



HEALTH RISK PERCEPTION AND EXPOSURE AMONG NURSES IN HEALTHCARE FACILITIES OF CENTRAL SENATORIAL AREAS IN BAYELSA STATE

Amire Abayomi Stephen¹, Golda O. Ekenedo (Prof.)²,

Kwarbai Aaron Maitala³, and Chinwe Grace Azuka⁴

¹Ignatius Ajuru University of Education

Email: yorhme@gmail.com

²Ignatius Ajuru University of Education

Email: golda.ekenedo@uniport.edu.ng

³World Health Organization

Email: kwarbaiaaron@gmail.com

⁴World Health Organization

Email: chinweg.azuka@gmail.com

Cite this article:

Amire Abayomi Stephen, Golda O. Ekenedo, Kwarbai Aaron Maitala, Chinwe Grace Azuka (2025), Health Risk Perception and Exposure Among Nurses in Healthcare Facilities of Central Senatorial Areas in Bayelsa State. International Journal of Public Health and Pharmacology 5(2), 1-19. DOI: 10.52589/IJPHP-SX5BYBAN

Manuscript History

Received: 18 Feb 2024

Accepted: 7 May 2024

Published: 12 Aug 2025

Copyright © 2025 The Author(s).

This is an Open Access article distributed under the terms of Creative Commons Attribution-NonCommercial-NoDerivatives 4.0 International (CC BY-NC-ND 4.0), which permits anyone to share, use, reproduce and redistribute in any medium, provided the original author and source are credited.

ABSTRACT: *Introduction: Nursing is a profession whereby trained personnel (nurses) provide care for patients. Nurses are considered as the backbone of healthcare. However, during the fulfilment of their duties and responsibilities, nurses are continuously exposed to occupational dangers and risks which affect their health and nursing quality. The objective of this study was to investigate health risk perception and exposure among nurses in healthcare facilities of senatorial areas of Bayelsa state. Methodology: A descriptive cross sectional survey design was adopted to investigate the health risk perception and exposure among 289 nurses in healthcare facility of central senatorial area in bayelsa state. Data was collected using a well-structured questionnaire. with a reliability coefficient of 0.70 and analyzed with the aid of the statistical package for social sciences (SPSS) version 25. Descriptive results were presented in frequencies and percentages using tables and charts. Inferential statistics of binary logistic regression and chi-square test were employed in analyzing the hypotheses at 0.05 alpha level. Result: The study found that the majority of respondents had a high level of health risk perception (57.4%) and exposure (60.4%). There was no statistical significant difference found in health risk perception of the respondents based on years of work experience and educational status. Respondents in the casualty unit had higher health risk perception [OR:4.606 (95% CI= 1.487-14.265)]. Those with 6-10 years of work experience had higher health risk exposure [OR:0.012 (95% CI= 0.002-0.065)]. Respondents with B.ScN were also had higher health risk exposure [OR:1.597 (95% CI= 0.823-3.101)]. Respondents in theatre and casualty units had high health risk exposure. The result revealed that respondents in the theatre ($P<0.01$) and casualty ($P<0.05$) units did significantly exhibited high level of health risk exposure. The odds ratio revealed that respondents in theatre are 0.123 times had high health risk exposure while respondents in the casualty unit are 0.050 times exhibited high level of health risk exposure. Conclusion: The study concluded that nurses are aware of the health risks they can be exposed to in the course of carrying out their duties, hence the need to encourage them to ensure adherence to safety and protection measures to reduce health risks exposures. The study recommended that hospital management of various health care institutions should provide adequate and complete PPE, to encourage safety practices and reduce occupational health risks.*

KEYWORDS: Nurses, Health Risk, Exposure.



INTRODUCTION

Healthcare workers (HCWs) especially nurses play an important role in providing prevention, diagnosis, treatment, and care to people in diverse healthcare settings (Abuduxike et al., 2021). It was reported that of 35 million healthcare workers worldwide, about two to three million of them every year experience a needle stick injuries that contributed to 65% of all hepatitis B virus and hepatitis C virus, and 4.4% of HIV infections globally. This report also suggested inadequate compliance and a lack of knowledge about standard protections (SPs) using personal protective equipment (Abuduxike et al., 2021). In developing countries, it was confirmed that 95% of nursing professionals are exposed to occupational hazards. Additionally, each year, there are as many as 250 million occupational injuries resulting in 330000 fatalities. Moreover, medical sharps injuries cause about 2 million HBV, 900, 000 HCV and 170, 000 HIV infections among health care workers each year globally (Ramadan et al., 2018). Nursing is a profession whereby trained personnel (nurses) provide care for patients. Nurses are considered as the backbone of the healthcare system (Denge & Rakhudu, 2022). However, during the fulfilment of their duties and responsibilities, nurses are continuously exposed to occupational dangers and risks which affect their health and nursing quality (Yesilgul et al., 2018; Quinteiro et al., 2021; Denge & Rakhudu, 2022; Hamid et al., 2022). Nursing personnel consider or perceive a wide range of workplace health risk exposure than other health care personnel because of the nature of nursing everyday jobs, the theatre invasive procedures such as positioning, turning, walking patients, etc. (Ramadan et al., 2018).

