

Occupational Risk and Hazards related Nurses Working in Central Hospital Warri, Nigeria

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Abstract

Nursing is a risky and hazardous occupation in the developing countries, but little is known about the occupational risk and hazards facing the nursing work force in Nigeria. In this article, the purpose is to identify some of the work-related risk and hazards among a sample of nurses in central hospital Warri. Cross-sectional data were collected through a self-administered survey in the hospital facilities. 25 questionnaires were submitted, 22 Nurses returned theirs (88%) Measures included four categories: work-related demographics, occupational risk /illness, reporting behaviour, and safety awareness. From the study, the result shows that Nurse who are not satisfied with the working conditions (working environment, safety measures, staff shortage, etc), at the Hospital has 78.9%, Over 85% are faced with extreme pressure at work, while 57.89% report any work-related health risk and hazards to the hospital authorities, 80%, of the sample of nurses experienced fatigue (temporal loss of strength and energy from hard physical/mental work. While 50% of Nurses experience low back pain and are regularly exposed to contagious pathogens/agent the results also revealed that 70% of the nurses claim they work under unclean working environments. 15% of nurses are exposed to radiation as stated in the data collected, another 20 % have been involved in electrical shock accident. 85% of Nurses understand their role in the safety and health management system, while 65% of nurses say that the management team do not regularly inspect the hospital. Future research should examine a factor which leads to risks and strengthen policies?

Keywords: Risk, Nurses, hazards Ergonomics, Nigeria

Introduction

Purpose

The purpose of this study is to identify some of the occupational health risks and hazards that are associated in public hospitals in Nigeria using central hospital Warri, in Delta State as a study centre. The main issues that this study is about to address is the mechanism in curtailing the numerous concerns and issues that make the nurse not to enjoy their day to day operation, the non setting of systems that capture health care-specific exposures among nurses is another problem that are needed to be tackled in this research work. The none and well defined policies for the training of new and old nursing staff working in public hospital need to be implemented in the area of educational and training strategies that focuses on workplace risk, hazards, health and safety. Given the risk, hazards, concerns, working environment and conditions that nurses in the public hospital report, advocacy is needed at the national and organizational levels for the enforcement of occupational health and safety policies. Additionally, the central hospital management team, the nursing leadership of the hospital should identify priority areas for research and can partner with researchers to investigate these problems.

The best and practicable solution to be used to solve this problem, because of the peculiar situation in our country as relate to our economic issues is for the hospital management to look in house for those professional who has additional knowledge on health safety and environment to immediately initiate internal and external training for all nurses to make them be aware of some of the inherent risk and hazards that are associated in their day to day operation as nurses. Personal protective equipment like nose mask, hand gloves, aprons. Simple hand tools and equipment should be provided for the

short term. While a long term solution should be focused on a well grounded health, safety, environment and security policies and plan that will govern the health care worker in central hospital, warri.

The management should stationed security personnel in the wards to protect the nurses from the frequent assault by patient and patient relatives. Nurses should be immunised against contagious blood pathogens like hepatitis and prompt attention should be given to any nurse that have an accident which leads to puncturing by used needle or contaminated sharps.

From the American Nursing Association, most of the respondents reported the following as being the occupational health risk that nurses are faced with. (1) Psychosocial risk and hazards – (Acute and chronic effects of stress and being overworked); (2) Ergonomically risk and hazards – (low back pain and injury); (3) biological risk and hazards (infected with a blood borne pathogen from a needle stick. These injuries and illnesses appeared to be consequential not only for the nurse, but also for the workplace. About 23% reported missing 2 or more days in the past year due to a work-related injury or illness, and 76% reported that unsafe working conditions interfered with the delivery of quality nursing care (Houle, 2001).

In the developed countries such as France, United Kingdom, Canada and United State of America, these countries may have safer working conditions than nurses in developing countries. It may be as result from their superior economic power and a well articulated regulatory oversight that supports quality occupational health and safety protections. In 1991, the U.S. Occupational Safety and Health Administration (OSHA) promulgated the Bloodborne Pathogen Standard to protect all workers at risk for exposure to bloodborne pathogens through sharps injuries or contact with skin or mucous membranes (OSHA, 1991). In contrast, the Philippines has no equivalent policy, even though the nursing profession is regulated by the Department of Labor and Employment and the Department of Health.

Meanwhile, study into the occupational health risk, hazards and safety issues among nursing work forces outside Western, developed countries has been limited, these studies have been gaining increasing attention. For example, a number of studies have been published in recent years examining occupational exposures in health care settings throughout Africa, the Middle East, and Asia (Ansa, Udoma, Umoh, & Anah, 2002; Arafa, Nazel, Ibrahim, & Attia, 2003; Celik, Celik, Agirbas, & Ugurluoglu, 2007; Hiransuthikul, Tanthitippong, & Jiamjarasrangsi, 2006; Ilhan, Durukan, Aras, Turkuoglu, & Aygun, 2006; Nsubuga & Jaakkola, 2005). Both the World Health Organization (WHO) and the International Council of Nurses (ICN) have expressed the need to better protect international health care work forces (“ICN, WHO lead effort to reduce needlesticks,” 2004; Wilburn & Eijkemans, 2004).

