

Level of Awareness and Prevention of Occupational Hazards Among Health Care Workers in Ringroad State Hospital Ibadan, Oyo State, Nigeria

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Abstract

The study assessed the awareness and prevention of occupational hazards among health care worker in Ring Road State Hospital Ibadan Oyo State. This study adopted the descriptive cross sectional research design which involves collecting, analyzing, and interpretation of the quantitative data in the study. Population for the data was 318 health workers of Ring road selected from various categories of health workers in the facility, 180 health workers were recruited through probability sampling technique to fully participate in the study. A validated questionnaire was developed and used for gathering information on the level of awareness of and prevention of occupational hazards among health workers. The research question and hypotheses were subjected to descriptive and inferential analysis. The results showed that over half of the respondents were registered nurse/midwives, and females with other cadre less than half, married (61.7 %) with 5 years median work experience (70.3 %). Most respondents (90.1 %) were aware of hazards among health workers, identified recapping used needles as a risky practice (70%) and recognized that effective hand washing prior to, and after every clinical procedure in preventing cross infection (100%). Study revealed no significant relationship between the cadre of health workers and their level of awareness of occupational hazards ($x^2 = 29.539$, $df = 12$, $p = .147$). Whereas there a significant relationship between awareness and prevention of occupational hazards among health workers ($x^2 = 32.454$, $df = 5$, $p =$

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.009). In conclusion, the high level of awareness demonstrated by respondents was at variance with practice. It was recommended among others that adequate provision of appropriate safety kits, their timely replacement when worn out and updated job aids should be made available to all cadres of staff based on their job schedule.

Keywords: Awareness, Prevention, Health Care Workers, Occupational hazards,



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Introduction

An occupational hazard is a dangerous phenomenon, substance, human activity or condition that may cause loss of life, injury or other health impacts at the workplace and it is an injury sustained from falls, long periods of standing due to job demands, lifting heavy patients and objects needle pricks and contact with infected body fluids from patients (WHO, 2016). Healthcare workers constituting 12% of the working population worldwide operate in an environment that is considered to be one of the most hazardous occupational settings.

According to Orji, et al (2014) hazardous agents include biological agents, chemical agents, disinfectants and sterilants, antibiotics, hormones, antineoplastic, waste aesthetic gases, latex gloves, aerosolized medications (e.g., ribavirin) and hazardous waste. Healthcare employees will find these hazardous agents almost everywhere they turn; the operating room, maintenance, the laundry, food services, the laboratory, radiology, even office areas. It requires carefulness and consciousness efforts escape the dangers of these occupational hazards that threaten healthcare worker lives, safety, and well-being (WHO, 2016)

The World Health Organization (WHO, 2016) also reported that 250 million cases of work-related injuries occur each year and it ranges from, sprain and strains, cuts from sharp equipment, burns from disinfectant and sterilant, exposures to infectious disease, toxic substances, back injuries and radiation exposures. Similarly, The International Labour Organisation (ILO, 2019) reported that over 374 million workers fall ill due to occupational hazards and exposures, while more than 1 million workers have died because of occupational hazards. The current trend about occupational hazard showed that blood borne pathogens which include HIV, HBV and Hepatitis C Virus (HCV) are the commonly acquired occupational hazards in developing countries (Abeje & Azage, 2015).

In Nigeria, the limited studies conducted have demonstrated that healthcare workers exposure to biological, chemical and physical and ergonomic occupational hazards is high (Mosburg, 2019). Nigeria has recorded 238 fatalities across various scores of the economy within the last 3 years from available records the year 2015 recorded the highest number of work-related hazards (Occupational safety and health, 2016). Evidence of inadequate level of occupational hazard awareness among health works was seen in Oyo state by the researcher in Ring road state hospital Ibadan Oyo state where there was record of a staff nurse infecting some Nurses with the new strain of corona virus due to the fact that they were careless in handling the patient because the Covid-19 patient happened to be their colleague. It was also noticed that some of our health assistance use bare hand to discard waste in the hospital. In addition, sharp boxes are not enough in our health facility thereby increased rates of needle prick by the health assistance. Even the laundry workers were still seen packing used bed linen without adequate protection, so these few evidences among many others showed that health workers have inadequate level of awareness and needs more emphasis on the importance of prevention.