Risk as a psychologically oriented phenomenon, is the “likelihood that a person may be harmed or suffers adverse health effects if exposed to a hazard” and can be influenced by other factors, including probability, the severity of outcome, controllability, and unfamiliarity of the hazards (Dovjak & Kukec, 2019; Aram et al., 2022). Health risk is an epidemiological term and is defined as something that could cause harm to people’s health. It is described as the likelihood that a given exposure or series of exposures may have damaged or will damage the health of individuals (Dovjak & Kukec, 2019).

Risk perception is considered to be an individual's psychological evaluation of the probabilities and adverse consequences of an event (Aram et al., 2022). Risk perceptions are a prerequisite for protective action (Schmalzle et al., 2017). Healthcare workers’ risk perception is their perceived risk or opinion about acquiring occupational injury (such as needle stick or sharps injury) or exposure to blood/body fluids while on duty (Gebremariam, 2019; Ogunnaike & Akinwaare, 2020).

Occupational exposure can be defined as the presence of a substance or risk factor in the work environment external to the worker (Shi et al., 2020). Health professionals are challenged with physical, chemical, and psychological hazards that exposes them to various health risks (Amare et al., 2021). Nurses are exposed to physical hazards such as needle stick injuries, blood and blood products, etc., in their workplace leading to the risk of infections. However, adherence to standard precautions can minimize exposure (Denge & Rakhudu, 2022). Research have shown that the higher the nurses' risk perception about the contagious disease, the greater their prevention strategies (Lyu et al., 2021; Ezike et al., 2022).

Several protective safety measures must be taken to reduce occupational health risk exposure. The availability and accessibility to PPEs are important factors for the safety of nurses in their workplace (Ogunnaike & Akinwaare, 2020). Various studies have reported on the knowledge



of nurses about health risks in the work environment, health risk perception and exposure as well as safety practices among healthcare worker. Ahmed & Shareef (2019) found that nurses often lack comprehensive knowledge about occupational health and safety measures, leading to various health risks during their working years (Ahmed & Shareef, 2019). In a study to assess the perceived risk of contracting COVID-19 among healthcare workers in Ghana, there was a high perceived risk of contracting COVID-19 at the workplace among healthcare workers with tertiary level education (Aram et al., 2022). In another study by Gebremariyam, (2019), a total composite score of HCWs' risk perceptions showed that 174 (62.8%) (95% CI: 57.0-68.9) of HCWs had adequate risk perception of occupational exposures, whereas 103 (37.2%) (95% CI: 31.1-43.0) of HCWs had inadequate risk perception. The study further conducted a multivariable logistic regression analysis to assess the independent determining factors of occupational exposure. The results showed that HCWs who had less than five years work experience were 2.4 times more likely to get a needle stick injury compared to those who had equal and more than service year (AOR: 2.40; 95% CI: 1.00-4.46) (Gebremariyam, 2019). The results of a study by Kassaw & Demisse, (2021), revealed that 53.88% of health care workers had experienced occupational exposure to blood and other body fluids (Kassaw & Demisse, 2021). Elneblawi et al., (2022), reported that majority of nurses perceived that they were at high risk of getting COVID-19 and were concerned that they could easily transmit COVID-19 to their relatives. As a result, many implemented preventive measures to protect themselves and prevent transmission of COVID-19 to their families and relatives (Elneblawi et al., 2022). Paying attention to enhance nurses' risk perception is decisive to attain a significant decline in occupational exposure among nurses. Various studies have reported varying level of health risk perception and exposure among health care professionals. However, there are no specific studies carried out among nurses specifically in Bayelsa State, Nigeria. Thus, the study seeks to assess the health risk perception and exposure among nurses in private and public secondary health facilities in Bayelsa State Central Senatorial areas. The study will consider sociodemographic factors such as years of work experience, educational status and job posting as independent variables and determine how they relate or influence the dependent variables (level of health risk perception and level of health risk exposure). Studies have shown that educational level of healthcare professionals influence their perceptions of the risk of contracting infectious diseases (Aram et al., 2022).

METHODOLOGY

Research Design

A cross-sectional descriptive study design was adopted for this research. The investigator measures the outcome and exposure in the study participants at the same time. It provides data for describing status of relationships and is sustainable for this study.

Research Instrument and Data Collection

The instrument for data collection was an interviewer-administered questionnaire titled level of Health Risk Perception and Exposure among nurses. The research instrument was divided into three sections; Section A collected social-demographic variables. Section B addressed level of health risk perception among nurses and contains 25 questions with responses categorized into; Strongly Agree, Agree, Undecided, Disagree, & Strongly Disagree. Section



C addressed Level of health risk exposure among nurses and contains 25 questions with responses categorized into; Never, Rarely, Sometimes and Always.

Method of Data Analysis

The data collected from the study was analyzed using the SPSS version 21. Frequencies and percentages were used to answer research questions, while hypothesis were tested using chi-square analysis at 0.05 significant level. The sample size for the study was 289, however, the analysis was based on 270 because the researcher was not able to retrieve all copies of the administered questionnaire, giving a return rate of 93.4%. Binary logistics regression analysis was used to analyze influence of the independent variables on the dependent variables.

