

Safety Practices of Healthcare Workers in Teaching Hospitals in Rivers State

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DOI: <https://doi.org/10.5281/zenodo.18663745>

Article History	Abstract
Original Research Article	<p><i>This study investigated the perceived occupational safety practices of healthcare workers in teaching hospitals, Rivers State. A cross sectional research design was adopted with a population consisting of 3,673 healthcare workers in teaching health facilities in Rivers State. The sample size of 792 was selected using simple random sampling technique. Data was collected using structured questionnaire with a reliability coefficient of 0.78 and analysis carried out using mean and One-Way Analysis of variance (ANOVA) at 0.05 alpha level. The result further showed that the extent of occupational safety practice was high (3.43±0.55). Also, statistically significant difference was found between occupational safety practice and variables such as job specification [$F(7, 739) = 126.46; p < 0.05$], and years of work experience [$F(2, 746) = 12.79; p < 0.05$]. Based on the findings of the study, it was concluded that, healthcare workers practiced safety measures to a high extent, but occupational health problems are still high which suggests that the health problems are inherent in the job hence, the healthcare workers must prioritize and intensify safety practice when discharging their duty. The ministry of health should constitute a safety team or committee whose duty will be to constantly organize training for the healthcare worker on work safety and also to visit such facilities for safety inspection from time to time.</i></p> <p>Keywords: Healthcare, Practices, Safety, Workers, Hospital.</p>
Received: 01-09-2025	
Accepted: 08-11-2025	
Published: 31-12-2025	
<p>Copyright © 2025 The Author(s): This is an open-access article distributed under the terms of the Creative Commons Attribution 4.0 International License (CC BY-NC) which permits unrestricted use, distribution, and reproduction in any medium for non-commercial use provided the original author and source are credited.</p> <p>Citation: Bright-Onuchuku, P.O. (Ph.D), Amadi, P.F. (Ph.D). (2025). Safety Practices of Healthcare Workers in Teaching Hospitals in Rivers State. UKR Journal of Medicine and Medical Research (UKRJMMR), Volume 1(4), 72-79.</p>	

Introduction

There are numerous safety practices among healthcare workers in teaching hospitals and adherence to these safety practices is vital for maintaining a secure healthcare environment. Hand hygiene is a fundamental safety practice in healthcare settings, crucial for preventing the transmission of infectious agents and safeguarding both healthcare workers and patients. Proper hand hygiene practices are particularly critical in teaching hospitals, where patients with complex medical conditions are treated, and the potential for the spread of infections is higher (CDC, 2021). Another safety measure is the use of PPE. The specific PPE requirements vary depending on the nature of patient care activities and the level of anticipated exposure to infectious materials. However, challenges in PPE availability, supply chain issues, and the need for continuous education to ensure proper usage have been highlighted during public health emergencies. The effective use of PPE not only protects healthcare workers but also

contributes to the overall resilience of the healthcare system in managing and preventing the spread of infectious diseases (Hines et al., 2020). Safety practices must be taken seriously if the health and the well-being of the workers must be maintained.

The relationship between safety practices and mental health problems among healthcare workers in teaching hospitals is a complex interplay influenced by various factors. Adherence to safety practices is crucial for protecting the physical well-being of healthcare professionals, but the demands of stringent safety protocols, especially in high-stress environments like teaching hospitals, can contribute to mental health challenges. Long working hours, the need for constant vigilance, and the fear of making errors can result in heightened stress levels (Gillespie et al., 2012). However, there is a reciprocal relationship between safety practices and mental health, where the promotion of a

positive work environment and supportive safety measures can enhance the overall well-being of healthcare workers.

The relationship between safety practices and physical health problems among healthcare workers in teaching hospitals is a critical area of concern given the demanding and high-risk nature of their work. Adherence to safety protocols protect workers from occupational hazards, but the implementation of rigorous safety measures can itself pose physical challenges. For example, the consistent use of personal protective equipment (PPE), such as masks, goggles, and gowns, can lead to discomfort, heat stress, and skin-related issues (Cucinotta & Vanelli, 2020). Extended periods of wearing PPE during long shifts may contribute to musculoskeletal strain, as healthcare workers may adopt awkward postures or experience physical fatigue. Thus, the relationship between safety practices and physical health problems is complex, requiring a balance between protective measures and mitigating potential adverse effects on the well-being of healthcare workers (He et al., 2020). The ergonomic design of work environments and equipment is crucial in mitigating physical health issues associated with safety practices.

