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An Assessment of Knowledge among Healthcare Professionals on Occupational Health Hazards at New Abirem Government Hospital, Ghana

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Authors' contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

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ABSTRACT

Background: Healthcare professionals render various healthcare services to patients. However, in their duty to patients, they are exposed to occupational hazards that could be detrimental to their health and safety. In order to minimize exposure to these occupational hazards and prevent their detrimental effects on healthcare professionals, it is fundamental to assess the level of knowledge healthcare professionals have with regards to these health hazards.
Objectives: The study was intended at assessing the knowledge of healthcare professionals at New Abirem Government Hospital on occupational health hazards and safety practices at the hospital.
Methodology: A cross-sectional quantitative study approach was adopted in this study. A total of 171 participants were recruited from within the staff at the New Abirem Hospital. Simple random sampling technique was used to select the total 171 from the staff of 300. Questionnaires were administered to obtain data for the study and the administration body was interviewed. For data analysis, the quantitative data was edited and cleaned using Statistical Package for Social Sciences (SPSS) version 20. Basic descriptive analysis was thereafter performed. In the analysis and interpretation of the quantitative data, the statistical Mean was used.

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Results and Findings: The results showed that 120 (70.2%) participants agreed that, knowledge of occupational health and safety is the responsibility and right of both employer and employee. 33 (19.3%) of the participants were neutral, 18 (10.5%) disagreed with the assertion. Furthermore, 129 (75.4%) of the participants agreed that occupational hazards always relate to work activities that increase the risk of injury. 23 (13.5%) of the respondents were neutral in their response whiles 19 (11.1%) disagreed with the assertion. Additionally, 117 (75.4%) of the participants stated they were obliged to report work-related accidents or injuries even though 24 (14%) disagreed. Nevertheless, 114 (66.7%) agreed that the most effective accident and disease prevention begins when work processes are still in the design stage. Similarly, 126 (73.7%) respondents agreed that healthcare professionals are at high risk of occupational hazard. The study found out that there were no knowledge of laid down health and safety policies in place at the hospital. This was quite unexpected as the healthcare facility is considered a high-risk facility. There were no in-house health and safety personnel. The hospital depended heavily on periodic trainings offered to staff to keep them up-to-date on health and safety issues. The study also revealed major challenges such as lack of funding, understaffing, bureaucracy and non-compliance to internal rules and regulations as barriers to ensuring effective occupational health and safety.

Conclusion: Healthcare professionals are well knowledgeable of occupational hazards at the facility. The highest form of occupational hazard that the healthcare professionals are exposed to is chemical hazards. There are several problems militating against the top management in improving upon the occupational safety at the workplace. However, more could be done to ensure a more secured work environment for employees of the hospital.

Keywords: Healthcare professionals; occupational health; Ghana; hazards.

1. INTRODUCTION

Over 2.3 million workers around the world succumb to work-related accidents or diseases each year (International Labour Organization, 2021). According to the International Labour Organization, this figure corresponds to 6000 deaths every single day. The report further posits that workplace hazards alone cause 651, 279 deaths a year. Hazards have been defined as any source of potential damage, injury or adverse health effect on something or someone (afn.ca, 2015). A hazard can dangerously affect the health of an individual or cause damage to property or equipment. Some examples are a lit cigarette, a wet floor, direct exposure to the sun, or exposure to toxic chemicals. Hazards expose individuals and property or equipment to risk [1-5]. Risk is the chance or probability that a person will be harmed or experience an adverse health effect if exposed to a hazard. For example, there is a risk of developing lung cancer from smoking cigarettes, slipping on the wet floor and breaking a bone, or developing skin cancer from long-term exposure to the sun. In this regard, occupational hazards refer to workplace activities that increase the risk of injury, ill-health or death [6-11]. Occupational hazards could be fatal or non-fatal. In Dublin, in Ireland, a total of 9,199 fatal and non-fatal injuries to workers and non-workers were reported to the Health and Safety Authority in 2019 (Health and Safety Authority, 2019).

Large workforce environments are more prone to higher risks due to complex work systems and higher interactions among workers (Okechuku, 2014). Healthcare facilities can be classified as high risk areas of work due to the large number of workers employed in the healthcare industry [12-18]. Healthcare facilities provide healthcare services such as counselling, clinical, obstetrics and gynaecological services, surgical, psychiatric consultations and treatment services for the healthy, sick and the injured. In most developed countries, healthcare takes more than 10% of the gross domestic product [19]. In the United States, the healthcare sector is the country's largest employer, with over 20 million employees (United States Census Bureau, 2020). The United Kingdom had 1.9 million people employed in the healthcare workforce as of 2018 (Office for National Statistics, 2019). In Ghana, it is estimated that 69, 000 people are engaged in healthcare services and delivery nationwide as of 2011 (Ministry of Health, 2011). These figures give credence to the vast number of people employed in the healthcare sector. Like any other high-risk workplace, healthcare facilities are characterized by high levels of exposure to health hazards that significantly endanger the health and life of healthcare workers [20-25]. The presence of and continuous interactions and contact with diseased patients, contaminated medicines, dangerous chemicals, infected equipment among other factors, exposes the healthcare

worker to serious occupational hazards. Therefore, occupational health and safety knowledge, practice and adherence are a matter of urgency by health institutions.

1.1 Problem Statement

Healthcare workers are bound by duty to attend to clients and patients through various preventive and curative services. However, while their attention is focused on providing care, they are exposed to variant hazards that could be detrimental to their health and well-being as well as the health of their loved ones [26-33]. Such hazards include hazardous agents, ergonomic hazards, physical hazards, and psychological hazards. Many healthcare practitioners have contracted deadly diseases and infections whilst others have sustained fatal injuries in the line of duty [34-42]. In the United States of America, over 2, 900 health workers died in the line of duty in a single year alone (Jewett et al., 2020). This shows the grave damage exposure to hazards cause. However, an awareness of occupational health and safety protocols at the workplace will go a long way to reduce work-related accidents or diseases. Hence, it is important to assess the level of knowledge among healthcare professionals on occupational health hazards using New Abirem Government Hospital as a case study.

2. RESEARCH METHODOLOGY

2.1 Research Design

This study adopted a cross-sectional quantitative study approach. This allowed for a broader study, involving a greater number of subjects, and enhancing the generalization of the results and allows for greater objectivity and accuracy of results.

2.2 Study Area

The study was undertaken at New Abirem in the Eastern Region of Ghana. New Abirem is the capital of the Birim North District in the Eastern Region. New Abirem has a population of over 6, 123 people. The Birim North District is predominantly agrarian with close to 73.5% of the entire labour force engaged in agriculture and its related activities. New Abirem hosts such modern resorts as Biege Village Golf Resort and Spa making it an attractive tourist's destination. The district is also home to the mining giant, Newmont Golden Ridge Limited.

2.3 Dependent Variable

The dependent variable of the study is knowledge of occupational health hazards amongst healthcare professionals at Abirem Government Hospital.

2.4 Independent Variables

The independent variables that can affect the outcome of the study include;

i. Socio-demographic factors such as age, sex, level of education, and years of experience.

ii. Organizational factors such as employer's commitment, regulation and monitoring, training on occupational health and safety protocols and guidelines.

iii. Psychosocial factors such as workload, shift system, report system and stress management systems.

2.5 The Study Population

The population of the study constituted all employees at the New Abirem Government Hospital. There are 300 staff currently working in different departments at the hospital spanning from the administrative management department, ophthalmic department, dental department, paediatric department, neonatal care department, ENT (Ear, Nose and Throat) department, accounts department, procurement department, and security department.

2.6 Sample Size and Sampling Procedure

The sample size was calculated using the formula provided by Yamane (1967). The formula is based on the theory that a simple random sampling affords each individual an equal chance of being selected with a probability of 0.05 and a confidence interval of 95%.