Additionally, statistics by (NCDC, 2018) showed another case which occurred on 20th July 2014 when Nigerians woke up to the frightening news of the first case of Ebola ever recorded in Nigeria when an infected Liberian-American lawyer, Mr Patrick Sawyer, arrived by aeroplane into Lagos Nigeria. The disease quickly spread among health workers because of the contact they had with the index case. Mortality was high and one of those who died was Dr Stella Ameyo Adedevoh a consultant physician and in general about 100 health care workers were infected and about 50% died. Also Covid19 the new pandemic disease has affected many health care workers due to the work place hazard which could be as a result of low inadequate P.P.Es, inadequate awareness, wrong facility settings and so on (WHO, 2016).

The multiplying effects of occupational injuries and diseases among health workers include economic loss, physical loss and psychological disorders such as stress and depression. These have an overall negative impact on the workers, their families and the nation at large.

All of these have prompted the researcher to carry out this research work and the result will be taken to stake holders in order to inform occupational health and safety policy agency to organise programmes for all health workers in Ring Road State Hospital Ibadan, Oyo state. The study specifically:

1. assessed the level of awareness of occupational hazard among health workers;
2. determined the level of prevention of occupational hazard by the health workers; and
3. identified the types of occupational hazard experienced by health workers.

Research Questions

The following research questions were raised for this study;

1. What is the level of awareness of all the health workers on occupational hazards?
2. What is the level of prevention among the health workers?
3. What are the types of occupational hazards experienced by the health worker?

Research Hypotheses

The null hypotheses below were postulated for this study;

1. There is no significance relationship between the categories of health worker and their level of awareness of occupational hazards.
2. There is no is significant relationship between awareness and prevention of occupational hazards.

Methodology

The research design adopted was a descriptive survey study in an attempt to assess the level of awareness and Prevention of Occupational Hazard among Health Workers of Ring Road State Hospital Ibadan, Oyo State. Descriptive survey study was used because it was best suited to answer the 'what' and 'how' research questions in the study. The target population includes all health workers of Ring Road State Hospital Ibadan, Oyo State. These are Doctors, Nurses, Nursing assistants, CSSD workers (laundry workers), Pharmacists, Laboratory Scientist, physiotherapist departments, Community health extension workers Radiologists, laundry worker, maxilla facial workers, house officers and intern nurses and others. The researcher established the population to be three hundred and seven (318) from the administrative department.

A total number of 180 health care workers were recruited from each categories of health worker in RRSB Ibadan Oyo State to participate in the study. Purposive Sampling technique was then used to select respondent for inclusion in the study. To assess the level of awareness and prevention of occupational hazard among health workers in RRSB, the instrument for the study was a semi structured questionnaire to elicit information from the respondent. The instrument was pre-tested among eighteen (18) participants from two departments in Ring Road State Hospital, Ibadan, Oyo State. All the eighteen (18) copies distributed was recovered. The reliability of the instruments was ascertained in order to check the internal consistency of the instrument. The psychometric property of the instrument was determined using Cronbach Alpha reliability. The reliability coefficient of cadre in response to level of awareness of health workers was 0.841, knowledge on level of prevention and compliance yielded 0.941. This shows that the instrument is highly reliable and appropriate for the study.

Data collected was analysed both qualitatively and quantitatively using the SPSS computer software and results presented in tables as percentages and frequencies tables mean score and standard deviation was used to analyse demographic data of participant research question, inferential statistics was used to test the two hypotheses generated at 0.05 level of significance

Results

Research Question 1: What is the level of awareness of all the health workers on occupational hazards?