The implementation of safety practices in teaching hospitals can influence social health by shaping the perception of fairness and equity among healthcare workers. The fairness of safety-related policies and procedures, as perceived by healthcare professionals, can impact their sense of justice and organizational commitment. A study by DeJoy (2005) highlights the importance of perceived organizational support and fairness in promoting positive social outcomes, including job satisfaction and cooperation among colleagues. In teaching hospitals, where safety practices may be particularly stringent due to the nature of patient care, maintaining a sense of fairness in the enforcement of safety measures becomes crucial to preserving social health. The relationship between safety practices and social health problems among healthcare workers in teaching hospitals involves a complex interplay of organizational culture, work environment, and interpersonal dynamics. Safety practices, while crucial for protecting physical well-being, can impact the social health of healthcare workers by influencing teamwork, communication, and job satisfaction.

Health workers are all paid and unpaid individuals working in the healthcare settings who have the potential of being exposed to patients directly or indirectly and their infectious materials. They are the soldiers at the war front of the fight against any infection or disease affecting humans all over the world (WHO, 2021). One of the cardinal principles of hospitals and healthcare is that it should cause no harm to the patient or to the healthcare

worker. However, for many healthcare workers in the spotlight of the emerging and re-emerging illness, the outcome is different. Health workers are at risk of stress due to the overburdened healthcare system (Itodo et al., 2020).

Statement of the Problem

Healthcare workers in the teaching hospitals handle complex and highly contagious illness which could predispose them to several healthcare problems if adequate safety precaution is not taken. Such cases may place them at greater risk of contracting nosocomial infections and developing occupational health problems due to long working hours, unpredictable nature of patient interactions, stress, and assisting or carrying patients from one point to the other. Such activities could expose them to physical, social and mental health problems. In Rivers State, there are only three functional teaching hospitals serving the whole State. This overburdens the healthcare workers who are disproportionately assigned to patients. The demanding and emotionally taxing nature of their responsibilities, coupled with long working hours, can contribute to high levels of stress and burnout. Burnout not only jeopardizes the mental well-being of healthcare workers but also has implications for patient care, as exhausted and emotionally drained professionals may be less effective in their roles, impacting overall healthcare delivery.

Healthcare workers in teaching hospitals could have heightened risk of occupational violence and harassment due to the life threatening nature of some cases they handle. Occupational violence not only poses a direct threat to the physical safety of healthcare workers but could also have a lasting implication for their social well-being and absenteeism. Thus, this study focused on safety practices among healthcare workers in teaching hospitals, Rivers State.

1. What are the occupational safety practices?
2. What are the occupational safety practice based on job specification?
3. What are the occupational safety practice based on years of work experience?

Methodology

This study adopted the cross sectional study design. The study population comprised of 3,673 healthcare workers in teaching hospitals in Rivers State. The sample size for the study was 792 which was determined using Taro Yemen formula; $n = N / 1+N(e)^2$. The simple random sampling technique was adopted. The instrument for data collection was a structured questionnaire developed by the researcher titled: "Safety Practice Questionnaire (SPQ)". The instrument consisted of three sections A and B. Section A focused on the demographic data of respondents such as gender, age, department, years of work experience and

marital status; and Section B focused on the occupational safety practices among the respondents on a modified four point Likert scale of very high extent, high extent, low extent and very low extent.

The reliability co-efficient of the instrument was 0.78. Data was collected by delivering the questionnaires to the respondents. The aim of the study and methods to be adopted were clearly explained to the respondents before the administration of the instrument. Questions asked about

the study were answered. The researcher sought the consent of the respondents before delivering the questionnaire which were retrieved at a spot immediately after completion of the filling. Data was analyzed with the aid of the Statistical Package for Social Sciences (SPSS) version 25.0, using some statistical tools such as mean, standard deviation, and ANOVA at 0.05 level of significance.

Results

The results of the study are shown below:

Table 1: Mean and standard deviation showing occupational safety practice

SN	Occupational safety practice	\bar{X}	SD(\pm)	Remark
1	Wears hand glove when attending to patients	3.51	0.50	Very high extent
2	Washing of hands before and after touching a patient	3.29	0.45	High extent
3	Washing of hands before and after any procedure	3.59	0.49	Very High extent
4	Wearing of hand glove when touching body fluids, secretions, excretions or mucous	3.52	0.65	Very high extent
5	Preventing needle stick injury by handling it carefully	3.56	0.68	Very high extent
6	Disposed used needles and other sharp instrument properly	3.54	0.65	Very high extent
7	Covers nose and mouth when coughing/sneezing with tissue or mask	3.46	0.50	High extent
8	Use of disinfectants to clean surfaces before use	3.28	0.45	High extent
9	Ensures safe waste management	3.30	0.62	High extent
10	Discard single use items properly	3.12	0.50	High extent
11	Handles equipment soiled with blood and other body fluids in a manner that prevents skin or mucous membrane exposure	3.43	0.65	High extent
12	Cleans, disinfects and reprocess reusable equipment appropriately before use with another patient	3.48	0.50	High extent
13	Wears face or nose mask when attending to patients	3.54	0.54	Very high extent
	Grand mean	3.43	0.55	High extent