According to this formula, the sample size is computed by:

n = N / (1 + Ne^2),

where:
n: sample size
N: the study population, N=300
e: precision, 5% (0.05)

According to the database of the New Abirem Government Hospital, the hospital has 300 active staff.

Therefore the sample size for the study is given by:

n = 300/ (1+ 300(0.05) ^2) = 171

Adding a 10% of sample size as security against non-responsive participants gives

n=171 + (10/100×171) =188

2.7 Sampling Methods

The simple random sampling technique was used to make statistical inferences about the population. By this technique, the following steps were followed; A population size of 300 was recruited. The Yamane (1967) sample size calculation method was used to determine the sample size. This produced 171 as the sample size. 10% of the total sample size was added to the sample size to make up for non-responsive participants. This brought the total sample size to 188. The random number method was used to select the participants of 188 from the population of 300. With this method, all staff members, according to the hospital database, were given numbers from 1 to 300 on separate papers. These papers were folded, put together and mixed up in a bowl. The researcher then picked the folded papers at random without replacement. Subsequently, a participant whose correlated number was picked was selected for inclusion in the data collection.

2.8 Instruments and Data Collection Procedure

A semi-structured interview guide and questionnaires were used as the data collection instruments. The questionnaire facilitated the collection of quantifiable data while the interview assisted in collecting in-depth qualitative data from the participants' settings.

Data collection lasted for two months. In addition, permission was sought from the head of the Management Board of the New Abirem Government Hospital, who upon knowing the objective of the study, allowed the researcher access to carry out the study at the healthcare facility. Permission was also sought from department heads and participants who were reliably informed of the purpose of the research. The study also adhered to voluntary participation.

Face to face questionnaire administration and interviews were carried out for quantitative and qualitative data collection, respectively. Quantitative questionnaire administration lasted for an average of 15 minutes, while an interview lasted for an average of 45 minutes. The interviews were tape-recorded upon the consent of the participants.

2.9 Questionnaire

The questionnaire was in four sections. Section A comprising 8 questions gathered the socio-demographic information of the study participants.

Section B comprising 10 statements focused on the respondent's knowledge of occupational health hazards.

Section C gathered information concerning occupational hazards encountered by the healthcare professionals.

Section D comprising 19 questions gathered information about their safety practices.

Regarding the measurement of the participants' knowledge, 10 statements on a 5 point Likert Scale with responses ranging from strongly agree to strongly disagree were used.

2.10 Data Analysis

For data analysis, the quantitative data was edited and cleaned using Statistical Package for Social Sciences (SPSS) version 20. Basic descriptive analysis was thereafter performed. In the analysis and interpretation of the quantitative data, the statistical Mean was used.

3. DATA ANALYSIS

3.1 Introduction

This chapter presents the analysis of data collected for the survey and subsequent discussions based on the objectives of the study. The introduction is followed up with the demography of the study, and then the results of the analysis of the field data. This is then followed up with the challenges encountered in implementing health and safety policies at the hospital. The researcher then continues with a discussion in line with the data analysis and the themes established by the study. In the analysis and interpretation of the data, the statistical frequency was used.

3.2 Demographic Characteristics of the Sample

The analysis begins by examining the gender, age, level of education, and years of working experience at the New Abirem Government Hospital by various respondents.

3.3 Gender Distribution

From the total sample of 171, seventy-nine (79) respondents, representing 46.2% were male and ninety-two (92) representing 53.8% of the total sample were female (See the figure below).

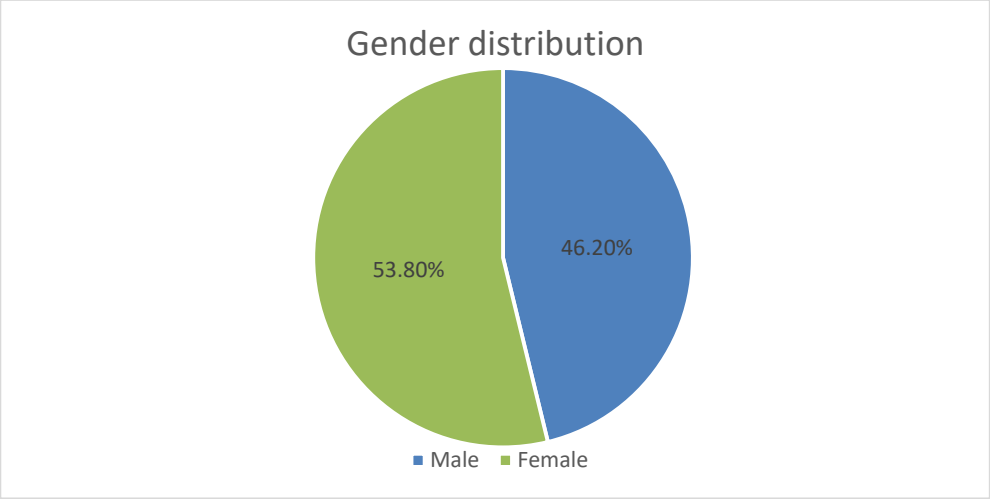

Fig. 1.
(Source: Survey Data, 2021)

3.4 Age Distribution

The field data revealed that the hospital had a youthful labour force with 62.6% being below the age of 45 whiles 25.7% were within the ages of 45 and 54. However, 9.4% of the staff were above the age of 55. (See figure below):

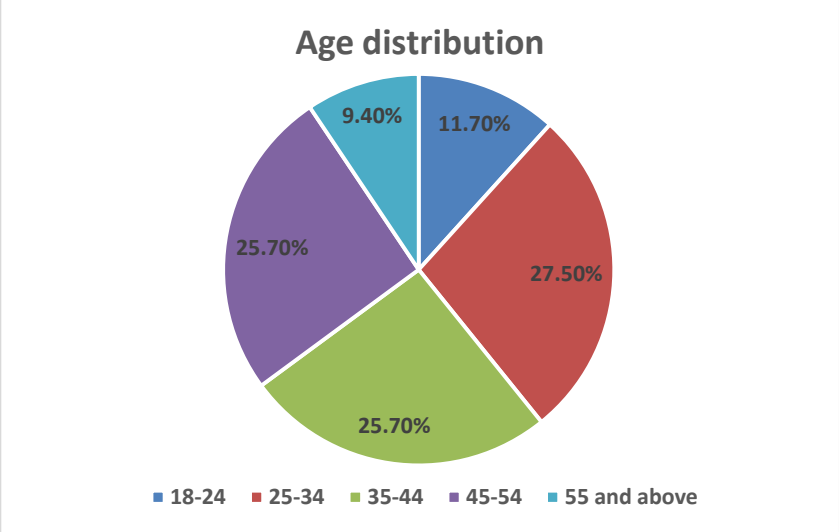

Fig. 2.
(Source: Survey Data, 2021)

3.5 Education Distribution

A higher percentage of the respondents, 72.5% had received tertiary education. The rest, 27.5% has secondary school education. This figures signify that the employees at the hospital have the requisite basic level of formal training for their major roles (See figure below).