RESULTS

Socio-Demographic Characteristics

Table 4.1: Demographic Characteristics of the Respondents (n=270)

Variables	Frequency	Percentage (%)
Sex		
Male	27	10.0
Female	243	90.0
Age Group		
15 – 30	52	35.6
31 – 39	87	59.6
40 and above	7	4.8
Marital Status		
Married	161	59.6
Single	109	40.4
Widow		
Divorced/separated		
Qualification/level of education		
RN	54	20.0
RN/RM	27	10.0
B.SCN	189	70.0
MSN/Ph.D. Nursing		
Years of experience		
1 – 5	109	40.4
6 – 10	54	20.0
11 – 15	54	20.0
16 – above	53	19.6
Unit		
Wards	215	79.6
Theatre		
OPD	27	10.0
Casualty	28	10.4
Size of hospital		



small hospital		
medium hospital	243	90.0
large hospital	27	10.0
Ownership of health facility		
Public	134	49.6
Private	136	50.4

Table 4.1 showed the socio-demographic characteristics of the respondents. Majority of the nurses were females 243(90.0%). majority of the nurses 87(59.6%) were within the age range of 31-39 years, 52(35.6%) were within the age range of 15 – 30 years, 7(4.8%) were 40 and above. Majority of the participants 161(59.6%) were married, 109(40.4%) were single. With regard to qualification/level of education, most of the participants 189(70.0%) had B.SCN, 54(20.0%) had RN, 27(10.0%) had RN/RM. 109(40.4%) of the participants reported 1 – 5 years of experience, 54(20.0%) reported 6 – 10 years, 54(20.0%) reported 11 – 15 years, 53(19.6%) reported 16 years and above. Majority of the respondent's 215(79.6%) job posting unit was wards, OPD was 27(10.0%), casualty was 28(10.4%). regarding size of hospital, majority of the respondents worked in medium hospital 243(90.0%), while 27(10.0%) worked in large hospital. Ownership of hospital 134(49.6%) were public while 136(50.4%) were private.

Research Question 1: What is the level health risk perception among nurses in central senatorial area of Bayelsa State

Table 4.2: Level of health risk perception

Variable	SA	A	UN	D	SD
Biological Health Risks					
I think I am at risk of contracting infectious diseases in the course of rendering care	67 (24.8)	165 (61.1)	14 (5.2)	10 (3.7)	14 (5.2)
I think I am exposed to contact with micro-organisms from specimen within my work place	37 (13.7)	148 (54.8)	13 (4.8)	57 (21.1)	15 (5.6)
I think I am at risk of contracting disease contaminated with body fluids	41 (15.2)	160 (59.3)	14 (5.2)	41 (15.2)	14 (5.2)
I think I am at risk of being pricked by needle in the course of administering injection	46 (17.0)	140 (51.9)	22 (8.1)	55 (20.4)	7 (2.6)
I think I am exposed to blood and blood products during patient care	71 (26.3)	141 (52.2)	11 (4.1)	34 (12.6)	13 (4.8)
Chemical Health Risks					
I think I am exposed to toxic chemicals from sterilizing products	41 (15.2)	122 (45.2)	14 (5.2)	40 (14.8)	53 (19.6)
I think I am exposed to toxic chemicals from disinfectants	13 (4.8)	34 (12.6)	11 (4.1)	141 (52.2)	71 (26.3)
I think I am exposed to toxic chemicals used in treating patients	41 (15.2)	122 (45.2)	14 (5.2)	40 (14.8)	53 (19.6)
I think I am exposed to risk of having chemical irritants	14 (5.2)	27 (10.0)	14 (5.2)	161 (59.6)	54 (20.0)
I think I am exposed to risk of chemical burns	54 (20.0)	148 (54.8)	14 (5.2)	27 (10.0)	27 (10.0)



Physical Health Risks

I think I am exposed to heat and thermal discomfort within my work place	67 (24.8)	161 (59.6)	14 (5.2)	14 (5.2)	14 (5.2)
I think I am exposed to radiation within my work place	39 (14.4)	175 (64.8)	14 (5.2)	42 (15.6)	--
I think there is poor ventilation within my work place	39 (14.4)	161 (59.6)	14 (5.2)	42 (15.6)	14 (5.2)
I think I am exposed to noise from equipment within my work place	67 (24.8)	148 (54.8)	28 (10.4)	27 (10.0)	--
I think I am exposed to fall or slip in the course of rendering care	54 (20.0)	135 (50.0)	28 (10.4)	40 (14.8)	13 (4.8)

Psychological Health Risks

I think I have risk of anxiety within my work place	55 (20.4)	134 (49.6)	28 (10.4)	53 (19.6)	0(0)
I think I am exposed to stress within my work place	81 (30.0)	147 (54.4)	14 (5.2)	14 (5.2)	14 (5.2)
I think I am exposed to feeling of isolation, fatigue, anger, due to a sense of depersonalization created by a large bureaucratic system	41 (15.2)	122 (45.2)	14 (5.2)	40 (14.8)	53 (19.6)

I think I have risk violence from patients	54 (20.0)	161 (59.6)	14 (5.2)	27 (10.0)	14 (5.2)
tiredness due to long and intensive work hours in shifts	54 (20.0)	148 (54.8)	14 (5.2)	27 (10.0)	27 (10.0)