Table 1: Level of awareness of all the health workers on occupational hazards

S/N	Statements	Very much	Somewhat	Neutral	Very less	Nothing
1	Occupational hazards are dangers and accidents that occur in workplace?	123 (76.4)	14 (8.7)	11 (6.8)	7 (4.3)	6 (3.7)
2	Occupational hazards are; Physical hazards (b) Chemical hazards, (c) Biological hazards, (d) Mental hazards, (e) Ergonomic Hazard.	95 (59.0)	35 (21.7)	19 (11.8)	9 (5.6)	3 (1.9)
3	Use of PPEs result in significant physiological or physical stresses to healthcare workers.	69 (42.9)	56 (34.8)	19 (11.8)	10 (6.2)	7 (4.3)
4	Occupational hazard affects the mental, physical, and well-being of health workers?	90 (55.9)	49 (30.4)	14 (8.7)	6 (3.7)	2 (1.2)
5	The standards for the production of PPEs re-evaluation be considered in the warmer climate in Africa to promote adherence.	79 (49.1)	62 (38.5)	15 (9.3)	2 (1.2)	3 (1.9)
5	Health workers are at risk of occupational hazards	100 (62.1)	35 (21.7)	18 (11.2)	8 (5.0)	-
6	The most common means of contracting your patient's illness. Can be(a) needle prick (b) talking to patient (c) touching patient (d)blood spill on skin.	113 (70.2)	24 (14.9)	16 (9.9)	6 (3.7)	2 (1.2)
7	Slip, Trip, and Fall is an example of occupational hazard you have ever experience while working	81 (50.3)	52 (32.3)	13 (8.1)	8 (5.0)	7 (4.3)
8	Stress increase accident rate during work	74 (46.0)	52 (32.3)	23 (14.3)	5 (3.1)	7 (4.3)
9	Can stress result in poor job performance	74 (46.0)	58 (36.0)	19 (11.8)	8 (5.0)	2 (1.2)
10	Close relationship with an infected patient guarantee freedom from contacting infection?	66 (41.0)	55 (34.2)	22 (13.7)	9 (5.6)	9 (5.6)
11	Bed linen used by patient can cause biological occupational hazards	69 (42.9)	56 (34.8)	18 (11.2)	10 (6.2)	8 (5.0)
12	Saving of life first in emergency cases comes before the use of PPES	82 (50.9)	41 (25.5)	19 (11.8)	10 (6.2)	9 (5.6)
13	Often bending without proper posture is a physical hazard.	88 (54.7)	46 (28.6)	17 (10.6)	6 (3.7)	4 (2.5)

Table 1 reveals level of awareness of all the health workers on occupational hazards. More than three-quarter (76.4%) are very much aware that occupational hazards are dangers and accidents that occurs in workplace. (59%) knew that occupational hazards are; Physical hazards (b)Chemical hazards, (c) Biological hazards,(d) Mental hazards,(e) Ergonomic

Hazard; 69. (42.9%) showed the use of PPEs result in significant physiological or physical stresses to healthcare workers, and 90 (55.9%) knew that Occupational hazard affect the mental, physical, and well-being of health workers. Also, 79 (49.1%) consented that the standards for the production of PPEs should therefore be re-evaluated to take into consideration the warmer climate in Africa to promote adherence; 100 (62.1%) knew health workers are at risk of occupational hazards; 113 (70.2%) said the most common means of contracting your patient’s illness. Can be(a) needle prick (b) talking to patient (c) touching patient (d) blood spill on skin; and 81 (50.3%) knew that slip, trip, and fall are examples of occupational hazard ever experienced while working. The table further revealed that stress increase accident rate during work (46%), stress result in poor job performance (46%), Close relationship with an infected patient guarantee freedom from contacting infection (41%), Bed linen used by patient cannot cause occupational hazards (42.9%), Saving of life first in emergency cases comes before the use of PPES (50.9%), and often bending without proper posture (54.7%).

Table 2: Level of awareness of all the health workers on occupational hazards

Category	Criteria	Frequency	%	Remark
45-65	High	113	70.2	Respondents with high awareness level of occupational hazards
23-44	Moderate	48	29.8	Respondents with moderate awareness level of occupational hazards
1-22	Low	-	-	Respondents with low awareness level of occupational hazards
N = 161; Mean = 48.7; SD = 7.63				

The result presents the level of awareness of all the health workers on occupational hazards was categorized as high (45-65), moderate/average (23-44) and low (1-22). Majority 113 (70.2%) of the respondents had high awareness level of occupational hazards and the remaining 48 (29.8%) had low awareness level of occupational hazards. Therefore, it could be said that the awareness level of occupational hazards among health workers is high.

Research Question 2: What is the level of prevention among the health workers?

Table 3: Level of prevention among the health workers

S/N	Items	SA	A	U	D	SD
1	Hand washing is the oldest, simplest, and cheapest way to control the nosocomial spread of infectious organisms	96 (59.6)	56 (34.8)	8 (5.0)	-	1 (0.6)
2	Wash hands when coming into contact with blood or body fluids	87 (54.0)	66 (41.0)	7 (4.3)	1 (0.6)	-
3	Provide lifting aids for the lifting and transport of heavy patients	84 (52.2)	66 (41.0)	8 (5.0)	2 (1.2)	1 (0.6)
4	Routinely use barriers (such as gloves and gowns) and Gloves should be changed after patient contact and before administering	76 (47.2)	69 (42.9)	12 (7.5)	4 (2.5)	-



	care to another patient.					
5	counselling services should be available to workers exposed to post-traumatic stress at all levels	85 (52.8)	62 (38.5)	9 (5.6)	5 (3.1)	-
6	Follow infection control precautions regarding blood, body fluids and tissue are infectious	88 (54.7)	56 (34.8)	11 (6.8)	5 (3.1)	1 (0.6)
7	Handle sharp objects with extreme care and use special safety receptacles to store used needles	103 (64.0)	45 (28.0)	8 (5.0)	4 (2.5)	1 (0.6)