This research had some limitations. The first limitation was the delay in the approval of the application to conduct research study in central hospital Warri, from the ethic committee of the institution. There were also no existing records for case of nurses that has actually been affected by this occupational risk and hazards. There was also reluctance in cooperation on the part of some nurses who feel the result of the research would not be considered by the hospital authorities for any meaningful improvement on their working conditions and were therefore not willing to cooperate. Other Nurses were afraid that if they participate, they will be victimized, while the last batched were not just interested in research even when it concerns them.

Recorded success and achievement: The achievement recorded in central hospital warri was the tight screening and diagnostic exercise that are carried out on patient that are suspected to have this high risk infections and contagious illness, and the prompt referral exercise and the quarantine of such cases to other competent hospital.

Methodology

Study location

The hospital used for this study is a public health institution, which is located in Warri, south local government area of Delta, Nigeria. It is in the south - south part of Nigeria, in the coastal region. The hospital has about 247 beds.

Data collection

Data were collected from a survey of nurses working in central hospital warri, Nigeria, The nurses who provided data were all working in the all the wards/unit with a response of 88%. The Surveys were self-administered and anonymous and followed guidelines for human subject's protection specified by the ethic committee of the hospital. Nurses completed all surveys in English, as English is widely used in the Nigeria for business and education. The analyses excluded 2 respondents who wrongly tick every content of the question, leaving a sample of 20 respondents.

Measures

The data collection involves five major techniques which are 1. Sociodemographic characteristics of the respondents' age, sex and work experience as a nurse. 2. Knowledge on Occupational Hazards/Exposure 3. Personal Role in Occupational Health Hazards, Risk, and Safety Management 4. Incidents and Accident Suffered by Nurses Working in Central Hospital Warri 5. Comments from Nurses Working in Central Hospital.

The Work-related sociodemographic characteristics of the respondents were measured using questions about type of work setting (e.g., age, sex and work experience as a nurse); The highest age group working is between the age bracket of 40-49 (50%), age bracket of 50years and above recorded 35%, while 30-39 had a 15 %, 100 % of female nurses participated in the study, currently the on the job experiences ranges from 16ears and above with a 60%, 11-15 years has 25% while 6-10years is 15%. Nurses that rated high as having knowledge of occupational hazards/exposure is 55%, while the other sets of nurses that says that they have the knowledge of hazards are 30%, soe nurses says it is fair, 10% and the last 5% did not respond to the questions.

85% of Nurses that personally play a role in health, risk and safety management system in the hospital while 10% do not participate in it, 5% of nurses did not respond to the questions 50% of nurses has not been involve in incident and accident, 40 % says they have been involve within 1 to 5 times working as a Nurse in the hospital, The remaining 10% says they have been involve for more than 15 times. On the comment session, 33% nurse says they need training and reforms, another 33% complain of the poor working environment, that need urgent attention as some times, they are forced to work in darkness whenever the national power supply goes off 17% of nurses says the work is too stressful, while a second 17% did not comment on the issues.

Occupational health and Safety concerns were explored: (1) do the management team regularly inspect the hospital physical environment to identify conditions that pose or could pose a worker safety or health concern 65% says yes, 35% says no, (2) do you consider working pressure on nurses the greatest risk/hazards (heavy work load-shift work, small staff numbers), 55% said yes, while 45 % says no. (3) do central hospital nursing staff know they have the right to report injuries without fear of retaliation or discrimination, 85% says yes, 15% says no,(4) Do you consider low back pain and back injuries as an occupational injuries related to your job in the hospital, 50% said yes, 50 % says no,(5) do you consider needle stick injuries as a source of contagious pathogens/agent only, 50% says yes, while another 50 % says no, that you can also gets this infections from other means apart from needle stick injuries (6) does the hospital management have a hazards control plan that is up to date 10% says yes, while 75% says no, the last 10% did not response to it.

Data analysis

Descriptive statistics were used for easy interpretation of the data collected. Graphical representation of charts and tables were also used to aid the comparison of responses from data collected. Data collected were analyzed using pie and bar chart. Percentages were generated for each of the measures listed above.

Results

Table 1 provides work-related sociodemographic characteristics of the respondents' age, the sample. Clearly shows that nurses within the age bracket of 40-49 recorded 15 in the frequency table making it 50% of the nursing staff are within this age, the second set of age bracket are nurses who are 50 and above with a frequency record of 7, making 35% and the last is the age between 30 and 39 with a frequency of 3 and 15%. From this result, it is indicative that there is more advance nurses working in the hospital, which also show that, employment of young nurses has been stall for quite some times, which is a direct contribution to the workload of the few old nurses on ground.