Ergonomic Health risks

I think I am exposed to exhaustion in the course of rendering care	55 (20.4)	134 (49.6)	28 (10.4)	53 (19.6)	0(0)
I think I am exposed to being assaulted by a patient during patient care	81 (30.0)	147 (54.4)	14 (5.2)	14 (5.2)	14 (5.2)
I think I am exposed to strain in the cause of rendering care	41 (15.2)	122 (45.2)	14 (5.2)	40 (14.8)	53 (19.6)
I think I am exposed to stress from work load	54 (20.0)	161 (59.6)	14 (5.2)	27 (10.0)	14 (5.2)
I think I am exposed to back injuries in the course of rendering care	54 (20.0)	148 (54.8)	14 (5.2)	27 (10.0)	27(10.0)

Table 4.2 showed the level of health risk perception. Under biological health risks, majority of the respondents 165(61.1%) think that they are at risk of contracting infectious diseases in the course of rendering care, 67(24.8%) strongly agreed, 14(5.2%) were undecided, 10(3.7%) disagreed while 14(5.2%) strongly disagreed. Regarding the statement "I think I am exposed to contact with micro-organisms from specimen within my work place" 37(13.7%) of the respondents strongly agreed, 148(54.8%) agreed, 13(4.8%) were undecided, 57(21.1%) disagreed, while 15(5.6%) strongly disagreed. Majority of the respondents 160(59.3%) agreed that they think they are at risk of contracting disease contaminated with body fluids, 41(15.2%) strongly agreed, 14(5.2%) were undecided, 41(15.2%) disagreed, while 14(5.2%) expressed strong disagreement. Regarding the statement "I think I am at risk of being pricked by needle in the course of administering injection" 46(17.0%) of the respondents agreed, 140(51.9%)



strongly agreed, 22(8.1%) were undecided, 55(20.4%) disagreed while 7(2.6%) disagreed. Majority of the respondents 141(52.2%) agreed that they think they are exposed to blood and blood products during patient care. Under chemical health risks, majority of the respondents 122(45.2%) agreed that they think they are exposed to toxic chemicals from sterilizing products. To the statement “I think I am exposed to toxic chemicals from disinfectants” majority of the respondents 141(52.2%) disagreed. To the statement “I think I am exposed to toxic chemicals used in treating patients” majority of the respondents 122(45.2%) agreed. To the statement “I think I am exposed to risk of having chemical irritants”, majority of the respondents 161(59.6%) disagreed. To the statement “I think I am exposed to risk of chemical burns”, majority of the respondents 148(54.8%) agreed. Under physical health risks, majority of the respondents 161(59.6%) agreed that think they are exposed to heat and thermal discomfort within my work place. I think I am exposed to radiation within my work place. To the statement “I think there is poor ventilation within my work place”, majority of the respondents 161(59.6%) agreed. Regarding the statement “I think I am exposed to noise from equipment within my work place”, the majority of the respondents 148(54.8%) agreed. To the statement “I think I am exposed to fall or slip in the course of rendering care”, half of the respondents 135(50.0%) agreed. Under psychological health risks, majority of the respondents 134 (49.6%) agreed that they think they have risk of anxiety within my work place. To the statement “I think I am exposed to stress within my work place”, majority of the respondents 147(54.4%) agreed. To the statement “I think I am exposed to feeling of isolation, fatigue, anger, due to a sense of depersonalization created by a large bureaucratic system” majority of the respondents 122(45.2%) agreed. Majority of the respondents 161(59.6%) agreed that they think they can have risk violence from patients. Under ergonomic health risks, majority of the respondents 134(49.6%) agreed that they think they are exposed to exhaustion in the course of rendering care. Majority of the respondents 147(54.4%) agreed that they think they can be exposed to being assaulted by a patient during patient care, 122(45.2%) agreed that they think they can be exposed to strain in the cause of rendering care, 161(59.6%) agreed that they think they can be exposed to stress from work load, 148(54.8%) agreed that they think they can be exposed to back injuries in the course of rendering care.

Research Question 2: What is the level of exposure to health risks among nurses?

Table 4.3 Level of health risk exposure

Variable	Never	Rarely	Sometimes	Always
Biological Health Risks				
Nursed a patient with infectious disease	0(0)	0(0)	215 (79.6)	55 (20.4)
I have been exposed to contact with micro-organisms from specimen within my work place	54 (20.0)	110 (40.7)	106 (39.3)	0(0)
I have been exposed to body fluids during patient care	28 (10.4)	132 (48.9)	110 (40.7)	0(0)
I have been exposed to being pricked by needle	53 (19.6)	163 (60.4)	54 (20.0)	0(0)
I have been exposed to blood and blood products during patient care	0(0)	81 (30.0)	161 (59.6)	28 (10.4)
Chemical Health Risks				