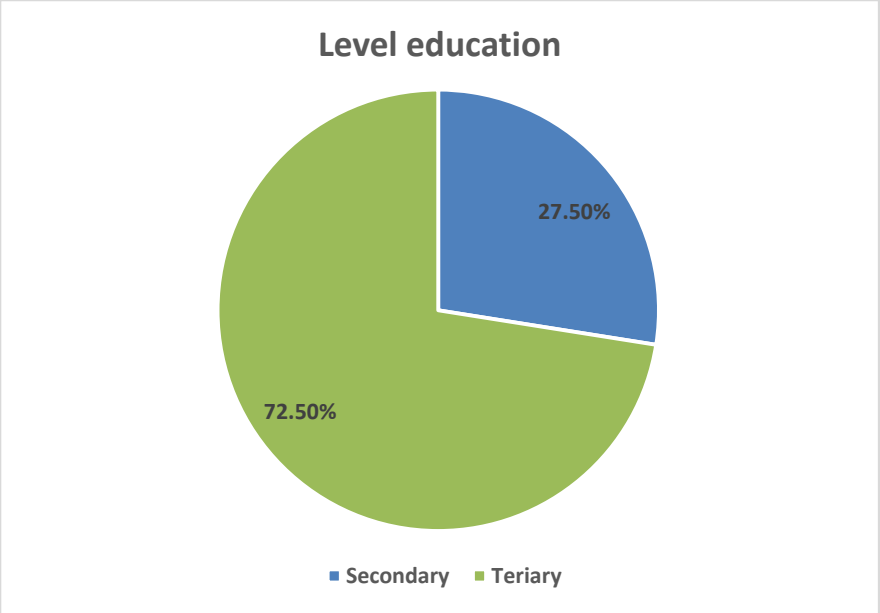

Fig. 3.
(Source: Survey Data, 2021)

3.6 Years of Working Experience

From the field survey data, 39.2% of the staff had worked at the hospital for a period between 1 to 5 years, 19.3% had worked at the hospital for a period between 6 to 10 years. 17.5% had worked at the hospital between 11 to 15 years whiles 24% had worked at the hospital for 16 years and over. (See figure below).

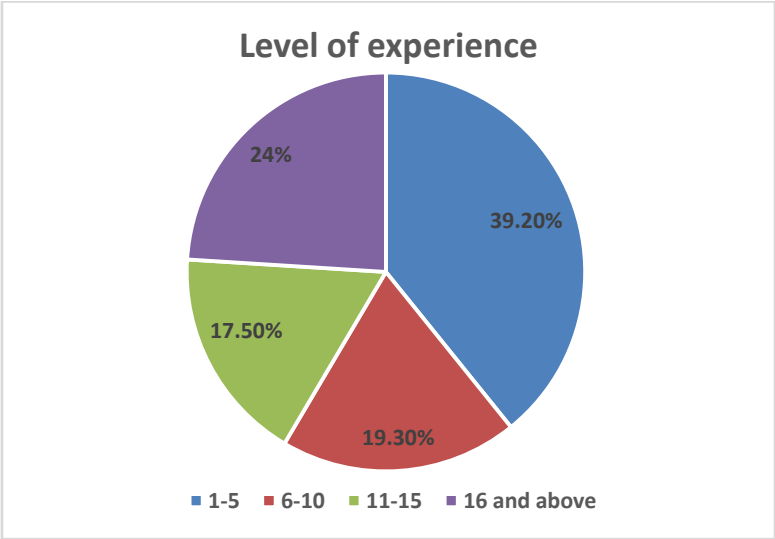

Fig. 4.
(Source: Survey Data, 2021)

3.7 Safety Practices

Table 1 shows the results of the assessment of knowledge of healthcare professionals about occupational health hazards and safety. The results showed that 120 (70.2%) participants agreed that occupational health and safety is the responsibility and right of both employer and employee. 33 (19.3%) of the participants were neutral, 18 (10.5%) disagreed with the assertion. Furthermore, 129 (75.4%) of the participants agreed that occupational hazards always relate to work activities that increase the risk of injury. 23 (13.5%) of the respondents were neutral in their response whiles 19 (11.1%) disagreed with the assertion. Additionally, 117 (75.4%) of the participants stated they were obliged to report work-related accidents or injuries even though 24 (14%) disagreed. Nevertheless, 114 (66.7%) agreed that the most effective accident and disease prevention begins when work processes are still in the design stage. Similarly, 126 (73.7%) respondents agreed that healthcare professionals are at high risk of occupational hazard.

3.8 Exposure to Physical hazards

Per the Figure, 95 out of the 171 respondents answered 'Yes' to exposure to noise at the hospital whilst 76 answered 'No'. 50 of the respondents answered 'Yes' to exposure to poor illumination at work and 121 picked 'No' to disagree. 11 of the respondents answered 'Yes' signifying an exposure to fire hazards whilst 160 selected 'No' to mean they have not been exposed to fire hazards. 34 of the respondents affirmed that they have at one time been exposed to electrical shocks whilst 137 answered 'No'.

3.9 Exposure to Chemical Hazards

Per the Figure, 119 out of the 171 respondents answered 'Yes' to inhaling harmful gases at one point in their duty at the hospital whilst 52 answered 'No'. 95 of the respondents answered 'Yes' to exposure to cleaning chemicals at work and 76 picked 'No'. 133 of the respondents answered 'Yes' signifying an exposure to disinfectants whilst 38 selected 'No' to mean they have not been exposed to disinfectants. 93 of the respondents affirmed that they have at one time been exposed to expired drugs whilst 78 answered 'No'.

3.10 Exposure to Biological Hazards

Per the Figure 73 out of the 171 respondents answered 'Yes' to needle prick injury at one point in their duty at the hospital whilst 98 answered 'No'. 91 of the respondents answered 'Yes' to coming into direct contact with patients bodily fluids at work and 80 picked 'No'. 57 of the respondents answered 'Yes' signifying contracting an occupational infection whilst 38 selected 'No' to mean they have not yet contracted any occupational infection at work.

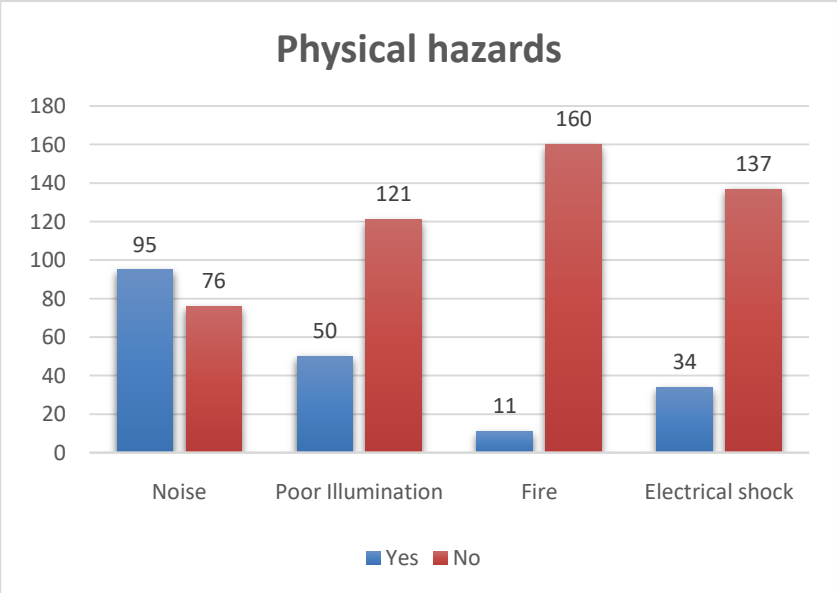

Fig. 5.
(Source: Survey data, 2021)

Table 1.