Table 1. Nurses age

Nurses Age			
S/n	Years in range	Frequency	Percentage
1	30-39	3	15%
2	40-49	10	50%
3	50 AND ABOVE	7	35%
Total		20	100%

Table 2: Stress relationship to working environment

From table 2 below, it is very clear that 100% responded that participated in the study were all women. this can be attributed to the imbalance in the entry percentage of male nursing student as compare to female nursing student's, nursing profession originally is more represented by women than men. Therefore the total numbers of 20 (100%) respondents were females.

Table 2. Nurses sex

Nurses Sex			
S/n	Sex	Frequency	Percentage
1	FEMALE	20	100%
2	MALE	0	0 %
3	MISS/NO RESPONSE	0	0 %
Total		20	100%

Table 3. Work related stress

Sex	without stress	very high	high	Moderate	total
Percentage/no	% and no	% and no	% and no	% and no	
Female	0%	9 (45%)	9 (45%)	2 (10%)	20 (100%)

Table 3 provides the number of the majority of the respondents that have worked for 16 years and beyond with a (60%). with a Twelve (12) frequency number, Nurse who have worked for 11 – 15 years has a frequency number of 5 with (25%). The next group of nurse working experience in central hospital warri was the category of nurses who has put on between 6 years to 11 years. There was no

Nurse that has worked below 5 years; this indicates that large majorities of the respondents are experienced because they have served for a longer period as professional Nurse, and this will also be a factor for them to be most affected by occupational health stress that relate directly to the working environment.

Table 4. Years of experience

Years of experience as a Nurse.			
S/N	Yes of experience of Nurses	FREQUENCY	PERCENTAGE
1	Up to 5 years	0	0 %
2	6 to 10 years	3	15%
3	11 to 15 years	5	25%
4	16years and beyond	12	60%
Total		20	100%

Table 4 below provides information that 55% of nurses are aware of the high occupational health risk, while 30% says, that the health risk is very high, 10% of the nurses that participated in the studysays, the health risk is fair, while only 5% of nurses did not respond to the issue.

Table 5. Awareness of health risk in central hospital warri.

Sex	very high	high	fair	No response	Total
percentage %/number	% and no	% and no	% and no		
Male	Not represented	Not represented	Not represented	Not represented	
Female	6 (30%)	11 (55%)	2 (10%)	1 (5%)	20 (100%)

The table below indicates that majority of the nurses were exposed to extreme pressure at work which can be related to the shortage of nursing staff from non employment of new nursing personnel for more than 6 years which is a reflection in the statistic that indicated that no nurse that is working in central hospital warri, has below 5 years working experience in the hospital 30% complain of heat while 20% said they are experiencing low back pain, the remaining 10% said that they are always expose to contagious pathogens/agent.

Table 6. Specific risk and occupational health hazards

specific risk and occupational health hazards					Total in both frequency and percentages 20(100%)
S/N	Heat	Low back pain	Extreme pressure at work	Contagious pathogens/agents or microbes	
1	6	4	8	2	
%	30%	20%	40%	10%	
Total	6(30%)	4(20%)	8(40%)	2(10%)	

The table below provides information that shows that 85% Nurses working in the hospital know their personal role in relation to health and safety management system, while 10% says they do not know, the remaining 5% did not response.

Table 7. Personal role on health and safety management system

Response	Frequency	Percentages
Yes	17	85%
No	2	10%
No response	1	5%
Total	20	100%

The table below indicates that 50% of the nurses have not been involved in any form of health problems or has sustain injury in the course of doing their jobs, 40 % says they have suffered some health problems and injuries within the range of 1-5 times, 10% said that, they have been involved in health problems and has injuries from their place of work, for more than 15times.

Table 8. How many times have you had health risk/injuries

How many times have you had health risk/injuries		
Times	Frequency	Percentages
Non	10	50%
1-5 times	8	40%
6-10 times	0	0
11-15 times	0	0
More than 15 times	2	10%

Individual comment

The table below provides comments from individual nurses on some issues, 33% of them says that the hospital management should improve on the training and reform of the hospital, another 33% says that the hospital has a very poor working environment, 17% says that the stress they face is high and that the management should employ new sets of nurses to reduce the work load. The remaining 17% was for the nurse that wrote no comment.

Table 9. Nurses final comment from the questionnaire

Comments by nurses	Frequency (no)	Percentage (%)
Training and reform	2	33%
Stress	1	17%
Poor working condition	2	33%
No comment	1	17%
Total		100%

Reporting behaviour

From the study, 55% of the nurses say they report any work related health problems to the hospital management, while 40% says do not report. Only 5% of the nurses did not respond to this question.