I have been exposed to toxic chemicals from sterilizing products	81 (30.0)	79 (29.3)	82 (30.4)	28 (10.4)
I have been exposed to toxic chemicals from disinfectants	0(0)	0(0)	189 (70.0)	81 (30.0)
I have been exposed to toxic chemicals used in treating patients	0(0)	27 (10.0)	214 (79.3)	29 (10.7)
I have been exposed to risk of having chemical irritants	81 (30.0)	109 (40.4)	53 (19.6)	27 (10.0)
I have been exposed to risk of chemical burns	26 (9.6)	56 (20.7)	135 (50.0)	53 (19.6)
Physical Health Risks				
I have been exposed to heat and thermal discomfort within my work place	0(0)	0(0)	215 (79.6)	55 (20.4)
I have been exposed to radiation within my work place	54 (20.0)	110 (40.7)	106 (39.3)	0(0)
I am exposed to poor ventilation within my work place	28 (10.4)	132 (48.9)	110 (40.7)	0(0)
I am exposed to noise from equipment within my work place	53 (19.6)	163 (60.4)	54 (20.0)	0(0)
I am exposed to fall or slip in the course of rendering care	81 (30.0)	161 (59.6)	28 (10.4)	0(0)
Psychological Health Risks				
I have risk of anxiety within my work place	81 (30.0)	79 (29.3)	82 (30.4)	28 (10.4)
I am exposed to stress within my work place	0(0)	0(0)	189 (70.0)	81 (30.0)
I have felt isolated, fatigued, and angry due to a sense of depersonalization created by a large bureaucratic system	0(0)	27 (10.0)	214 (79.3)	29 (10.7)
I have risk violence from patients	81 (30.0)	109 (40.4)	53 (19.6)	27 (10.0)
I have felt tiredness due to long and intensive work hours in shifts	26 (9.6)	56 (20.7)	135 (50.0)	53 (19.6)
Ergonomic Health risks				
I am exposed to exhaustion in the course of rendering care	81 (30.0)	79 (29.3)	82 (30.4)	28 (10.4)
I am exposed to being assaulted by a patient during patient care	0(0)	0(0)	189 (70.0)	81 (30.0)
I am exposed to strain in the cause of rendering care	0 (0)	27 (10.0)	214 (79.3)	29 (10.7)
I am exposed to stress from work load	81 (30.0)	109 (40.4)	53 (19.6)	27 (10.0)
I am exposed to back injuries in the course of rendering care	26 (9.6)	56 (20.7)	135 (50.0)	53 (19.6)

Table 4.3 showed the responses to level of health risk exposure among nurses. Under biological health risks, majority of the respondents 215(79.6%) reported that they nursed patients with infectious disease sometimes. 110(40.7%) of the respondents reported that they rarely have



been exposed to contact with micro-organisms from specimen within the work place. Majority of the respondents 132(48.9%) reported that they rarely have been exposed to body fluids during patient care. 163(60.4%) of the respondents reported that they rarely have been exposed to being pricked by needle. Most of the respondents 161(59.6%) reported that they sometimes have been exposed to blood and blood products during patient care. Under chemical health risks, majority of the respondents 82(30.4%) reported that they sometimes have been exposed to toxic chemicals from sterilizing products. 189(70.0%) of the respondents reported that they sometimes have been exposed to toxic chemicals from disinfectants. 214(79.3%) of the respondents reported that they sometimes have been exposed to toxic chemicals used in treating patients. 109(40.4%) of the respondents reported that they rarely have been exposed to risk of having chemical irritants. 135(50.0%) of the respondent reported that they sometimes have been exposed to risk of chemical burns. Under physical health risks, majority of the respondents 215(79.6%) reported that they sometimes have been exposed to heat and thermal discomfort within my work place. Majority of the respondents 110(40.7%) reported that they rarely have been exposed to radiation within my work place. 132(48.9%) reported that they rarely have been exposed to poor ventilation within my work place. Majority of the respondents 163(60.4%) reported that they rarely have been exposed to noise from equipment within my work place. Majority of the respondents 161(59.6%) reported that they rarely have been exposed to fall or slip in the course of rendering care. Under psychological health risks, majority of the respondents 82(30.4%) reported that they sometimes have had anxiety within my work place. Majority of the respondents 189(70.0%) reported that they sometimes have been exposed to stress within my work place. 214(79.3%) reported that they sometimes have felt isolated, fatigued, and angry due to a sense of depersonalization created by a large bureaucratic system. 109(40.4%) reported that they rarely have had risk of violence from patients. 135(50.0%) reported that they sometimes have felt tiredness due to long and intensive work hours in shifts. Under ergonomic health risks, majority of the respondents 82(30.4%) reported that they sometimes have been exposed to exhaustion in the course of rendering care. Majority of the respondents 189(70.0%) reported that they sometimes have been exposed to being assaulted by a patient during patient care. 214(79.3%) reported that they sometimes have been exposed to strain in the cause of rendering care. 109(40.4%) reported that they rarely have been exposed to stress from work load. 135(50.0%) reported that they rarely have been exposed to back injuries in the course of rendering care.

Research Question 3: What is the difference in health risk perception among nurses based on years of work experience?

Table 4.4 Summary of Model table on binary regression analysis on difference in the health risk perception among the nurses based on years of work experience

Variables	S.E.	P-Value	OR	95% C.I.	
				Lower	Upper
Years of work experience					
1 – 5(r)					
6 – 10	0.391	0.387	0.713	0.331	1.534



11 – 15	0.375	0.884	1.056	0.507	2.202
16 – above	0.463	0.343	0.645	0.260	1.597

Table 4.4 shown the binary logistic regression analysis of health risk perception among the nurses based on years of work experience. The result revealed that there was no statistical significance in health risk perception based on years of work experience. This means that there is no statistical significance that nurses' years of work experience is associated with having a high health risk perception ($P>0.05$).

Research Question 4: What is the difference in health risk perception among the nurses based on educational qualification?

Table 4.5 Summary of Model table on binary regression analysis on difference in the health risk perception among the nurses based on educational status.