Criterion mean = 2.50. Guide: 0 - 1.49 = Very low extent (VLE); 1.50 - 2.49 = low extent (LE); 2.50 – 3.49 = high extent (HE); 3.50 – 4.00 = very high extent (VHE)

Table 1 presents the mean and standard deviation on occupational safety practice among healthcare workers in teaching hospitals. The result showed that the extent to which healthcare workers were practices occupational safety was high as the grand mean of 3.43 ± 0.55 was higher than the criterion mean of 2.50. Specifically, the result showed that, to a very high extent, respondents wash hands before and after any procedure (3.59 ± 0.49), prevent needle stick injury by handling it carefully (3.56 ± 0.68), disposed used needles and other sharp instrument properly (3.54 ± 0.65), and wears face or nose mask when attending to patients (3.54 ± 0.55). Thus, the extent of occupational safety practice among healthcare workers in tertiary health institution in Rivers State was high.

Table 2: Mean and standard deviation showing job specification and occupational safety practice (N=747)

Safety practice	O&G (N=63)		Emerg. (N=364)		Burns (N=16)		Children (N=32)		Internal (N=18)		Surgery (N=122)		ENT (N=16)		ICU (N=116)	
	\bar{X}	SD	\bar{X}	SD	\bar{X}	SD	\bar{X}	SD	\bar{X}	SD	\bar{X}	SD	\bar{X}	SD	\bar{X}	SD
Wears hand glove	3.47	0.32	3.40	0.95	3.20	0.84	2.90	1.05	3.60	1.22	3.41	0.91	1.90	0.00	3.15	0.71
Washing of hands touching a patient	3.25	0.48	2.75	0.90	3.40	0.77	2.60	1.30	3.50	0.48	3.54	0.49	3.32	0.00	3.75	0.61
Washing of hands any procedure	3.88	0.32	3.40	0.95	3.67	0.84	2.41	1.05	3.21	1.22	3.08	0.91	4.00	0.00	3.88	0.32
Wearing of hand glove touching fluids	3.64	0.48	3.37	0.90	3.57	0.77	2.71	1.300	3.65	0.48	3.56	0.49	3.66	0.48	3.64	0.48
Preventing needle stick injury	3.61	0.49	3.27	0.81	3.43	0.84	2.84	0.65	3.00	1.02	3.13	0.77	3.33	0.96	3.61	0.49
Disposed used needles	3.62	0.48	2.95	1.10	3.32	0.86	2.41	1.05	3.13	0.68	3.19	0.56	3.33	0.96	3.62	0.48
Covers nose and mouth	3.64	0.69	3.18	0.92	3.07	0.90	2.84	1.4	3.00	1.02	2.94	0.73	3.33	0.96	3.64	0.69
Use of disinfectants	3.52	0.70	3.48	0.72	3.20	0.65	4.00	.00	2.96	0.55	3.13	0.74	3.33	0.96	3.52	0.70
Ensures safe waste mgt	3.13	0.79	3.25	0.95	3.16	0.80	3.69	0.46	3.69	0.46	3.07	.00	3.00	1.44	3.13	0.79
Discard single use items	3.26	0.66	3.49	0.93	3.25	0.83	3.69	0.46	3.48	0.50	3.12	0.85	3.00	1.44	3.26	0.66
Handles equipment soiled	3.00	0.71	3.30	0.95	3.29	0.73	3.38	0.74	3.48	0.77	3.05	0.80	3.00	0.00	3.00	0.71
Cleans, disinfects	2.89	1.06	3.60	0.78	3.37	0.64	3.38	0.74	3.86	0.34	3.56	0.76	3.00	0.00	2.89	1.06
Wears face or nose mask	3.42	.64	3.33	.90	3.33	.79	3.14	.79	3.35	.70	3.18	.66	3.50	.72	3.42	.64
Wears hand glove	3.88	0.32	3.40	0.95	3.67	0.84	2.41	1.05	3.21	1.22	3.08	0.91	4.00	0.00	3.88	0.32
Grand mean	3.44	0.58	3.29	0.91	3.35	0.79	3.03	0.86	3.36	0.76	3.22	0.68	3.41	0.56	3.45	0.61

