and health hazards was shown as 43.4% for accidental falls at the workplace, 42.7% for complete awareness of latex allergies, 52.7% for dermatitis and respiratory problems, and 42% for complete awareness of accidental fires. 39.4%: burns; 36.7%: electric shocks; 59.4%: complete awareness of biological infections; 54%: respiratory disorders; 48.7%: skin allergies; and awareness of the usage of PPE to prevent: 67.4%: respiratory problems; 44%: accidental falls; 77.4%: importance of handwashing; 78%: significance of hepatitis B vaccination; 71.4%: usage of first aid kits in minor accidents; 60%: reporting incidents; and 58%: documentation system for incident reporting.

Another study was carried out by Awan, Afzal, Majeed, Waqas, and Gilani (2017) to assess the awareness, attitude, and practices among nurses concerning occupational hazards in a public hospital. The data was collected from Nawaz Sharif Social Security Hospital in Lahore, Pakistan. The data was collected from nurses by using questionnaires. The result showed that 67.5% of nurses had a high awareness of occupational hazards. Overall positive attitude towards occupational hazards was 56.91%, and overall positive attitude towards occupational safety practice level was 57.72%, which is insufficient. Abuduxike, Acar, Vaizoglu., Asut, and Cali (2021) carried out a study on the assessment of the knowledge, attitude, and practice towards standard precautions among health workers from a hospital in Northern Cyprus. The result of the study revealed that occupation was one of the predictors, as doctors were less likely to have satisfactory knowledge and practice compared to nurses. Out of 174 participants, 31.6% of them reported experiencing NSIs, and support staff were 71% less likely to experience NSIs compared to nurses and paramedics. The findings revealed a substandard adherence to standard precautions among participants, which highlighted the necessity of the provision of a periodic, tailored training programme based on the occupation and risk exposure.

The researchers observed that there are high rates of associated morbidity and mortality among health workers in teaching hospitals in Nigeria as a result of exposure to different hazards due to their activities. It was also observed that, according to the statistics of the entire teaching hospital in Nigeria, an estimated 50% of the health workers die from occupational illnesses, while about 30% of new cases of occupational diseases are diagnosed every year. This includes but is not limited to, sharp-related injuries, direct infections, stress, assault from patients and their relatives, allergies, back pain, and other musculoskeletal injuries (FMOH, 2023). This affects workers in various occupations as a result of their exposure to different types and varying degrees of hazards in the workplace.

It was also observed by the researchers that health workers in teaching hospitals in Nigeria encounter numerous occupational hazards. These include exposure to blood-borne pathogens from body fluids and needle-stick injuries, as well as potential exposure to diseases like tuberculosis (Akorede, Ajayi & Tawose, 2021). Additionally, they are at risk of accidents such as slips, trips, and confrontations with violent patients or their relatives. Ergonomic challenges like heavy lifting and psychosocial stresses associated with shift work and job-related stress further compound their risks. Notably, needle-stick or sharps injuries are prevalent among healthcare workers across several Nigerian states, leading to a significant number of hepatitis C, hepatitis B, and HIV infections (Ahmed & Newson-Smith, 2010). It is on these premises that the researchers intended to establish awareness of occupational hazards among healthcare workers in a teaching hospital in Nigeria.

Objectives of the Study

The objective of this study is to assess:

1. The awareness of occupational hazards among healthcare workers in teaching hospitals in Nigeria
2. The difference in awareness of occupational hazards among healthcare workers in teaching hospitals in Nigeria based on their cadre

Hypotheses

To achieve the purpose of the study the following hypotheses were formulated to guide the study:

1. There is no significant awareness of occupational hazards among healthcare workers in teaching hospitals in Nigeria
2. There is no significant difference in awareness of occupational hazards among healthcare workers in teaching hospitals in Nigeria based on their cadre.