Variables	S.E.	P-Value	OR	95% C.I. for EXP(B)	
				Lower	Upper
Educational Status					
RN (r)					
RN/RM	0.674	0.452	1.659	0.443	6.216
B.SCN	0.391	0.387	1.403	0.652	3.018

Table 4.5 showed the logistic regression analysis of health risk perception among the nurses based on educational status. The result revealed that there was no statistical significance in health risk perception based on educational status. This means that there is no statistical significance that nurses' educational status is associated with the likelihood of exhibiting a high level of health risk perception ($P>0.05$).



Research Question 5: What is the difference in health risk perception among nurses based on job posting?

Table 4.6. Summary of Model table on binary regression analysis on difference in the health risk perception among the nurses based on job posting.

Variables	S.E.	P-Value	OR	95% C.I. for EXP(B)	
				Lower	Upper
Job posting					
Wards (r)					
Theatre	0.414	0.279	1.565	0.695	3.520
OPD	0.486	0.488	1.401	0.540	3.632
Casualty	0.577	0.008	4.606	1.487	14.265

Table 4.6 showed the logistic regression analysis of health risk perception among the nurses based on job posting. The result revealed that respondents in the casualty unit were significantly more likely to exhibit high level of health risk perception ($P < 0.05$). The odds of respondents in the casualty unit to exhibit high level of health risk perception is 4.606 (95% CI= 1.487-14.265).

Research Question 7: What is the difference in health risk exposure among nurses based on years of work experience?

Table 4.7. Summary of Model table on binary regression analysis on difference in the health risk exposure among the nurses based on years of work experience

Variables	S.E.	P-Value	OR	95% C.I. for EXP(B)	
				Lower	Upper
Years of work experience					
1 – 5(r)					
6 – 10	0.875	0.000	0.012	0.002	0.065
11 – 15	0.342	0.995	1.055	0.540	2.064
16 – above	0.339	0.998	1.597	0.823	3.101



Table 4.7 showed the logistic regression analysis of health risk exposure among the nurses based on years of work experience. The result revealed that respondents with work experience of 6-10 years were significantly more likely to exhibit high level of health risk exposure ($P < 0.01$). The odds of respondents with work experience of 6-10 years to exhibit high level of health risk exposure is 0.012 (95% CI= 0.002-0.065).

Research Question 8: What is the difference in health risk exposure among nurses based on educational qualification?

Table 4.8. Summary of Model table on binary regression analysis on difference in the health risk exposure among the nurses based on educational status

Variables	S.E.	P-Value	OR	95% C.I. for EXP(B)	
				Lower	Upper
Educational status					
RN (r)					
RN/RM	9.061	0.998	1.055	0.540	2.064
B.SCN	1.124	0.000	1.597	0.823	3.101

Table 4.8 showed the logistic regression analysis of health risk exposure among the nurses based on educational. The result revealed that respondents with B. ScN were significantly more likely to exhibit high level of health risk exposure ($P < 0.01$). The odds of respondents with B. ScN to exhibit high level of health risk exposure is 1.597 (95% CI= 0.823-3.101).

Research Question 10: What is the difference in health risk exposure among nurses based on job posting?

Table 4.9 Summary of Model table on binary regression analysis on difference in the health risk exposure among the nurses based on job posting.

Variables	S.E.	P-Value	OR	95% C.I. for EXP(B)	
				Lower	Upper
Job Posting					
Wards (r)					
Theatre	0.710	0.003	0.123	0.031	0.494



OPD	0.342	0.995	1.055	0.540	2.064
Casualty	0.677	0.000	0.050	0.013	0.187

Table 4.12 showed the logistic regression analysis of health risk perception among the nurses based on years of work experience. The result revealed that respondents in the theatre ($P < 0.01$) and casualty ($P < 0.05$) units were significantly more likely to exhibit high level of health risk exposure. The odds ratio revealed that respondents in theatre are 0.123 times likely to have high health risk exposure while respondents in the casualty unit are 0.050 times likely to exhibit high level of health risk exposure.

Test of Hypothesis

Hypothesis 1: There is no significant difference in health risk perception among nurses in healthcare facilities based on years of work experience.

Table 4.10 Chi Square analysis on difference in the health risk perception among the nurses based on years of work experience

variables	Frequency	Perceived risk		X^2	df	P-Value	Remark
		High	Low				
years of work experience				44.651	3	0.000	Reject Null Hypothesis
1 – 5	109	54	55				
6 – 10	54	27	27				
11 – 15	54	27	27				
16 – above	53	53	0				
Total	270	161	109				

Table 4.10 showed the difference in the health risk perception among the nurses based on years of work experience. The result revealed that there was a statistically significant difference in the health risk perception among the nurses based on years of work experience ($P < 0.05$, $X^2 = 44.651$).

Hypothesis 2: There is no significant difference in health risk perception among the nurses with respect to educational status

4.11 Chi Square analysis on difference in health risk perception among the nurses based on educational status.

Variables	Number	Perceived risk		X^2	df	P-Value	Cramer's V	Remark
		High	Low					
Educational status				21.074	2	0.000	0.279	Reject Null Hypothesis
RN	54	27	27					
RN/RM	27	27	0					
B.SCN	189	107	82					
Total	270	161	109					

Table 4.12 showed the difference in health risk perception among the nurses based on educational status. The result revealed that there was a statistically significant difference in the health risk perception among the nurses based on educational status as $p < 0.05$ ($N = 270$, $X^2 = 21.074$, $p = 0.00$). Cramer's V of 0.279 shows a weak significance.