The outcome of the research question measuring the level of prevention among the health workers revealed that 96 (59.6%) and 56 (34.8%) strongly agreed and agreed respectively that hand washing is the oldest, simplest, and cheapest way to control the nosocomial spread of infectious organisms; 87 (54%) and 66 (41%) strongly agreed and agreed that washing of hands when in contact with blood or body fluids is important. Also, 84 (52.2%) and 66 (41%) strongly agreed and agreed that provision of lifting aids for the lifting and transport of heavy patients is important.

It was revealed further that 85 (52.8%) and 62 (38.5%) strongly agreed and agreed that counselling services should be available to workers exposed to post-traumatic stress at all levels; 88 (54.7%) and 56 (34.8%) followed infection control precautions regarding blood, body fluids and tissue are infectious; while 103 (64%) and 45 (28%) handled sharp objects with extreme care and use special safety receptacles to store used needles. It could be deduced that the level of prevention among the health workers is high.

Research Question 3: What are the types of occupational hazards experienced by the health worker?

Table 4: The types of occupational hazards experienced by the health worker

SN	Hazards		Frequency	Percent
1	Physical	Sharp injuries /needle prick	104	64.6
		Cut	48	29.8
		Heat	6	3.7
		ionizing and non-ionizing radiation	3	1.9
		Total	161	100.0
2	Biological	Bacterial infections	71	44.4
		Virus	15	9.3
		Blood borne pathogens	10	6.2
		Fungi infections	65	40.4
		Total	161	100.0
3	Ergonomic	Slip	64	39.8
		trip and fall	78	48.4
		impart force	8	5.0
		Musculo skeletal accident	11	6.8
		Total	161	100.0
4	Chemical	skin irritation by chemicals	117	72.7

		Blindness	4	2.5
		Explosion	1	.6
		Acids bases corrosion	39	24.2
		Total	161	100.0
5	Psycho-social	Work related stress	108	67.1
		Threat of violence	5	3.1
		Emotional and verbal abuse	25	15.5
		Lack of job satisfaction	23	14.3
		Total	161	100.0
6	Safety	fall due to heavy metals	141	87.6
		Electrocution /burns	1	.6
		Loss of limbs/fracture	11	6.8
		Fire outbreak	8	5.0

Table 4 reveals the types of occupational hazards experienced by the health worker. The occupational hazards are physical hazards, biological hazards, ergonomic hazard, chemical hazards, psycho-social hazards, and safety hazards. Out of all the hazards, the health workers care workers are more prone to safety hazards (141; 87.6%) compared to chemical hazards (117; 72.7%), psycho-social hazards (108; 67.1%), physical hazards (104; 64.6%).

Test of Hypotheses

Hypothesis 1: There is no significant relationship between the cadre of health workers and their level of awareness of occupational hazards.

Table 5: Relationship between the cadre of health workers and their level of awareness of occupational hazards

		level of awareness			X ²	df	p
		High	Moderate	Low			
Profession/ Designation	Nurses	51	10	1	29.539	12	.147
	Doctor	13	1	1			
	Pharmacy	2	-				
	Physiotherapy	6	2				
	Lab scientist	3					
	Health assistance	20	4	1			
	Radiology	38	5	3			

The results in Table 5 revealed no significant relationship between the cadre of health workers and their level of awareness of occupational hazards ($x^2 = 29.539$, $df = 12$, $p = .147$). This implies that the cadre of health workers and their level of awareness of occupational hazards are not related. Therefore, the hypothesis which stated "There is no significant relationship between the cadre of health workers and their level of awareness of occupational hazards" is accepted.

Hypothesis 2: There is no is significant relationship between awareness and prevention of occupational hazards.