Table 2 presents the mean and standard deviation showing job specification and occupational safety practice. The result showed that, based on job specification, all categories of job specification had high extent values which were greater than the criterion mean of 2.50. However, high extent of exposure to occupational health problems was found more among those who were in intensive care unit (3.45±0.61), followed by those in the O & G (3.44±0.58), ENT (3.41±0.56), and those in internal medicine (3.39±0.43). Thus, based on job specification, occupational safety practice was more among those in intensive care unit, O&G, ENT and those in internal medicine.

Table 3: Mean and standard deviation showing years of work experience and safety practices based on job specification (N=747)

Safety practice	<5yrs (N=469)		5-10yrs (N=177)		>10yrs (N=101)	
	\bar{X}	SD	\bar{X}	SD	\bar{X}	SD
	Wears hand glove	3.36	0.94	3.61	0.94	3.62
Washing of hands touching a patient	3.13	0.71	3.28	0.82	3.88	0.70
Washing of hands any procedure	3.49	0.81	3.62	0.85	3.40	0.93
Wearing of hand glove touching fluids	3.44	0.96	3.46	0.93	3.70	0.46
Preventing needle stick injury	3.43	0.93	3.62	0.93	3.66	0.48
Disposed used needles	3.54	0.74	3.25	0.68	3.66	0.48
Covers nose and mouth	3.42	0.94	3.25	0.81	3.37	0.49
Use of disinfectants	3.35	1.02	3.16	0.91	3.07	0.82
Ensures safe waste mgt	3.17	0.82	3.24	0.82	0.82	3.07
Discard single use items	3.27	0.76	3.53	0.82	3.37	0.49
Handles equipment soiled	3.40	.86	3.16	.85	3.28	.77
Cleans, disinfects	3.64	0.94	3.64	0.94	3.70	0.46
Wears face or nose mask	3.45	0.71	3.37	0.82	4.00	0.00
Wears hand glove	3.12	0.81	3.27	0.85	3.40	0.93
Grand mean	3.37	0.85	3.39	0.86	3.35	0.75

Table 3 presents the mean and standard deviation showing years of work experience and occupational safety practice. The result showed that, all categories in years of experience had high extent values which were greater than the criterion mean of 2.50. However, high extent of safety practice was found more among those who had worked for 5-10 years (3.39±0.86), followed by those who worked for <5 years (3.37±0.85), and those in internal medicine (3.39±0.43). Thus, based on years of work experience, occupational safety practice was more among those having fewer years of work experience.

Table 4: Analysis of Variance (ANOVA) showing significant difference between job specification and occupational safety practices

Sources of variance	Sum of squares	df	Mean sum of squares	F-value	p-value	Decision
Between group	424.52	7	60.64	126.46	0.00*	H ₀
Within group	354.37	739	0.48			Rejected
Total	778.89	746				

*Significant. p<0.05

Table 4 shows the One-Way ANOVA of significant difference between job specification and occupational safety practice. The findings of this study shows that there is a statistically significant difference between job specification and occupational safety practice among healthcare workers [F(7, 739) = 126.46; p<0.05]. The post hoc test of multiple comparison shows that safety practice was significant in all category of job specification. Therefore, the null hypothesis which stated that there is no significant difference between job specification and occupational safety practice among healthcare workers in tertiary health institution in Rivers State was rejected.

Table 5: Analysis of Variance (ANOVA) showing significant difference between years of work experience and occupational safety practice

Sources of variance	Sum of squares	df	Mean sum of squares	F-value	p-value	Decision
Between group	25.89	2	12.94	12.79	0.00*	H ₀
Within group	753.00	744	1.01			Rejected
Total	778.89	746				

*Significant. $p < 0.05$

Table 5 shows the One-Way ANOVA of significant difference between years of work experience and occupational safety practice. The findings of this study shows that there is a statistically significant difference between years of work experience and occupational safety practice among healthcare workers [$F(2, 746) = 12.79$; $p < 0.05$]. The post hoc test of multiple comparism shows that occupational safety practice was significant in all category of years of work experience. Therefore, the null hypothesis which stated that there is no significant difference between years of work experience and occupational safety practice among healthcare workers in tertiary health institution in Rivers State was rejected.