Hypothesis 3: There is no significant difference in health risk perception among the nurses based on job posting

Table 4.12. Chi Square analysis on difference in health risk perception among the nurses with respect to job posting.

Variables	Number	Perceived risk		X^2	df	P-Value	Cramer's V	Remark
		High	Low					
Job posting				60.286	2	0.000	0.473	Reject Null Hypothesis
Wards	215	134	81					
OPD	27	27	0					
Casualty	28	0	28					
Total	270	161	109					



Table 4.12 showed the difference in health risk perception among the nurses with respect to job posting. The result revealed that there was a statistically significant difference in the health risk perception among the nurses with respect to job posting as $p < 0.05$ ($N = 270$, $X^2 = 60.286$, $p = 0.00$). Cramer's V of 0.473 shows a moderate significance.

Hypothesis 4: There is no significant difference in health risk exposure among the nurses based on years of work experience

Table 4.13. Chi Square analysis on difference in level of health risk exposure among the nurses based on years of work experience

variables	Number	Risk Exposure		X^2	df	P-Value	Cramer's V	Remark
		High	Low					
years of work experience				43.968	3	0.000	0.404	Reject Null Hypothesis
1 – 5	109	55	54					
6 – 10	54	27	27					
11 – 15	54	27	27					
16 – above	53	53	0					
Total	270	162	108					

Table 4.12 showed the difference in level of health risk exposure among the nurses based on years of work experience. The result revealed that there was a statistically significant difference in the health risk perception among the nurses with respect to years of work experience as $p < 0.05$ ($N = 270$, $X^2 = 43.968$, $p = 0.00$). Cramer's V of 0.404 shows a moderate significance.

Hypothesis 5: There is no significant difference in health risk exposure among the nurses with respect to educational status

Table 4.14. Chi Square analysis on difference in level of health risk exposure among the nurses with respect to educational status

variables	Number	Perceived risk		X^2	df	P-Value	Cramer's V	Remark
		High	Low					
educational status				109.286	2	0.000	0.636	Reject Null Hypothesis
RN	54	0	54					
RN/RM	27	27	0					



B.SCN	189	135	54
Total	270	162	108

Table 4.12 showed the difference in level of health risk exposure among the nurses with respect to educational status. The result revealed that there was a statistically significant difference in level of health risk exposure among the nurses with respect to educational status as $p < 0.05$ ($N = 270$, $X^2 = 109.286$, $p = 0.00$). Cramer's V of 0.636 shows a moderate significance.

Hypothesis 6: There is no significant difference in health risk exposure among the nurses based on job posting

Table 4.15. Chi Square analysis on difference in health risk exposure among the nurses based on job posting.

Variables	Number	Perceived risk		X^2	df	P-Value	Cramer's V	Remark
		High	Low					
educational status				59.65	2	0.000	0.47	Reject Null Hypothesis
Wards	215	134	81					
OPD	27	0	27					
Casualty	28	28	0					
Total	270	162	108					

Table 4.12 showed the difference in health risk exposure among the nurses based on job posting. The result revealed that there was a statistically significant difference in health risk exposure among the nurses based on job posting ($P < 0.05$, $X^2 = 59.65$). Cramer's V of 0.47 shows a moderate significance.

SUMMARY OF FINDINGS

The findings of the study are summarized below:

1. The results showed that overall, majority of the respondents had a high level of health risk perception (57.4%).
2. The results showed that majority of the respondents reported a high level of health risk exposure in the study (60.4%).
3. The results revealed that there was no statistical significance in health risk perception based on years of work experience. This means that there is no statistical significance that nurses' years of work experience is associated with having a high health risk perception ($P > 0.05$).



4. The results revealed that there was no statistical significance in health risk perception based on educational status. This means that there is no statistical significance that nurses' educational status is associated with the likelihood of exhibiting a high level of health risk perception ($P > 0.05$).
5. The results revealed that respondents in the casualty unit were significantly more likely to exhibit high level of health risk perception ($P < 0.05$). The odds of respondents in the casualty unit to exhibit high level of health risk perception is 4.606 (95% CI= 1.487-14.265).
6. The results revealed that respondents with work experience of 6-10 years were significantly more likely to exhibit high level of health risk exposure ($P < 0.01$). The odds of respondents with work experience of 6-10 years to exhibit high level of health risk exposure is 0.012 (95% CI= 0.002-0.065).
7. The result revealed that respondents with B. ScN were significantly more likely to exhibit high level of health risk exposure ($P < 0.01$). The odds of respondents with B. ScN to exhibit high level of health risk exposure is 1.597 (95% CI= 0.823-3.101).
8. The result revealed that respondents in the theatre ($P < 0.01$) and casualty ($P < 0.05$) units were significantly more likely to exhibit high level of health risk exposure. The odds ratio revealed that respondents in theatre are 0.123 times likely to have high health risk exposure while respondents in the casualty unit are 0.050 times likely to exhibit high level of health risk exposure.

CONCLUSION

Based on the findings of the study, it was concluded that there is high level of health risk perception and exposure among nurses in healthcare facilities of central senatorial areas in Bayelsa State. This is to say that nurses are aware of the health risks they can be exposed to in the course of carrying out their duties, hence the need to encourage them to ensure adherence to safety and protection measures to reduce health risks exposures.

