

Compliance with Safety Precautions among Healthcare Workers in Rivers State

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DOI: 10.56201/ijmepr.v7.no4.2023.pg54.61

ABSTRACT

This study investigated the compliance with safety precautions among healthcare workers in Rivers State. The study adopted the descriptive cross sectional research design. The population of the study comprised of health care workers in Rivers State, the sample size for this study was 422 derived using Cochran formula and data gotten using a multistage sampling technique with two stages. The instrument for data collection was a structured questionnaire titled “Questionnaire on knowledge of safety precautions among healthcare workers”. The data collected from this study were collated and analyzed with the Statistical Products for Service Solution (SPSS) using the descriptive statistics of frequency, simple percentages, mean, standard deviation for answering research questions, and regression model was used to test the null hypotheses at 0.05 level of significance. The result showed good compliance with safety precautions among healthcare workers (1.68 ± 0.97). The result also revealed a significant relationship between demographic variables (job category [$f(7,402) = 9.817, p < 0.05$] and years of working experience [$f(3,406) = 16.012, p < 0.05$]) and compliance with safety precautions among Healthcare Workers in Rivers State. It was concluded that there was good compliance with safety precautions among healthcare workers in Rivers State. It was recommended amongst others that the Ministry of Health and other health agencies should to create thorough safety handbooks or guides that offer detailed instructions on safety protocols and guidelines for healthcare personnel.

Introduction

Compliance with safety precautions and protocols is crucial among healthcare workers to ensure the safety of both themselves and their patients. This issue gains even more importance due to the ongoing COVID-19 pandemic, where healthcare workers have been at the forefront of the response. It is important to understand the various factors that contribute to compliance with safety precautions and protocols among healthcare workers. A study by Korkmaz and colleagues (2015) found that healthcare workers who had a higher level of knowledge regarding infection control measures were more likely to comply with safety protocols. This highlights the need for effective training and education programs to enhance healthcare workers' understanding of safety measures.

A study conducted by Gershon and colleagues (2013) identified that healthcare workers who perceived their organization to have a strong commitment to safety were more likely to comply with safety precautions. This emphasizes the importance of creating a culture of safety within

healthcare organizations through clear policies, supportive management, and adequate resources. Individual factors also could contribute to compliance with safety precautions. Hence, the belief in the efficacy of safety measures have been associated with higher compliance levels among healthcare workers (Husnu & Bellik, 2020; Lasseigne et al., 2015). These findings suggest that understanding the individual characteristics of healthcare workers can help tailor interventions to improve compliance.

A study by Lee and Cummings (2008) highlighted that healthcare workers were more likely to comply with safety guidelines when they perceived their supervisors as supportive and engaged in safety practices themselves. Hence, addressing compliance with safety precautions and protocols among healthcare workers is of utmost importance due to the potential consequences of noncompliance. Noncompliance can result in healthcare-associated infections (HAIs) for both patients and healthcare workers themselves. HAIs can lead to increased morbidity and mortality rates, prolonged hospital stays, and elevated healthcare costs (Allegranzi et al., 2011). Therefore, adherence to safety precautions and protocols has been shown to significantly reduce the risk of HAIs, as evidenced in a study by Rosenthal et al. (2013), which demonstrated a correlation between increased compliance and decreased HAIs.

Hence, compliance with safety precautions and protocols among healthcare workers is a critical issue that must be addressed. Knowledge, awareness, organizational factors, individual traits, and leadership all influence compliance. Ensuring compliance is imperative to protect the well-being of healthcare workers and patients. By providing effective training programs, fostering a culture of safety, and implementing supportive supervision, healthcare organizations can promote compliance and mitigate the risks associated with noncompliance.

Aim of the Study

The study aims to investigate the compliance with safety precautions among healthcare workers in Rivers State.

RESEARCH METHODS

The design of the study was a descriptive cross-sectional research design. The study area was Healthcare Facilities in Rivers State. The population of the study consisted of healthcare workers in Rivers State. The sample size of 422 was calculated using the Cochran formula. A two-stage sampling technique was employed for the study. The instrument for data collection was a structured questionnaire titled 'Questionnaire on compliance with safety precautions among healthcare workers'. Data collected were coded using statistical package for social sciences (SPSS) and analysed using the descriptive statistics of frequency percentages (%), Mean, Standard Deviation and regression for analysis of research questions. However, inferential statistics of regression was used to test the null hypotheses for 1 and 2 at 0.05 alpha level. Permission was sought and obtained from the healthcare facilities. A written informed consent was obtained from the directors of various healthcare facilities to be studied while oral consent was obtained from the participating healthcare workers before the commencement of the study. During the informed consent process, participants were assured of their privacy that data collected for this study will be used only for the study. There was no anticipated risk to the participant for participating in the study. There was no direct benefit to the study participant except that they will contribute to the findings of compliance with safety precautions among healthcare workers for the target group, which will in turn influence policy formulation and

interventions. Ethical clearance was obtained from the Research and Ethics committee of the Highstone Global University.