Table 10. Reporting behaviour

Action	Frequency (no)	Percentages (%)
Nurse that report	11	55%
Nurses that do not report	8	40%
Nurses that did not respond	1	5%
Total	20	100%

Nurses working in the hospital say the safety measure of the hospital is fair with a 70%, while 20% said, that the hospital is unsafe, the remaining 10% say the hospital is safe to work.

Table 11. Safety concern of central hospital warri.

Rating of hospital safety measures	Frequency (no)	Percentages (%)
Fair	14	70%
unsafe	4	20%
safe	2	10%
Total	20	100%

Discussion

This study of occupational health risk and hazards among nurses who work in central hospital, Warri, provides preliminary insight into the health, hazards and risk that they encounter in the Nigeria public health care system.

Occupational health risk, hazards and injuries

From the study so far, a considerable portion of the respondents reported they had experienced occupational health risk, hazards, low back pain, extreme pressure at work, health, work related stress, needle stick injuries, and contagious blood pathogen/agent or microbes as they go about their daily activities as nurses. Roughly 40% of the nurses mentioned that they are regularly face with extreme pressure at work, suprisely, 10% says they have been involved in health risk, hazards and injuries for more than 15 times in the hospital, while 40% say, they have only sustain injury or been face with occupational health risk, hazards and injuries for within 1 to 5 times in the course of their day to day operation in central hospital warri in Delta State.

Awareness of health risk in central hospital Warri.

Sex	very high	high	fair	No response	Total
percentage %/number	% and no	% and no	% and no		
Male	Not represented	Not represented	Not represented	Not represented	
Female	6 (30%)	11 (55%)	2 (10%)	1 (5%)	20 (100%)

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1	6	4	8	2	
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Total	6(30%)	4(20%)	8(40%)	2(10%)	

These proportions were similar to those reported by American nurses participating in the ANA survey (Houle, 2001). For example, 37% of this sample and 40% of the ANA survey respondents indicated a past-year work injury. 45% of Nurses working in central hospital, warri says they are also faced with worked related stress, which is same when compare to nurses working in different wards of Al-Zahra hospital which showed that 42 ± 6 mean stress level. Nurses level of stress were 44.4 % had a low-stress level, 55.1 % had a moderate-stress level, and 0.5 % had a high-stress level. (BioMed Central- Tadesse Dagget) There were significant correlation with stress level, job satisfaction and leisure. This study suggest that future investigation is warranted and should provide comprehensive information on the type of occupational health risk, hazards and injury that are seen in public hospital in developing world.

Extreme work pressure

It is shocking to see that 40% nurses working in central hospital warri, Nigeria reported that they faced with extreme pressure at work or workload pressure as compare to the study conducted by (Alper and colleagues) they conducted a survey of 120 nurses (59 percent response rate) in three units of a paediatric hospitals to assess self-reports of workload pressure at work. Between 8 percent and 30 percent of the nurses reported mild pressure at work, and between 32 percent and 53 percent of the nurses reported extreme pressure at work most especially in the cases of emergency situations.

Nurses Sex

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Work related stress

Sex	without stress	very high	high	Moderate	total
Percentage/no	% and no	% and no	% and no	% and no	
Female	0%	9 (45%)	9 (45%)	2 (10%)	20 (100%)

Further research is needed to understand the work system factors that lead to extreme work pressure which is as a result to violations at the side of the hospital management. Extreme pressure occurs more frequently when nurses are under time pressure or high workload because of emergency situations. Under high workload, nurses may not have time to follow rules and guidelines for safe care, especially if following the rules and guidelines necessitate additional time, such as hand washing, having needle stick injuries, involving in work injury or illness. These findings are not

atypical to central hospital, warri Nigerian, For example, roughly one fourth of U.S. nurses also reported missing two or more days for work-related injury or illness resulted to extreme pressure at work (Houle, 2001). From this study, it was clearly observed that they have not been any new employment for nurses in central hospital,warri,eventhogh,nurses are retired from service every year, no replacement, there by mounting more pressure on the nurses that are left to do the same job that was done by the retired nurses and the once left. (No nurses have 0 -5 years working experience in the hospital).

Low back pain /back injuries

20% of the nurses complain of low back pain /back injuries in the study, which was found to be attributed to wrong lifting procedure, irregular movement and some ergonomic risk associated to the tight working environment of the hospital. This study can also be compare to the estimated prevalence of back pain for U.S. nurses which range from 20% to 52% (Harber et al., 1985; Nelson, 2003; Owen, 1989). Because back pain is an important cause of disability, this acknowledgement of working after an injury suggests that ergonomic control measures (e.g., mechanical patient lifting equipment and training) may improve nurses' well-being and, potentially, the quality of patient care.