RECOMMENDATIONS

The following recommendations were given for actions based on the findings of the study:

1. Hospital managements of various health care facilities are encouraged to provide adequate and complete PPE, to encourage safety practices and reduce occupational health risks.
2. Hospital management should implement and strengthen appropriate and consistent use of all required personal protective equipment during any procedure, and patient care to reduce exposure
3. Quarterly training on IPC should be organized for nurses by the hospital management with emphasis on reducing health risk exposure.



4. Strategic positioning of Information, Communication and Educational materials (ICEs) at strategic locations in the various health facilities to serve as reminders to nurses on what safety measures to be adhered to in the course of discharging responsibilities.

Contribution to Knowledge: This study provides comprehensive information on health risk perception and exposure among nurses in central senatorial areas of Bayelsa State, offering insights for interventions aimed at reducing exposure. It also highlights the influence of work experience, educational status, and job posting on perception and exposure.

Suggestions for further Studies: Suggestions were made for further studies as follows:

1. Further studies should be conducted to replicate the present study with a wider coverage, precisely, covering the whole of Bayelsa State.
2. Future researchers should explore psychological impact of health risk perception and exposure among nurses in Bayelsa State.

REFERENCES

- Abuduxike, G., Vaizoglu, S. A., Asut, O., & Cali, S. (2021). An assessment of the knowledge, attitude, and practice toward standard precautions among health workers from a hospital in Northern Cyprus. *Safety and health at work*, 12(1), 66-73.
- Ahmed, S. A., & Shareef, O. H. (2019). Assessment of Occupational Health and Safety Measures' Knowledge and Experienced Types of Hazards among Nursing Staff in Rania Hospital. *Erbil Journal of Nursing and Midwifery*, 2(2), 85-92.
- Denge, T., & Rakhudu, M. (2022). Perceptions of nurses on occupational health hazards and safety practices in Ditsobotla public hospitals in North West province. *curationis*, 45(1), 1-9.
- Dovjak, M., & Kukec, A. (2019). Identification of health risk factors and their parameters. In *Creating Healthy and Sustainable Buildings* (pp. 83-120). Springer, Cham. https://doi.org/10.1007/978-3-030-19412-3_3
- Dovjak, M., Kukec, A., Dovjak, M., & Kukec, A. (2019). Identification of health risk factors and their parameters. *Creating Healthy and Sustainable Buildings: An Assessment of Health Risk Factors*, 83-120.
- Ezati Rad, R., Mohseni, S., Kamalzadeh Takhti, H., Hassani Azad, M., Shahabi, N., Aghamolaei, T., & Norozian, F. (2021). Application of the protection motivation theory for predicting COVID-19 preventive behaviors in Hormozgan, Iran: a cross-sectional study. *BMC Public Health*, 21(1), 1-11.
- Gebremariyam, B. S. (2019). Determinants of occupational exposure to blood and body fluids, healthcare workers' risk perceptions and standard precautionary practices: A hospital-based study in Addis Ababa, Ethiopia. *Ethiopian Journal of Health Development*, 33(1), 4-11.
- Grazioli, V. S., Tzartzas, K., Blaser, J., Graells, M., Schmutz, E., Petitgenet, I., & Bodenmann, P. (2022). Risk Perception Related to COVID-19 and Future Affective Responses Among Healthcare Workers in Switzerland: A Mixed-Methods Longitudinal Study. *International journal of public health*, 67(201), 1-9.



- Hamid, A. A. E. M. A. E., Fekry, N., & Etway, E. A. E. (2022). Effect of ergonomics training program on nurses' knowledge and safety practice. *International Journal of Health Sciences*, 6(S6), 5992–6006. <https://doi.org/10.53730/ijhs.v6nS6.11195>
- Kassaw, A., Demisse, B. (2021). Occupational Exposure to Blood and Body Fluids among Health Care Workers at Hospitals of Aksum Town, Tigray, Ethiopia: A Cross-Sectional Study. *Int Arch Nurs Health Care*, 7:166. doi.org/10.23937/2469-5823/1510166
- Ogunnaike, S. M., & Akinwaare, M. O. (2020). Occupational hazard preventive measures among nurses in a Nigerian tertiary health institution. *Nurse Care Open Access J*, 7, 20-5.
- Quinteiro, J. I. E., Aguilar, A. E., & Lamadrid, M. D. P. G. (2021). A nursing approach to the concept of risk. *Revista Cubana de Enfermería*, 37(2), 1-18.
- Ramadan, E. N., Mahfouz, H. H., & Taha, A. S. (2018). Safety Measures Program for Prevention of Occupational Hazards among New Graduate Bachelor Nurses. *IOSR Journal of Nursing and Health Science (IOSR-JNHS)*, 7(4), 98-111.
- Schmalzle, R., Renner, B., & Schupp, H. T. (2017). Perception and risk communication. *Policy Insights from the Behavioral and Brain Sciences*, 4(2), 163-169.
- Yesilgul, G., Cicek, H., Avci, M., & Huseyniklioglu, B. (2018). Nurses' knowledge levels and perceptions regarding occupational risks and hazards. *International Journal of caring sciences*, 11(2), 1117-1124.