Table 6: Relationship between awareness and prevention of occupational hazards

	Awareness					Total	X ²	Df
	I am not aware at all	I am very less aware	Neutra l	I am somewh at aware	Am very much aware			
Preventio n	Strongly Dis.	-	-	-	-	7	32.454	.009
	Disagree	1	1	-	-	3		
	Uncertain	1	3	1	-	6		
	Agree	1	3	3	6	42		
	Strongly agree	1	-	7	5	70		
Total	4	7	11	11	122	161		

The results in Table 6 revealed a significant relationship between awareness and prevention of occupational hazards ($x^2 = 32.454$, $df = 16$, $p = .009$). This implies that the awareness and prevention of occupational hazards are related. Therefore, the hypothesis which stated "There is no significant relationship between awareness and prevention of occupational hazards" is rejected.

Discussion

The outcome of this study showed that the level of awareness of all the health workers on occupational hazards was high. Almost three-quarter of the respondents showed high awareness level of occupational hazards. The high level of knowledge shown by respondents in this study could be as a result of fear of occupational infections and illnesses which could be fatal and life threatening in some cases. Knowledge according to oxford dictionary is information and skills, acquired through experience and/or education. This finding is in line with Manyele et. al (2015) who found out that more respondents reported high levels of awareness of occupational hazards and universal precautions.

The outcome of this study revealed a high level of prevention among the health workers. For instance, almost all the respondents agreed that hand washing is the oldest, simplest, and cheapest way to control the nosocomial spread of infectious organisms, and that washing of hands when in contact with blood or body fluids is important. The high level of prevention of occupational hazard by health care workers is also reflected in preview studies by Orji et al., (2014), Manyele et al. (2015) and Amosun et al., (2011).

It was found from this study that the types of occupational hazards experienced by the health worker are physical hazards, biological hazards, ergonomic hazard, chemical hazards, psycho-social hazards, and safety hazards. Out of all the hazards, the health workers are more prone to safety hazards compared to others. Therefore, occupational safety in healthcare facilities plays a significant role in the lives of care providers and promotes the quality of the patient care. Occupational hazards tend to increase daily among health worker. This is in support of Prajwal et al. (2020) that healthcare workforce gets exposed to physical, chemical, biological, and psychological hazards while discharging their duties. This study lends credence to the findings of Nwankwo (2018) on occupational Health Hazards and Health outcomes among health workers, the determinants and compliance to safety standards in the health facilities in Kigali City, Rwanda. Her study showed that the most prevalent proportion of occupational hazards cases was high in safety hazards compared to others. She reported

that working accidents accounted for 62.4%, slips and falls was 41% and Injury with Blood borne pathogen was 32.9%.

The results revealed no significant relationship between the categories of health care workers and their level of awareness of occupational hazards. This implies that the cadre of health workers and their level of awareness of occupational hazards are not related. The result also revealed a significant relationship between awareness and prevention of occupational hazards.

Conclusion

By profession, healthcare workers (HCWs) attend to clients and patients through a variety of preventive and curative services. However, while their attention is focused on providing care, they are vulnerable to hazards that could be detrimental to their health and well-being. This is especially true in developing countries where health service delivery is fraught with minimal protective precautions against exposures to numerous fumets and infectious agents. This study assessed the awareness and prevention of occupational hazards among health care worker in Ring Road State Hospital Ibadan Oyo State, Nigeria.

Evidenced from this study, HCWs were aware of, and recognized variety of occupational hazards, such as physical hazards, chemical hazards, biological hazards, psychosocial hazards and ergonomic hazards. Most of them were aware about preventive safety precautions, mostly through job aids. It is therefore, concluded that there is need for regular training on safety guidelines an enforcement of standard/universal safety practices by healthcare workers so as to reduce incidences of occupational injuries.

Recommendations

Based on the outcome of this study, the following recommendations are made:

1. Adequate provision of appropriate safety kits, their timely replacement when worn out and updated job aids should be made available to all cadres of staff based on their job schedule.
2. Through policy, pre-employment and routine training and safety precautionary drills should be institutionalised for health care workers on occupational hazards and safety practices.
3. Full immunization of all HCWs against vaccine preventable, contagious diseases, timely documentation of all cases of exposure to occupational hazards.
4. The post exposure prophylaxis unit in hospitals should be strengthened for immediate response to manage the aftermaths of exposure of HCWs to occupational hazards.
5. Besides, enforcement of existing laws on occupational safety at work places should be monitored to increase adherence by public and private healthcare providers. This should also include strategic policy level measures to increase personnel shortages in the HCFs towards achieving the personnel-patient ratio in all HCFs.

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