Variable	Stronglyagreed	Agree	Neutral	Disagree	Stronglydisagree
Occupational Health and Safety isthe responsibility & right of both employer and employee	39(22.8%)	81(47.4%)	33(19.3%)	17(9.9%)	1(0.6%)
Occupational hazards always relateto the workplace activities that increase the risk of injury and/or disease and rate of accidents.	39(22.8%)	90(52.6%)	23(13.5%)	18(10.5%)	1(0.6%)
Healthcare professionals are obliged to report work-related accidents/injuries.	37(21.6%)	80(46.8%)	30(17.5%)	19(11.1%)	5(2.9%)
The most effective accident and disease prevention begins when work processes are still in the designStage	45(26.3%)	69(40.4%)	25(14.6%)	28(16.5%)	4(2.3%)
Healthcare professionals are at a high risk of occupational hazard.	65(38%)	61(35.7%)	24(14%)	15(8.8%)	6(3.5%)
Healthcare professionals must always wear protective gears.	24(14%)	49(28.7%)	19(11.1%)	48(28.1%)	31(18%)

(Source: Survey Data, 2021)

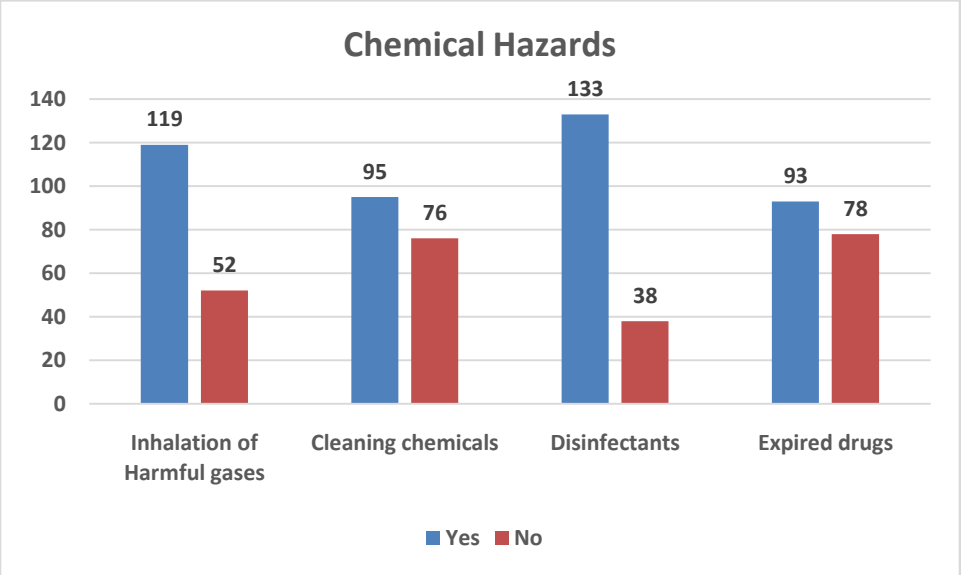

Fig. 6.
(Source: Field data)

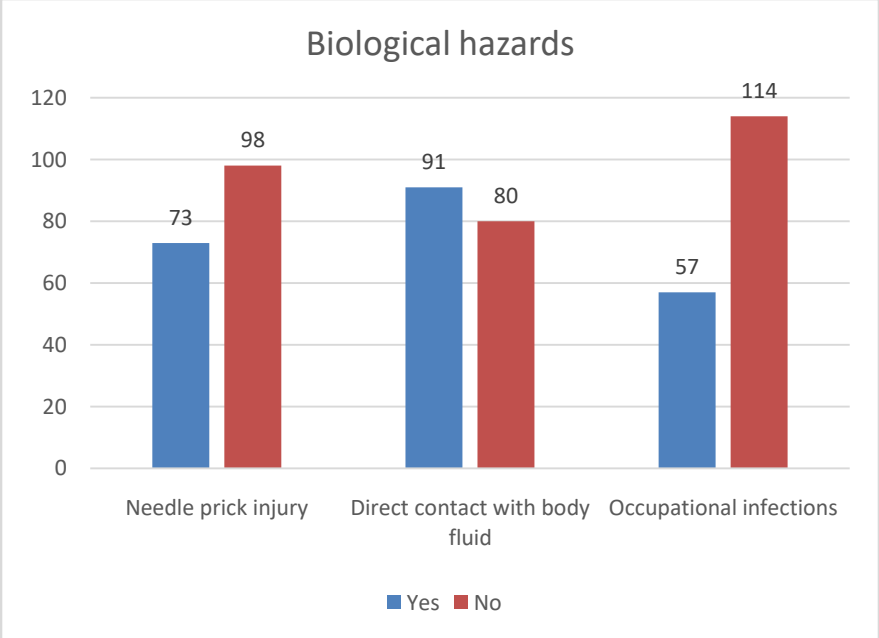

Fig. 7.
(Source: Field data 2021)

3.11 Exposure to Psychosocial Hazards

Per the Fig. 8. below, 79 out of the 171 respondents answered 'Yes' to experiencing physical abuse at one point at the hospital whilst 92 answered 'No'. 74 of the respondents answered 'Yes' to exposure to verbal abuse at work and 97 picked 'No'. However, the responses given for lack of sleep was almost equal with those who answered 'No': 87 and 84 respectively. 111 of the respondents answered 'Yes' to experiencing work-related stress whilst 60 selected 'No'. Again, 83 of the respondents answered 'Yes' to emotional effect of working with terminally ill patients and 88 of the respondents answered otherwise.

3.12 Safety Practices

Per Fig. 9 above, 130 out of the 171 respondents answered 'Yes' to being aware of safety protocols at the work place whilst 41 responded 'No'. 96 of the respondents agreed that there was a safety protocol reporting structure whiles 75 disagreed. 114 of the respondents responded 'Yes' to having occupational health training at the hospital whilst 57 responded 'No'. However, all the respondents (171) selected 'No' when asked if there was an in-house health and safety officer.

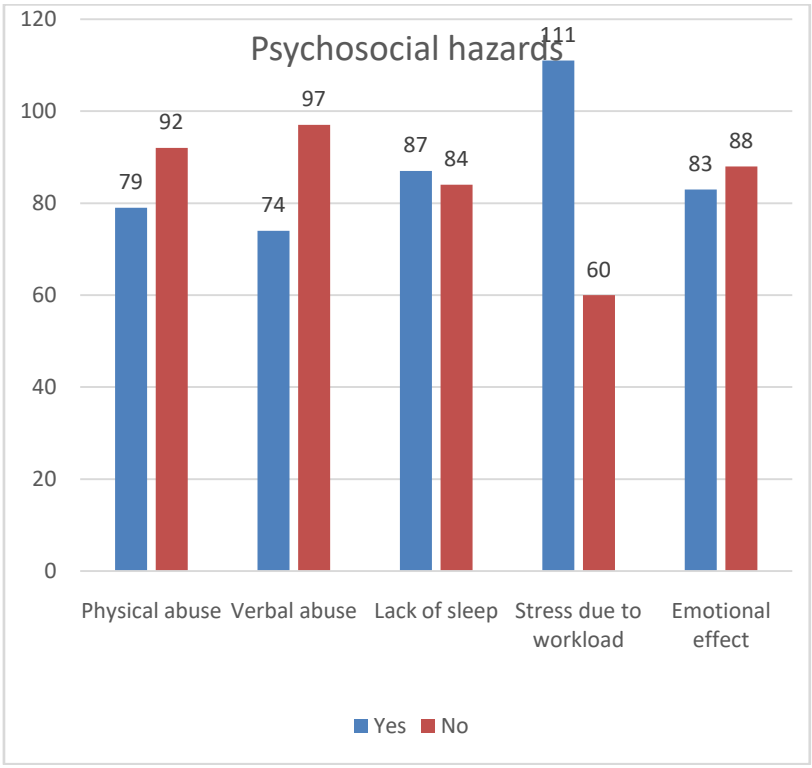

Fig. 8.
(Source: Field data, 2021)

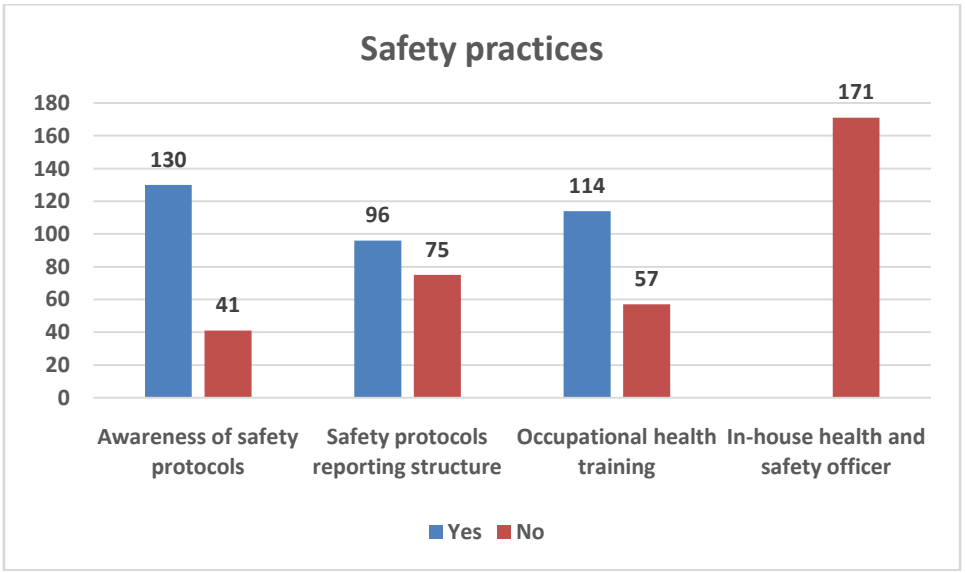

Fig. 9.
(Source: Field data 2021)