Reporting behaviour

Majority of nurses working in central hospital, Warri, Nigeria that is 55% says they report work-related problems to the hospital authorities although a large proportion of participants indicated a work-related injury, 40% did not report their injuries to the hospital authority, 5% did not even respond to the question. It is not only peculiar in Nigeria that Nurses do not report cases to hospital authority, Underreporting of work-related injuries and illnesses has also been noted as a significant problem among nurses in the United States (Brown et al., 2005; de Castro, 2003; Haiduven, Simpkins, Phillips, & Stevens, 1999; Siddharthan, Hodgson, Rosenberg, Haiduven, & Nelson, 2006; Tabak, Shiaabana, & Shasha, 2006). In part, low incident reporting in this sample was due to respondents feeling that the injury was not significant, but other key reasons were that nurses were too busy or felt that the injury was just "part of the job." These reasons are concerning as they not only contribute to nurses working with injuries, but could also result in an artificially low injury rate. Efforts must be made to encourage nurses to report their injuries within their schedule to improve nurse outcomes and the accurate assessment of workplace health and safety.

Safety Concerns

Years of experience

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Personal role on health and safety management system

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Safety concern of central hospital warri

Rating of hospital safety measures	Frequency (no)	Percentages (%)
Fair	14	70%
unsafe	4	20%
safe	2	10%
Total	20	100%

From the study, 70% of the staff nurse says that the safety measure of the hospital is fair, while 20% says, the working environment of the hospital is unsafe, the remaining 10% says, the hospital is safe. Which when compared to 44% of U.S. nurses (Houle, 2001). Which says their hospital is safe? However, this difference may also reflect nurses' lower expectations for safe working conditions. Currently, in the Nigeria, nurses are not united as each zone what to be superior than the other, therefore do not have a formal mechanism to identify workplace hazards and advocate for improved working conditions.

Conclusion

From this research work, studies in the United States and other Western countries suggest that nurses face considerable occupational health and safety risks. Nerveless, this study suggests many commonalities in the types of occupational health risk and hazards that are inherent in public hospital, Majority of the nurses reported occupational health risk, hazards, which is very helpful in curtailing the menace of work related occupation risk and hazards that nurse are exposed, this same research work, can be extended to other medical field, as they work in the same environment and attend the

same patient. The report from the respondents was very helpful as it will be used to formulate workplace plan, policies and practices, such as the provision of patient lifting devices, but about one third of the sample reported poor or no employer information related to nursing occupational hazards. Future research should verify these findings and assess the potential interventions that may enhance nurses' health and well-being and promote quality patient care. It will be very nice to see the entire health care stakeholder joining hand together to carry out all inclusive study on the occupational health risk, hazards that the health care industries are exposed to, most especially in the developing country like ours. Nigeria.

Figures

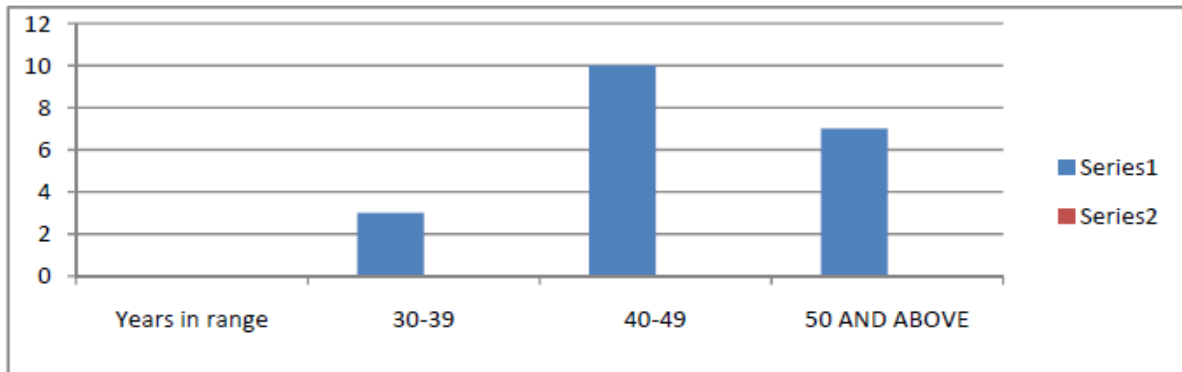


Figure 1. Represent the age bracket of nurses working in central hospital warri

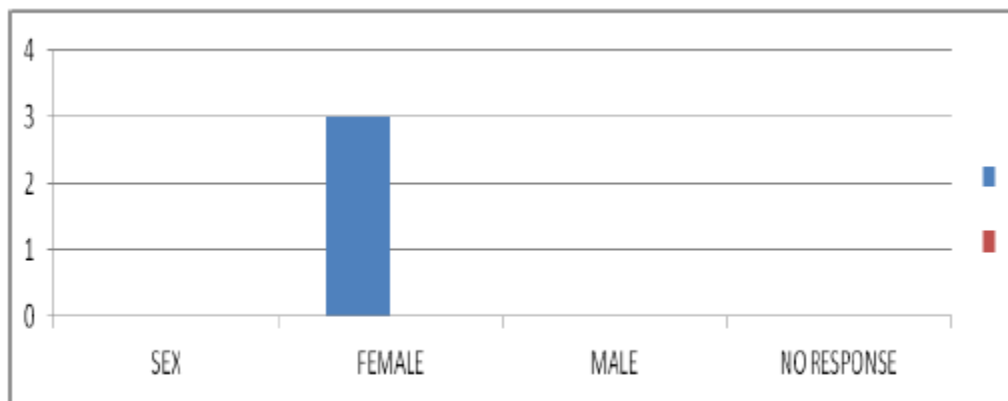


Figure 2. Represent the sex of nurses that participated in the research work as stated above.