Discussion of Findings

The finding of the study in Table 1 revealed that the extent of occupational safety practice among healthcare workers in tertiary health institution in Rivers State was high. The result further showed that, to a very high extent, respondents wash hands before and after any procedure, prevent needle stick injury by handling it carefully, disposed used needles and other sharp instrument properly, and wears face or nose mask when attending to patients. This finding is encouraging but worrisome that despite the high extent of practice, there was still high extent of exposure to occupational health problems among the healthcare workers. This suggests that the health problems are inherent in the job. This necessitates the need to heightened effort to boost safety practices among the healthcare workers in the teaching hospitals in Rivers State. The result corroborates Ndejjo et al. (2015) who reported from a study carried out in Uganda that healthcare workers practiced safety measures to protect themselves against occupational health problems. The major control measures provided by the health facilities were availing separate areas and containers to dispose medical waste and safety tools and equipment. Regarding the hand washing practices, most healthcare workers washed their hands before and after every procedure and after handling soiled materials. The result is in line with that of Nwankwo et al. (2017) who carried out an assessment of the compliance to occupational health and safety measures among the healthcare workers in three selected districts health

facilities that more healthcare workers adhered to careful handling and disposing of sharp instruments during and after procedures also practice of immediate washing of hands and other skin surfaces after contact with blood. The similarity found between the previous studies and the present one might be due to the fact that they were all focused on the safety practice among healthcare workers.

The result of this study is in tandem with Siegel (2007) who specified in a study that, in order to control healthcare problems in the health care setting, standard precautions must be taken. These include safe injection practices, hand hygiene, use of PPE, safe handling of potentially contaminated equipment or surfaces, and respiratory hygiene (cough etiquette). The researcher also notes that since most of the hazards such as bacteria and viruses are transmitted through blood and body fluids contact, blood and body fluids from all patients must be treated as if they were infectious, whether or not an infection has been confirmed with a very high degree of chariness. Remarkably, Hryhorczuk (2004) noted that, for all types of healthcare facilities, the general task of the healthcare workers involved daily contact with patients, permanent contact with procedures and chemicals which exposes them to several occupational diseases and injuries hence, their exposure to theses hazards must be controlled if their health is to be maintained and their job completed. However, hazards are inevitable in any occupation hence, safety measures must be adequately practiced if health must be maintained.

the result indicated that high extent of exposure to occupational health problems was found more among those who were in intensive care unit (3.45 ± 0.61), followed by those in the O & G (3.44 ± 0.58), ENT (3.41 ± 0.56), and those in internal medicine (3.39 ± 0.43). There was a significant difference between job specification and safety practice ($p < 0.05$). This finding signifies that occupational safety consciousness is in the healthcare workers in every department and unit because they all face or have contact with patients who come down with different forms of diseases which could impede their health if safety precautions or practices are not adequately observed. The finding of this study corroborates that of Nwokeoma et al.

(2019) whose study among Nigerian public workers which showed that respondents adopted occupational safety measures irrespective of the job posting, unit or department they were working from in the hospital. The similarity between the present study and that of Nwokeoma and colleagues could be due to the homogeneity of the study population, as both studies focused on healthcare workers whose major contact is with patients with different diseases and infections hence, adequate safety practice.

The result indicted that high extent of safety practice was found more among those who had worked for 5-10 years, followed by those who worked for <5 years, and those in internal medicine. There was a significant difference between years of work experience and safety practice ($p < 0.05$). The finding of this study is akin to that of Onowhakpor (2018) whose study among health care workers in Ghana found that the safety practice is high for all healthcare workers but are more for the those with higher years of work experience and there was a statistically significant difference between years of work experience and safety practice. The finding of this study gives credence to that of Segal et al. (2016) who found that safety practice is high for all healthcare workers but are more for the those with higher years of work experience and there was a statistically significant difference between years of work experience and safety practice. This similarity found between the previous studies and the present one could be attributed to the homogeneity of the study populations as the both studies were carried out among healthcare workers.

Conclusion

Based on the findings of the study, healthcare workers practiced safety measures to a high extent, but occupational health problems are still high which suggests that the health problems are inherent in the job hence, the healthcare workers must prioritize and intensify safety practice when discharging their duty.

Recommendations

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

1. The ministry of health should constitute a safety team or committee whose duty will be to constantly organize training for the healthcare worker on work safety and also to visit such facilities for safety inspection from time to time.
2. The government should show more concern in safety of the healthcare workers by implementing policies that will protect the safety of healthcare workers from every occupational health problem.
3. The healthcare workers should also not relent in their effort to maintain good preventive practices

by observing them in every procedure no matter the urgency of the situation.

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