3.13 Challenges Encountered in Implementing Health and Safety at New Abirem Government Hospital

The researcher further interviewed the administrative team at the New Abirem Government Hospital to ascertain the challenges they face in their quest to ensure occupational health and safety. Below are the findings;

3.14 Financial Challenges

The administrative team bemoaned the fact that the funding allocated to the hospital in executing its activities are inadequate. According to the team, they prepare a budget at the beginning of every year to cater for their entire operations within that year. Though they make room for health and safety trainings, they often find themselves with little or no money to sponsor the healthcare workers for such training events. This they attributed to the fact that the hospital has no direct management role over funds generated at the hospital.

3.15 Understaffing

The administrative team at the hospital also spoke on understaffing as a challenge they currently face. There is currently no in-house health and safety officers at the hospital. Considering the size of the hospital and the high incidence of health hazards, the administration is of the view that ideally, there should be eight (8) in-house health and safety personnel to see to the training and enforcement of safety standards at the hospital.

3.16 Bureaucracy

The administrative team also talked about bureaucracy as one of the challenges they face. According to the team, the organogram of the management body of the hospital slows down decision-making process. In the hospital at the administrative level, the line workers report to the supervisors who in-turn report to the Deputy Director of Nursing. The Deputy Director of Nursing reports to the Administrator. The Administrator then reports to the Medical Superintendent [43-46]. Decision-making must travel through this set-up before action can be taken on any activity. It is therefore difficult to make and take quick decisions on occupational health issues.

3.17 Non-compliance to Rules and Regulations

The management team of the hospital also pointed out non-compliance to rules and regulations as a challenge they face in their quest to ensure occupational health and safety. According to the management team, the hospital has set up internal rules and regulations to contain activities of staff and to minimize spread of diseases and infections. However, most staff members and visitors to the hospital do not comply with these rules and regulations. For example, people would be smoking in areas that have clearly been deemed as a no-smoking area. There is a waste segregation policy on the premises of the commission; nonetheless, some staff members violate this policy and put waste in any bin they come across irrespective of the purpose not being for the said waste [47-53]. The non-compliance, they argued is because there are no proper punishments or fines attached to the rules and regulations they put in place.

4. DISCUSSION

Below are the discussions on the above findings:

4.1 Physical Hazards

Physical hazards are factors within the environment that could cause harm to the body without necessarily by physical contact. They include radiation, extreme temperatures, exposure to ultraviolet rays, and constant loud noise. The effects of long term exposure to physical hazards could lead to risk of skin cancer, hearing loss, stress, heat stroke, heat syncope, and eye damage. The field survey revealed that 95 respondents out of 171 participants answered ‘Yes’ to being exposed to noise at work. This is more than half of the participants surveyed indicating the presence of noise as physical hazard at the New Abirem Government Hospital. High noise levels could induce lack of sleep and prolong discomfort and recovery for patients. WHO guidelines suggest hospital noise levels should be 35dB(A) on the average during the day and 30dB (A) at night. Indeed, most day shift workers selected noise on the questionnaires. They claimed much of the noise emanated from patients writhing in pain, horning from road users, and the operational sounds from some hospital equipment. However, the noise was lower during the nights

due to lesser number of patients at the hospital, activities of road users and hospital activities. Again, poor illumination is considered a physical hazard. Poor illumination could be the presence of insufficient lights or excessive lights. Both are detrimental to the health of a worker. Insufficient lighting creates dark areas that could lead to accidents and injuries as a result of momentary blindness. Excessive lighting has the potential to damage the eyes. According to the findings of the survey, illumination was poor at the healthcare facility. 121 respondents agreed to poor illumination at the facility. However, this was mostly the assertion of professionals at the hospital who worked on night shifts. They complained, *"The phenomenon was due to poor lighting in many areas, and frequent lights-out from the national grid."* The poor illumination could also be due to the ergonomics of the facility. Most of the hallways are narrow with less access to sunlight in the day time [54,55]. A fire hazard is anything that has the potential to cause fire or an obstacle that can obstruct evacuation. Protection against fire at the healthcare facility is very important due to the sensitive nature of the hospital environment. Fires in hospitals are usually caused by faulty electrical equipment, overworked sockets and cables. Lasers and electrosurgical tools are also sources that do ignite fires. Therefore, fire assessments at regular intervals at healthcare facilities are essential. Per the findings of the survey, exposure to fires at the hospital is minimal due to proper checks by the administrative and maintenance team as 160 out of 171 selected 'No' in response to fire exposure. However, this does not rule out the occurrence of fire at the facility. The issue of electrical shocks could be linked to faulty electrical equipment, overworked sockets, naked electrical wires, and power fluctuations. The survey revealed a low occurrence of electric shocks at the facility. 137 respondents answered 'No' as against 34 who complained of electrical shocks. Though the 34 of the respondents attested to having experienced electrical shock at one time at work, many of that number said the incident occurred in other health facilities where they used to work.

4.2 Chemical Hazards

Volatile organic compound (VOCs) gases are both natural and synthetic substances that evaporate easily releasing molecules into the atmosphere. Most of these molecules contain carbon that are harmful when inhaled. Such gases include carbon monoxide, nitrogen oxides and organic solvents. Inhalation of harmful gases is known to cause headaches, irritability, brain fog, dizziness and asthma in severe cases. Surgical smoke generated by lasers and electrosurgical devices also contain harmful gases. The survey showed that 119 respondents answered 'Yes' to inhaling harmful gases. The figure is high and shows a high prevalence of harmful gases at the hospital. They mentioned such gases to include carbon monoxide, nitrogen oxides and organic solvents. The respondents further asserted that most of the harmful gases were emitted by old and rickety vehicles that plied the hospital to pick-up and drop patients. They also insinuated that they use some organic solvents as antigens for disinfection. Some of the interviewees opined that certain grades of the organic solvent could be so strong that it often left them with colds. The healthcare environment is also an arena for many hazardous chemicals. After all, chemicals are used to treat patients, clean, disinfect and sterilize work surfaces [56,57,58]. Despite the wide range accepted uses of chemicals at health centres, chemicals pose high risks to patients and healthcare professionals. Chemicals such as bisphenol A, mercury, perfluorinated compounds, phthalates, polybrominated diphenyl ethers, triclosan, among many others, pose serious health issues when ingested. However, cleaning chemicals and disinfectants were commonly used at the hospital for treating infections and getting rid of germs. Hence, more than half of the respondents (95) asserted to being exposed to cleaning chemicals. The respondents mentioned bleaches, alkalies, sanitizers and detergents as the most used cleaning detergents. 113 of the respondents also answered 'Yes' to being exposed to disinfectants. They mentioned alcohol, chlorine, hydrogen peroxide, iodophors and peracetic acid as some of the common disinfectants they are often exposed to. The lesser numbers who selected 'No' to mean they had not been exposed to chemical hazards were mostly administrative staff of the hospital.

93 of the respondents further noted that they have been exposed to expired drugs at one time or the other time whilst at work. According to them, the occurrence is not rampant. They asserted that usually the expensive drugs end up being at the hospital for so long some expire. However, they were quick to add that they check the expiry dates on drugs before administering to patients. They have therefore not recorded a

case where expired drugs have been administered to a patient at the facility.