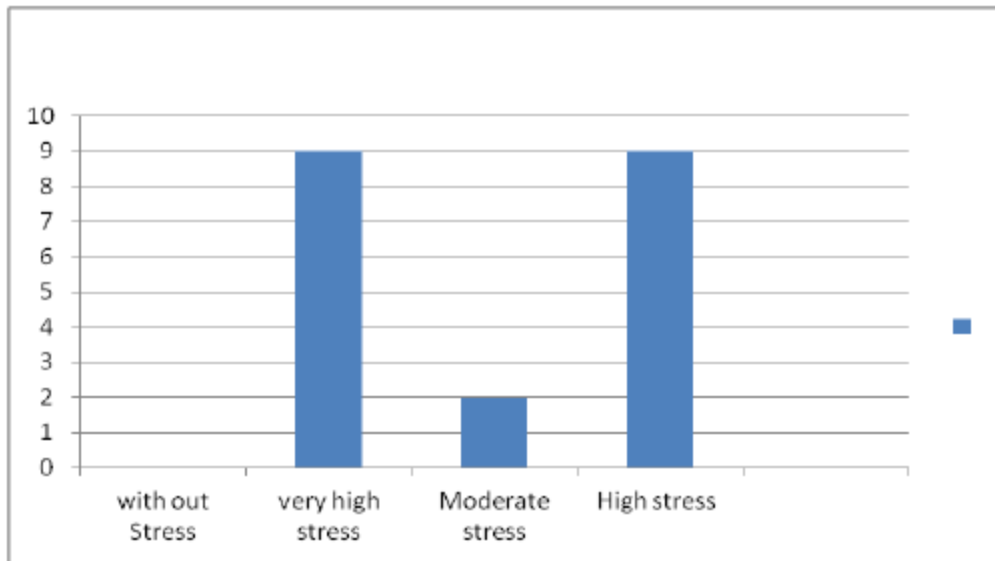


Figure 3 :Level of stress that nurses faced in the hospital

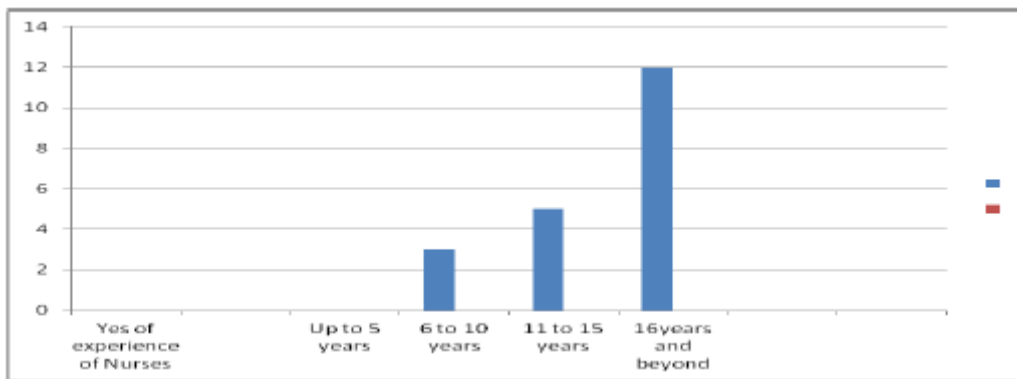


Figure 4. Bar chart represent yes of experience of nurses working in central hospital warri

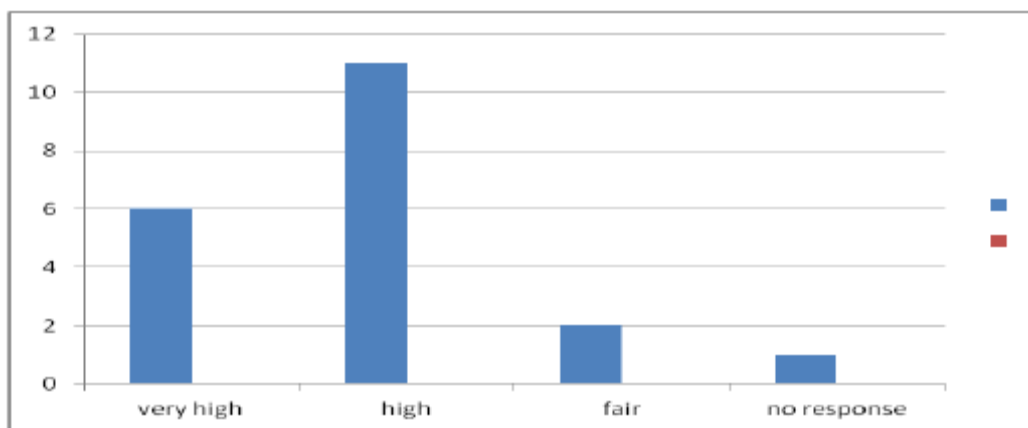


Figure 5. The bar chat represent nurses response to acknowledging risk in the hospital