Methodology

A descriptive survey research design method was adopted for this study. Descriptive research is a type of research that is used to describe the characteristics of a population. It collects data that is used to answer a wide range of what, when, and how questions on a particular population or group (Joge, 2021). The population of this study consists of twenty-five thousand, five hundred and fifty (25,550) healthcare workers of Teaching Hospitals in Nigeria (Federal Ministry of Health [FMOH], 2023). The sample size for this study is three hundred and forty-eight (348), which was selected among healthcare workers in teaching hospitals in Nigeria. The sampling techniques for this study consist of multi-stage sampling techniques. Therefore, the stages for sampling in this study were as follows:

Step I**:** Teaching hospitals in Nigeria are clustered in six (6) geopolitical zones in Nigeria, namely: North-Central, North-East, North-West, South-East, South-South, and South-West.

Step II: A simple random sampling technique was used to select one (1) teaching hospital each from six (6) geopolitical zones in Nigeria, making up a total of six (6) teaching hospitals for the study

Step III: A simple random sampling technique was also used to select five (5) Departments from each selected teaching hospital; these include: Medicine, Surgery, Anaesthesia, Nursing, Laboratory, Physiotherapy, and Pharmacy.

Stage IV: The proportionate sampling technique was used to select ten per cent (10%) of the respondents as the sample size from each of the five (5) most hazardous Departments in the randomly selected teaching hospitals.

Stage V: The respondents in each healthcare worker's department were selected using the availability sampling technique.

A researcher-designed structured questionnaire titled "Awareness of Occupational Hazards among Healthcare Workers Questionnaire" (AOHHWQ) was used to obtain qualitative data from the selected respondents. The questionnaire consists of two (2) sections (sections A and B); section A consists of 5-items on the socio-demographic characteristics of the respondents; section B consists of 10-items on awareness of occupational hazards among healthcare workers of teaching hospitals in Nigeria; A four-point modified Likert scale was scored as follows: strongly Agreed, 4 points. Agreed 3 points, disagreed 2 points, and strongly disagreed 1 point. The instrument was validated by three experts in the Health Education field. A reliability of 0.60 was obtained using the split-half method from 35 healthcare workers at Modibo Adama University Teaching Hospital Yola, Adamawa State, and data collected was subjected to a statistical test using Spearman Brown's Prophecy Formula. Seven hundred and eighty-seven (348) copies of the questionnaire were administered to the healthcare workers of a teaching hospital in Nigeria, with the help of four (4) research assistants, who were fully briefed on how to administer and collect the questionnaire from the respondents. Questionnaire forms were administered to healthcare workers in their respective departments and collected back through the research assistants. The exercise lasted for only three (3) weeks.

Result

An Inferential statistic of one sample t-test and Analysis of Variance (ANOVA), were used to test the postulated null hypotheses for the study. An alpha level of 0.05 was used as a criterion for either retaining or rejecting the null hypotheses.

Hypotheses One: There is no significant awareness of occupational hazards among healthcare workers in teaching hospitals in Nigeria.

Table 1: Summary of One Sample t-test on Awareness of Occupational Hazards among Healthcare Workers in Teaching Hospitals in Nigeria

Variable	N	Mean	SD	SE	df	t	P
Awareness of occupational hazards	340	32.94	5.15	0.28	339	118.047	.000
Test mean	340	2.50					

t=118.047, df:339; P<0.05

Table 1 revealed the summary of one sample t-test on awareness of occupational hazards among healthcare workers in a teaching hospital in Nigeria. The table shows the calculated mean of 32.94, which is greater than the decision mean of 2.50. This means that healthcare workers in teaching hospitals in Nigeria are aware of occupational hazards. The statistical computation of the sample t-test also indicated that there was significant awareness of occupational hazards among healthcare

workers in a teaching hospital in Nigeria (t = 118.047, df = 339; P<0.05). Therefore, the hypothesis tested is rejected, because the p-value of .000 is less than the alpha-value of 0.05.

Hypothesis Two: There is no significant difference in awareness of occupational hazards among healthcare workers in teaching hospitals in Nigeria based on their cadre.