4.3 Biological Hazards

Biological hazards are caused by organisms or organic matters produced by these organisms that are detrimental to human health. These include bacteria, viruses, protozoans, parasites and fungi. The pathogens get access into the human body by means of transmission through contact with body fluids, contact with contaminated objects and through the respiratory system. Infected persons could develop severe life-threatening complications. The harmful effects posed to human health are usually in the form of infections, allergies and poisoning. Some of the activities that expose healthcare practitioners to these hazards include clinical examinations of humans, taking blood specimen, surgical procedures, treatment of wounds and care of disabled patients. All visitors and staff to the health facility are prone to infection from biological agents. The survey revealed that 73 of the respondents have been exposed to contaminated objects, 91 had come into contact with bodily fluids and 57 developed infections as a result of biological hazards. This shows that highest means of transmission of biological pathogens at the New Abirem Government Hospital is by means of bodily fluids.

4.4 Psychosocial Hazards

Psychological hazards are associated with the physical, mental and social well-being of healthcare workers. Psychological hazards are often triggered by excessive work pressure, absence of reward systems, lack of support systems from management staff, workplace harassment and bullying, workplace violence and discrimination, and lack of appropriate communication channels. The survey showed that 79 answered 'Yes' to being physically abused at one point at the hospital. Despite the fact that the number is less than half of the entire participants of 171, it is still too high. Physical abuse takes the form of inflicting pain on another by means of hitting, smacking or slapping. How physical abuse occurs among healthcare professionals is debatable. However, the healthcare professionals reported incidences of patients or their guardians physically attacking them. Often, the physical abuse begins by means of a verbal abuse. Hence, 74 of the respondents answered 'Yes' to being verbally abused whilst at work.

Another serious psychosocial hazard is the lack of sleep. Lack of sleep pose many health risks to humans. These health risks include weakening of the immune system, increased risks of developing coronary heart disease, poor body coordination and headaches. Lack of sleep could reduce employee performance drastically due to the body's inability to replenish lost energy through sleep. There have been instances of healthcare professionals committing grave errors at work due to lack of sleep or tiredness. The survey showed that half of the respondents (87) did not have good sleep. This they attributed to a robust shift system and the huge number of in-patients ate the hospital at almost all times. 111of the workers responded 'Yes' to experiencing stress at work. This could have a bearing on the emotional effect of working with terminally ill patients. 83 of the respondent asserted to this claim.

4.5 Knowledge of Safety Protocols

The results of the field survey showed that 130 of the respondents representing 76% of the participants in the survey, are aware of health and safety protocols in relation to their field. Though this is a great figure, ideally all participants should be made aware of occupational hazards and its implications. However, there was a split in the responses pertaining to the availability of a structured safety protocol reporting structure as 96 affirmed whilst 75 disagreed. The administrative body of the hospital claimed there was such a report system, however, the procedure is tedious and discourages many of the health professionals from following it. 114 of the respondents said there are regularly held occupational health trainings to keep them abreast with developments in regards to their safety at work. However, there was no on-site health and safety personnel to educate, monitor and ensure health and safety practices at the hospital. All respondents (171) selected 'No'.

4.6 Challenges Encountered in Implementing Health and Safety at New Abirem Government Hospital

The adminstrative management body of the hospital faces several constraints ranging from internal managerial matters to external problems such as technology, political, socio-cultural, environmental, legal and institutional (Fenker, 2004). This could be due to the broad nature of management role (Atkin and Brookes, 2009).

The management body at the hospital mentioned funding as one of the challenges they face in their pursuit of ensuring occupational health and safety. Though they prepare budgets that make room for enough trainings, the nature of public facility management is such that the facility is always battling with contingencies. Also, external economic indicators affect the cost of materials (Kadzis, 2009) for running the hospital, and these indicators that regulate prices are not within the control of the management body. It is, therefore, not surprising that financial issues were revealed as a challenge. Research by Lunday [59] confirmed that one of the major challenges that management bodies face is the issue of inadequate funding. Corporate bodies seek opportunities at all times to cut down on operational cost. Most often, training of staff members is considered a 'cost' (Penny, 2015). This makes it extremely difficult to organize regular health and safety trainings for staff.

4.7 Understaffing

The Management body at the hospital also raised understaffing as a challenge inhibiting them in their pursuit of occupational safety. The management team oversees to the the daily health safety needs of over 300 healthcare professionals the hospital. Ideally, there should be some trained health and safety personnel employed and stationed at the facility to help in this regard. From a first look, it is indeed evident that the daily duties of the management body of the hospital is quite vast but as to whether a larger team size would make them more effective in their drive towards ensuring optimum occupational health and safety in their daily activities is unclear. There have been several debates concerning the ideal size of a corporate team that could lead to 100% effectiveness in performance [60]. However, there has been no rule of thumb. Nonetheless, it is recommended that paying attention to industry benchmarks can point one in the right direction (Reeves, 2002). It has also been advocated that several factors should be considered in reaching a decision on staff number including the type of work performed, span of control, area of operation, budget, and organizational focus [60].

4.8 Bureaucracy

Bureaucracy, which refers to an excessively complicated administrative procedure, was raised as another issue affecting the operations of the hospital management body in ensuring occupational safety. In the hospital at the administrative level, the line workers report to the supervisors who in-turn report to the Deputy Director of Nursing. The Deputy Director of Nursing reports to the Administrator. The Administrator then reports to the Medical Superintendent. The reporting structure is one of a top-down and bottom-up approach. In as much as the structure of an organization affects its shape to carry out its functions in the business setting (Qungyen and Yezhuang, 2013), a complex reporting structure is a disincentive to quick internal decision making and innovation [61].

4.9 Non-compliance with Rules and Regulations

The management body of the hospital also raised the issue of non-compliance with rules and regulations by the employees of the hospital. According to the management body, the hospital has set up internal rules and regulations to direct the activities of staff on the premises. These rules and regulations are for health and safety purposes, efficient resource utilization and preservation of life and property. Examples of the rules include no-smoking on anywhere on the premises, wearing protective gears, segregation of waste by staff before dumping into the appropriately labelled bins. However, most staff members violate these rules and regulations. Nonetheless, the issue of obedience and adherence to law would be possible if only backed by concrete rewards and sanction systems [62]. People abide by laws if sanctions are adequately severe, whereas they break the laws if sanctions for doing so are excessively mild [63]. Therefore the absence of clear, enforceable sanctions backing the rules and regulations will make their enforcement difficult.

5. SUMMARY OF FINDINGS

This study was conducted to assess knowledge among healthcare professionals on occupational health hazards at New Abirem Government Hospital. Occupational hazards refer to those activities and substances that are a threat to life and property. In this regard, questionnaires were administered to the employees of the hospital. The Management Department of the hospital were also interviewed to collect data for this purpose. This was for the purpose of data triangulation.

The study revealed that indeed, healthcare professionals at the hospital are aware and knowledgeable on occupational health hazards. However, chemical hazards present the most threat to the employees with disinfectants being the chemical that most of the employees are exposed to. The other categories of threat include biological threats, psychosocial threats and physical threats respectively.

Interestingly, the study found out that there is no laid done health and safety policies in place at the hospital. This is quite shocking considering the healthcare facility being considered a high-risk facility. There were no in-house health and safety personnel. However, periodic trainings were offered to the employees to keep them up-to-date on health and safety issues.

The study also sought to find out the challenges facing management body of the hospital in ensuring occupational safety at the premises. Among the major challenges they encountered include funding, understaffing, bureaucracy and non-compliance to internal rules and regulations.

6. CONCLUSION

The study found out that indeed the healthcare professionals are well aware of occupational hazards at the facility. The highest form occupational hazard that the healthcare professionals are exposed to is chemical hazards. There are several problems militating against the top management in improving upon the occupational safety at the workplace. However, more could be done to ensure a more secured work environment for employees of the hospital.