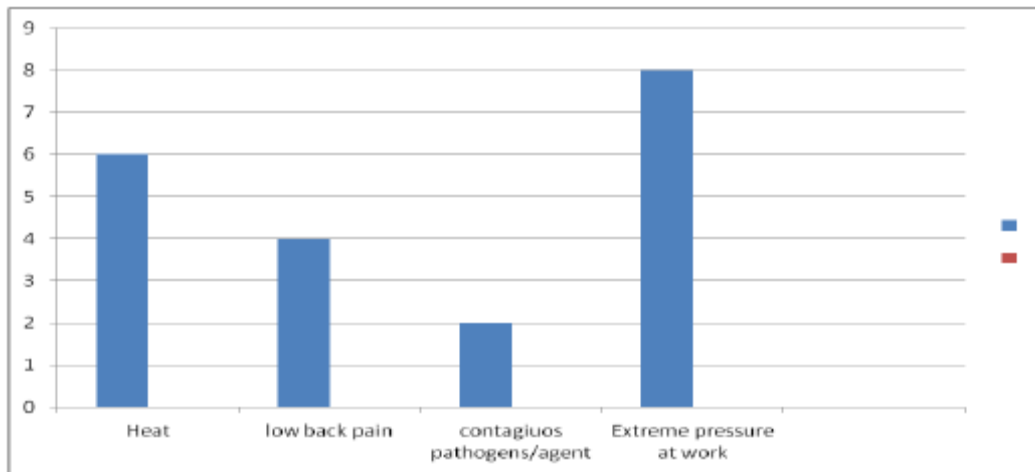


Figure 6. The bar chart represents nurses who have suffered from various occupational issues at work

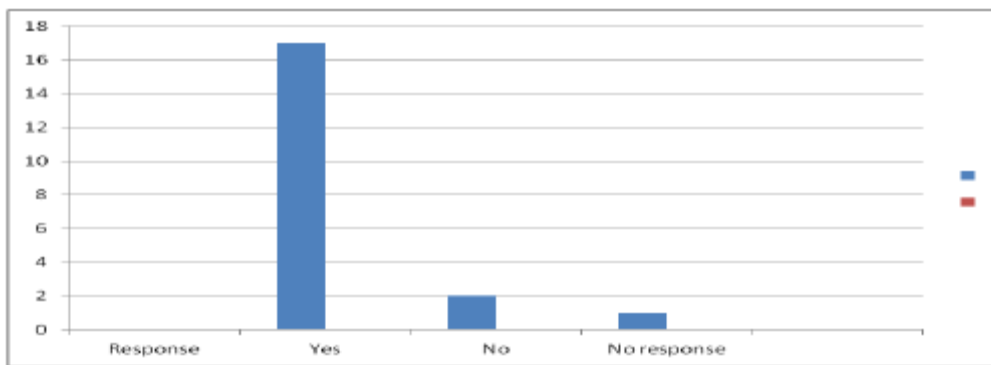


Figure 7. The bar chart represent personal role of each nurse on health and safety management

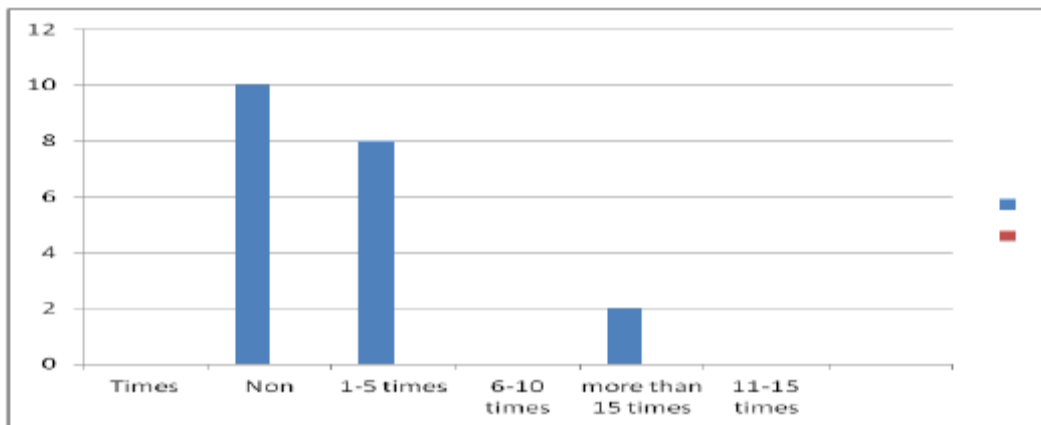


Figure 8. The bar chart represent the number of times that nurses have sustain injuries/risk