Table 2: Summary of One-Way ANOVA on difference in Awareness of Occupational Hazards among Healthcare Workers in Teaching Hospitals in Nigeria based on their cadre

	Sum of Squares	df	Mean Square	F	P
Between Group	13.279	6	2.214	.591	.740
Within Group	1249.476	333	3.753		
Total	**1262.755**	**339**			

The result in Table 2 indicated no difference in awareness of occupational hazards among healthcare workers in teaching hospitals in Nigeria based on their cadre. Therefore, the statistical computation of a one-way ANOVA shows that there is no significant difference in awareness of occupational hazards among healthcare workers in teaching hospitals in Nigeria based on their cadre (F =.591, df = 6,333; P =.740). The hypothesis stated that there was no significant difference in awareness of occupational hazards among healthcare workers in teaching hospitals in Nigeria based on their cadre and is therefore retained because the p-value of .740 is greater than the alpha-value of 0.05.

Discussion

The outcome of this study revealed that there was significant awareness of occupational hazards among healthcare workers in teaching hospitals in Nigeria (t = 118.047, df = 339; P<0.05). This finding is in line with the study conducted by Prajwail, Kundury, and Sujay (2020) on assessing the awareness of occupational safety and health hazards among nursing staff in a teaching hospital. The results of the study revealed that the participant response rate was 88% (150/170). Awareness of occupational safety and health hazards was shown as 43.4% for accidental falls at the workplace, 42.7% for complete awareness of latex allergies, 52.7% for dermatitis and respiratory problems, and 42% for complete awareness of accidental fires. 39.4%: burns; 36.7%: electric shocks; 59.4%: complete awareness of biological infections; 54%: respiratory disorders; 48.7%: skin allergies; and awareness of the usage of PPE to prevent: 67.4%: respiratory problems; 44%: accidental falls; 77.4%: importance of handwashing; 78%: significance of hepatitis B vaccination; 71.4%: usage of first aid kits in minor accidents; 60%: reporting incidents; and 58%: documentation system for incident reporting.

The result of this study revealed that there is no significant difference in awareness of occupational hazards among healthcare workers in teaching hospitals in Nigeria based on their cadre (F =.591, df = 6,333; P > 0.05). This finding is in line with the study carried out by Awan, Afzal, et al (2017) to assess the awareness, attitude, and practices among nurses concerning occupational hazards in a public hospital. The data was collected from Nawaz Sharif Social Security Hospital in Lahore, Pakistan. The data was collected from nurses by using questionnaires. The result showed that 67.5% of nurses had a high awareness of occupational hazards. Overall positive attitude towards occupational hazards was 56.91%, and overall positive attitude towards occupational safety practice level was 57.72%, which is insufficient. This finding is not in line with the study carried out by Abuduxike et al. (2021) on the assessment of the knowledge, attitude, and practice towards standard precautions among health workers from a hospital in Northern Cyprus. The result of the study revealed that occupation was one of the predictors, as doctors were less likely to have satisfactory knowledge and practice compared to nurses. Out of 174 participants, 31.6% of them reported experiencing NSIs, and support staff were 71% less likely to experience NSIs compared to nurses and paramedics. The findings revealed a substandard adherence to standard precautions among participants, which highlighted the necessity of the provision of a periodic, tailored training programme based on the occupation and risk exposure.

Conclusions

Based on the findings of this study, the following conclusions were drawn:

1. Healthcare workers at a teaching hospital in Nigeria are aware of occupational hazards because the hypotheses test was significant.
2. There was no difference in awareness of occupational hazards among healthcare workers in teaching hospitals in Nigeria based on their cadre because the difference was not insignificant.

Recommendations

Based on the findings of this study, the following recommendations were made:

1. The Federal Ministry of Health, in partnership with non-governmental organisations, should regularly conduct seminars and workshops for healthcare workers in teaching hospitals across Nigeria. This initiative aims to enhance

awareness and adherence to occupational hazards and safety practices, ensuring sustained and effective safety measures.

2. Teaching hospitals in Nigeria should organise periodic refresher courses and workshops to reinforce safety practices, irrespective of the cadre. This will help in updating knowledge and addressing any gaps that might arise over time.

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