7. RECOMMENDATIONS

Based on the findings of the study, it is being recommended that more funds should be made available to the management body of the hospital to enable them run more effective occupational safety programmes and to procure more protective equipment for the staff.

Also, it is being recommended that the government should give clearance for more competent and trained occupational health and safety personnel to be employed. This, however, should be dependent on the size and workload of the facilities where they are to be employed. Considering that the the healthcare facility is a high-risk area, an in-house safety training officer could be employed as a boost towards the drive towards occupational health and safety.

It is evident that laws without the appropriate sanctions would be ineffective in achieving the purpose for which they were drafted. Hospital management body should put in place the appropriate sanctions to back the internal rules and regulations they put in place. They could liaise with the top management of other departments in the drafting stage of these rules so as to gain their help in the enforcement of same. More essential is the understanding of the employee on the importance of the rules and regulations to his or her health and safety. There should be stakeholders (the employees and users of the facilities) engagement on a regular basis to educate them on the need and importance of adhering to rules and regulations aimed towards achieving quality occupational health and safety status.

Lastly, there should be regular safety benchmarks and audits at the health facility to ensure that employees in these institutions are adhering to occupational health and safety practices. A thorough audit and benchmarking would reveal the true states of occupational safety procedures at the workplace. This is being actively done in such countries as the US and UK. It could also be done here in Ghana.

8. LIMITATIONS OF THE STUDY

The study had some limitations. Firstly there is the incidence of recall bias. Respondents were required to offer information on occupational health hazards they are or were exposed to in an earlier time in their career. It is probable they not be able to recall well.

Secondly, the focus of this study was on the healthcare professionals at the New Abirem Government Hospital in the Eastern Region. Therefore, the conclusions drawn from this study cannot be generalized. However, the conclusions can be extended to the health facilities that share similar characteristics.

Thirdly, the data may be subjected to bias by how the questionnaire was framed and the genuineness of respondents' answers. Despite these limitations, the internal and external validity of the study was not adversely affected.

DISCLAIMER

The products used for this research are commonly and predominantly use products in our area of research and country. There is absolutely no conflict of interest between the authors and producers of the products because we do not intend to use these products as an avenue for any litigation but for the advancement of knowledge. Also, the research was not funded by the producing company rather it was funded by personal efforts of the authors.

CONSENT AND ETHICAL APPROVAL

The study adhered to ethical principles of social science research. First, informed consent and permission were sought from the head of the concerned department. Afterwards, the researcher approached the sampled participants to seek their informed consent. The institutional letter issued by the University assisted in seeking informed consent from the participants. Second, detailed information on the objectives of the study were explained to the participants to avoid deception. Third, the participants were educated on their rights to participate in the study. Thus, the participants were informed of their rights to participate voluntarily in the study. In addition, the participants reserved the right to terminate their participation at any time of the data collection. Moreover, data from the respondents were held confidential and used strictly for academic purpose. This information was also communicated to the participants who helped them in the decision to participate in the study or not.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

REFERENCES

1. Adebola F, Owotade F. Occupational hazards among clinical dental staff. The Journal of Contemporary Dental Practice. 2010;5(2):1–10.
2. Adebola J. Knowledge, attitude and compliance with occupational health and safety practices among pipeline products and marketing company (PPMC) staff in Lagos. Research Journal of Medical Science. 2014;2;158-73.
3. Adedeji GA, Nwosu UJ. Ergonomic Evaluation and Labour Inspection in Cluster-Sawmill in Port Harcourt. In Ergonomic Evaluation and Labour Inspection in Cluster-Sawmill in Port Harcourt. 2016;12:38–50. Proligno Nigeria.
4. Aditya Y. Factors that cause health and safety hazards; 2017. Available:https://www.4sconsult.com/5-factors-that-cause-health-and-safety-hazards/
5. Agbana B, Joshua A, Daikwo M, Metiboba L. Knowledge of occupational hazards among sawmill workers in Kwara state, Nigeria. Nigeria Postgraduate Medical Journal. 2016;23:25-32.
6. Agbana B, Joshua A, Daikwo M, Metiboba L. Knowledge of occupational hazards among sawmill workers in Kwara state,Nigeria. Nigeria Postgraduate Medical Journal. 2016;23:25-32.
7. Aguwa E. A review of Sir Thomas Legge's Aphorism and workplace personal protective equipments − Is there gap in knowledge, attitude and utilization? Occupational Health of African Journal. 2013;1:4-6.
8. Ahmed H, Newson S. Knowledge and practices of cement workers related to occupational hazard in United Arab Emirates. Journal Egypt Public Health Association. 2010;85(3):149–167.
9. Aluko O, Adebayo A, Adebisi T, Ewegbemi M, Abidoye A, Popoola B. Knowledge, attitude and perceptions of occupational hazards and safety practices in Nigeria healthcare workers. British Medical Centre Resources Notes. 2016; 9:17.
10. Amenze OO, Gabriel O, Bunmi A, Hendrith A, Obehi H. Determinants of Occupational Health and Safety: Knowledge, Attitude, and Safety Practices Toward Occupational Hazards of Sawmill Workers in Egor Local Government Area, Edo State. African Journal of Medical and Health Sciences. 2017;58-64.
11. Amosu A, Degun A, Atulomah N. The level of knowledge regarding occupational hazards among nurses in Abeokuta, Ogun State, Nigeria. . Current Research Journal of Biological Sciences. 2011;3(6):585–590.
12. Ashok D. occupational hazards of supportive group of women employees in health care units in Tamilnadu.

International Journal of Business and Management Tomorrow. 2012l2(7):1–8.
13. Azuzu M. A summary, introduction and outline of principle. Occupational health. Africa-links Books. 2012;4(3):1–11.
14. Benyakowa A. Assessing the Impact of Occupational Health and Safety Needs on the Lives of Construction Workers. A Case Study at Abasa General Enterprise Limited-Kumasi. Journal of Knowledge on Occupational Health and Safety. 2012;62-64.
15. Boschetto P, Quintavalle S, Miotto D, Cascio NL, Zeni E, Mapp CE. Chronic obstructive pulmonary disease (COPD) and occupational exposures. Journal of Occupational Medicine and Toxicology. 2011;6:1–6.
Available: http://doi.org/10.1186/.
16. Cooper M, Phillips R. Validation of a safety Climate measure. The British Psychological Society, Annual Occupational Psychology Conference. 2012;3-5 Birmingham.
17. Deroo LA., Adjei S, Frederick A, Simpson K. Occupational Injuries in Ghana. International Journal of Occupational and Environmental Health. 2012;11.
Available:http://doi.org/10.1179/107735205800246028
18. Diwe KC, Duru CB, Iwu AC, Merenu IA, Uwakwe KA, Oluoha UR, Ogunniyan TB. Occupational Hazards, Safety and Hygienic Practices among Timber Workers in a South Eastern State, Nigeria. Occupational Diseases and Environmental Medicine. 2016;63–71.
19. Stasha S. Ride-sharing industry statistics to get you going in 2021. Accessed: May. 2021;10:2021.
20. Douwes J, Mclean D, Pearce N. Asthma and other respiratory symptoms in New Zealand pine processing sawmill workers. American Journal of Industrial Medicine; 2011.
21. Endroyo B, Yuwono BE, Mardapi D. Model of learning / training of Occupational Safety & Health (OSH) based on industry in the construction industry. Procedia Engineering. 2015;125:83–88.
Available:zhttp://doi.org/10.1016/j.proeng.2015.11.
22. Ersoy S, Sonmez BM, Yilmaz F, Kavalci C, Ozturk D, Altinbilek E, Akin T. Analysis and injury paterns of walnut tree falls in central anatolia of turkey. World Journal of Emergency Surgery. 2016;42(9):1–5.
23. Faremi F, Ogunfowokan A, Olatubi M, Ogungbemi A. Occupational hazard awareness and safety practices. International Journal of Medical Science in Public Health. 2014;3:1244-8.
24. Faremi F, Ogunfowokan A, Olatubi M, Ogungbemi A. Occupational hazard awareness and safety practices. International Journal of Medical Science in Public Health. 2014;3:1244-8.
25. Feyer A, Williamson A. The involvement of human behavior in occupational accidents: Errors in context. Safety Science. 2010;25:55-65.
26. Fleming M, Lardner R. Strategies to promote safe behavior as part of a health and safety management system. Contact Research Report. 2012;430-38.
27. Gestal J. Occupational hazards in hospitals: accidents, radiation, exposure to noxious chemicals, drug addiction and psychic problems, and assault. British Journal of Industrial Medicine. 2010;44(1): 510– 520.
28. Heacock H, Hertzman C, Demers PA, Gallagher R, Hogg RS, Teschke K, Kelly S. Childhood Cancer in the Offspring of Male Sawmill Workers Occupationally Exposed to Chlorophenate Fungicides. Environmental Health Perspectives. 2012; 108(6):499–503.
29. Herbert R, Landrigan P. Work-Related Death: A Continuing Epidemic. American Journal of Public Health. 2011;90(4):541–545.
30. Jahangiri M, Rostamabadi A, Yekzamani P, Abadi BM, Behbood F, Ahmadi SF, Momeni Z. A Descriptive Study of Occupational Health Services in Self-employed Enterprises (Nanoscale Enterprises), Shiraz. Iran. Safety and Health at Work. 2016;1–5,0–4.
Available:http://doi.org/10.1016/j.shaw.2016.05.004
31. Javed S, Tehmina Y. Gender based occupational health hazards among paramedical staff in public hospitals of Jhelum. International Journal of Humanities and Social Science. 2011; 1(3):175–180.
32. Jilcha K, Kitaw D. Industrial occupational safety and health innovation for sustainable development. Engineering Science and Technology. An International Journal; 2016.
Available:http://doi.org/10.1016/j.jestch.2016.10.011