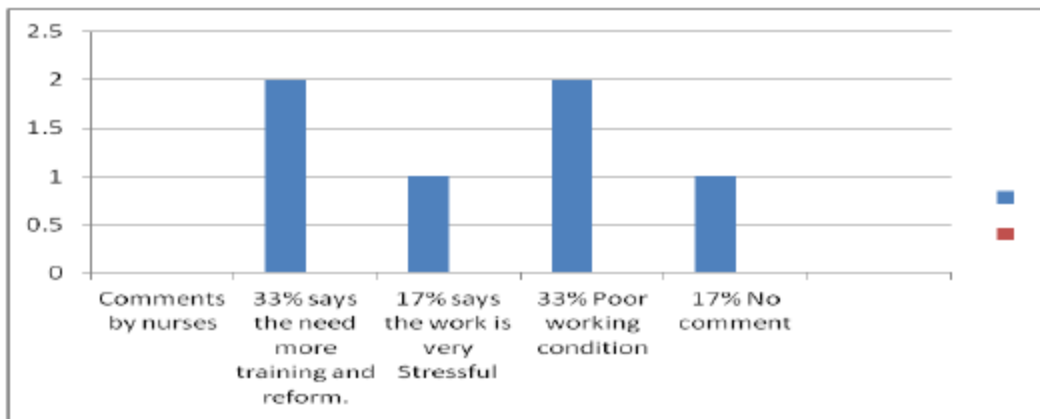


Figure 9. Last comment issues by respondent concerning the hospital

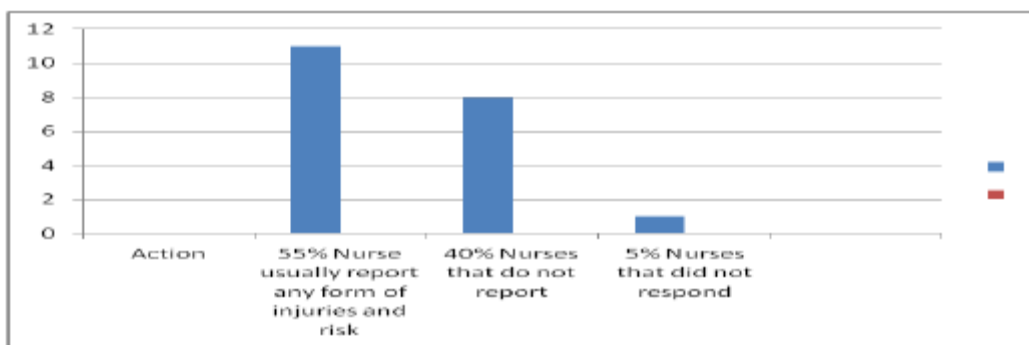


Figure 10. Report behaviour of nurses as stated in the bar chat

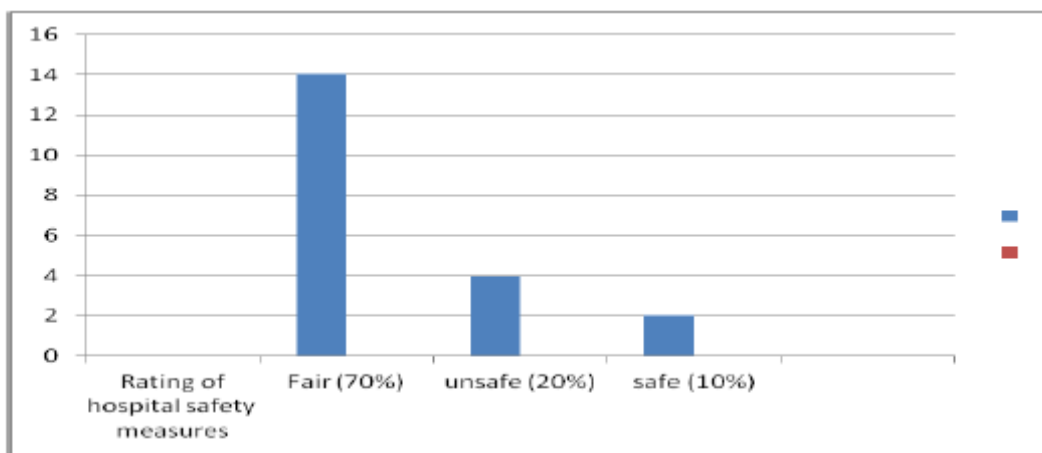


Figure 11. Represent the safety rating of central hospital

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