33. Johard U, Eklund, A, Dahlqvist M, Ahlander A, Alexandersson R, Ekholm U, Tornling G. Signs of alveolar inflammation in non-smoking Swedish wood trimmers. British Journal of Industrial Medicine. 2011;49:428–434.
34. kamp J, Krause T. Selecting safe employees: A behavioral science perspective. Professional safety. Amsterdam Journal Health System Pharmacology. 2014;42 (4):24-8.
35. Kripa R, Raman S, Murli L, Habibulla N. Knowledge, attitude and practice related to occupational health problems among salt workers working in the desert of Rajasthan. Indian Journal of Occupational Health. 2013;47:85-8.
36. Kwankye AE. Worker Characteristics and Compliance to Occupational Health and Safety. A Study of Naja David Wood Industry Limited in Kumasi Metropolis; 2012.
37. Landsbergis P, Grzywacz JG, Lamontagne AD. Work organization job insecurity and occupational health disparities. American Journal of Industrial Medicine; 2016.
Available:http://doi.org/10.1002/ajim.22126
38. Lingard H, Rowlinson S. Sawmill Machine operation site safety in Hong Kong. Sawmill Management and Economics. 2011;12:501-510.
39. Liss GM, Tarlo SM, Farlane YM, Yeung KA. Hospitalization among Workers Compensated for Occupational Asthma. American Journal of Respiratory and Critical Care Medicine. 2011;162:112–118. .
40. London L. Challenges for South African health professionals. Occupational and Environmental Health Research Unit. Working Paper No. 2. Department of Public Health. In Ethics in occupational health. Cape Town: University of Cape Town. 2010;1-20.
41. Maestrelli P, Rooyackers J, Schlu V. Guidelines for the management of work-related hazard. European Respiratory Journal. 2012;39(3):529–545.
42. Magoro F. Knowledge, attitude and practice regarding personal protective equipment amongst Stevens Lumbar Mills employees in Capricon district of Limpopo province, South Africa. A min idissertation submitted in partial fulfillment of the requirement for the degree. Faculty of Health Science, University of Limpopo. 2012;45-54.
43. Pouryaghoub G, Mehrdad R, Mohammadi S. Interaction of smoking and occupational noise exposure on hearing loss: A cross-sectional study. BMC Public Health. 2013; 137(7):3–7.
Available:http://doi.org/10.1186/1471-2458-7-137
44. Raajan D. Occupational hazards and health,a comparative study among the medical laboratory technicians. International Journal for Research in Applied Science and Engineering Technology. 2014;2(7):305–315.
45. Rajan D. Occupational Hazards among medical laboratory technicians. SCMS Journal of Indian Management. 2014; 11(1):134 –148.
46. Raouf A, Dhillon BS. Safety assessment. London,: Luis Publisher; 2010.
47. Mitchual S, Donkoh M, Bih F. Assessment of safety practices and injuries associated with wood processing in a timber company in Ghana. Open Journal Safe Science and Technology. 2015;5:10-9.
48. Montano D. Chemical and biological work-related risks across occupations in Europe: A review. Journal of Occupational Medicine and Toxicology. 2014;28(9).
49. Musa O, Bamidele J, Salaudeen A, Saromi H, Omi A. Occupational hazard awareness and safety practices among cement factory workers at Obajana, Kogi State, Nigeria. Elixir Internaational Journal. 2012;47:9013-8.
50. Neuman W. Qualitative and Quantitative Approaches. Allynn & Bacon, Boston. Social Research Methods Allynn & Bacon, Boston; 2011.
51. Niven K. Accident costs in the NHS. The Safety and Health Practice. 2011;17(9): 34-8.
52. Olaoye OA, Emechete AA, Onigbinde AT, Mbada CE. Awareness and Knowledge of Occupational Therapy among Nigerian Medical and Health Sciences Undergraduates. Hong Kong Journal of Occupational Therapy. 2016;27:1–6.
Available:http://doi.org/10.1016/j.hkjot.2016.02.001
53. Osagbemi G, La-Kadiri R, Aderibigbe S. Awareness of occupational, hazards, health problems and safety measures among saw mill workers in North Central Nigeria. Previous Medical Book. 2010;9: 325-8.

54. Rus R, Daud A, Musa K, Naing L. Knowledge, attitude and practice of sawmill workers towards noise induced hearing loss in Kota Bharu, Kelantan. Malaysian Journal of Medical Science. 2011;15:28-34.
55. Sue C, Bethman J, Helen R. Behavioral approach to safety management within reactor plants. Safety Science. 2013;42: 825-39.
56. Saldaria M, Herrero S, Rodriguez J. The impact of occupational hazard information on employee health and safety: An analysis of professional sectors in Spain. International Electronic Journal of Health Education. 2012;15(1):83-98.
57. Ugheoke AJ, Ebomoyi MI, Iyawe VI. Influence of Smoking on Respiratory Symptoms and Lung Function Indices in Sawmill Workers in Benin City, Nigeria. Nigerian Journal of Physiological Sciences. 2013;21:49–54.
58. Yost M. Task-Based Assessment of Occupational Vibration and Noise Exposures in Forestry Workers. American Industrial Hygiene Association Journal. 2013;627:617–627
59. Lunday J, editor. The need for visibility and engagement of AHPs in the global health agenda. International Journal of Therapy and Rehabilitation. 2009 Mar;16(3):128-9.
60. Weiß CH. An introduction to discrete-valued time series. John Wiley & Sons; 2018 Feb 5.
61. Chen CH, Huang CC. Hydrogen storage by KOH-modified multi-walled carbon nanotubes. International Journal of Hydrogen Energy. 2007 Feb 1;32(2):237-46.
62. Tyler TR. Psychological perspectives on legitimacy and legitimation. Annual Review of Psychology. 2006 Jan 1;57:375.
63. Becker GS. Crime and punishment: An economic approach. InThe economic dimensions of crime 1968 (pp. 13-68). Palgrave Macmillan, London.

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