RESULTS

Research question 1: What is the extent of compliance with Safety Precautions among Healthcare Workers in Rivers State?

Table 1: Extent of Compliance with Safety Precautions

S/N	Items	Mean	Std. Deviation
1	I wash hands before and after body fluid exposure	2.19	1.32
2	I wash hands before and after touching a patient	2.31	1.36
3	I wash hands immediately after removal of gloves	1.63	0.94
4	I wash hands between patient contact	2.27	1.16
5	I protect myself against body fluids of all patients regardless of their diagnosis	1.33	0.73
6	I wear clean gloves whenever there is a possibility of exposure to anybody fluids	1.55	1.03
7	I change gloves between contacts with different patients	1.96	1.23
8	I wear a waterproof apron whenever there is a possibility of body fluid splashing in my body	1.65	1.08
9	I wear eye goggles whenever there is a possibility of body fluid splashing in my face	1.94	1.17
10	I sterilize all reusable equipment before being used on another patient	1.02	0.16
11	I clean and disinfect equipment and environmental surfaces	1.37	0.82
12	I segregate non-infectious wastes in black color-coded dust bin	1.48	0.87
13	I segregate infectious medical wastes in yellow colored-coded dust bin	1.55	0.94
14	I place used sharps in puncture-resistant container at the point of use	1.37	0.85
	Grand total	1.68	0.97

Criterion mean = 1.5. >1.5 is Good compliance; <1.5 is Poor compliance.

Table 1 shows the extent of compliance with Safety Precautions among Healthcare Workers. The result showed that the grand mean 1.68 is greater than the criterion mean of 1.5 indicating good compliance with safety precautions among healthcare workers with more respondents indicating that they wash hands before and after touching a patient (2.31±1.36).

Research question 2: What is the relationship between demographic variables (years of working experience and job category) and compliance with Safety Precautions among Healthcare Workers in Rivers State?

Table 2: Relationship between demographic variables (job category, and years of working experience) and compliance with Safety Precautions among Healthcare Workers in Rivers State

Variables	Knowledge of Safety precautions		Total Freq (%)
	Good Freq (%)	Poor Freq (%)	
Job category			
Doctors	48(94.1)	3(5.9)	51(100)
Nurses	62(58.5)	44(41.5)	106(100)
Pharmacists	15(100)	0(0.0)	15(100)
Radiographic lab technician	7(46.7)	8(53.3)	15(100)
hospital sanitary workers	35(76.1)	11(23.9)	46(100)
community health workers	33(76.7)	10(23.3)	43(100)
Others	25(45.5)	30(54.5)	55(100)
Total	48(60.8)	31(39.2)	79(100)
Years of service			
1-5 years	273(66.6)	137(33.4)	410(100)
6-10 years	87(53.7)	75(46.3)	162(100)
11-15 years	77(68.1)	36(31.9)	113(100)
16 years and above	79(84.9)	14(15.1)	93(100)
Total	30(71.4)	12(28.6)	42(100)
Total	273(66.6)	137(33.4)	410(100)

Table 2 revealed that 48(94.1%) of the respondents who were doctors, 62(58.5%) who were nurses, 15(100%) who were pharmacists, 7(46.7%) who were radiographers, 35(76.1%) who

were laboratory technicians, 33(76.7%) who were hospital sanitary workers, 25(45.5%) who were community health workers and 48(60.8%) others had good compliance of safety precautions. For years of service, 87(53.7%) who worked for 1-5 years, 77(68.1%) who worked for 6-10 years, 79(84.9%) who worked for 11-15 years and 30(71.4%) who worked for 16 years and above had good compliance of safety precautions.

Table 3: Regression analysis showing significant relationship between demographic variables (job category, and years of working experience) and compliance with Safety Precautions among Healthcare Workers in Rivers State

Model		Sum of Squares	Df	Mean Square	F	Sig.	Decision
1	Regression	13.066	7	1.867	9.817	.000	Rejected
	Residual	76.436	402	.190			
	Total	89.502	409				
1	Regression	9.469	3	3.156	16.012	.000	Rejected
	Residual	80.033	406	.197			
	Total	89.502	409				

***Significant, p<0.05**

The result in table 3 above revealed that there was a significant relationship between demographic variables (job category [$f(7,402) = 9.817, p<0.05$] and years of working experience [$f(3,406) = 16.012, p<0.05$]) and compliance with safety precautions among Healthcare Workers in Rivers State. Therefore, the null hypothesis which stated that there is no significant relationship between demographic variables (job category, and years of working experience) and compliance with safety precautions among Healthcare Workers in Rivers State was rejected.

DISCUSSION

Table 1 shows the extent of compliance with Safety Precautions among Healthcare Workers. The result showed that the grand mean 1.68 is greater than the criterion mean of 1.5 indicating good compliance with safety precautions among healthcare workers with more respondents indicating that they wash hands before and after touching a patient (2.31 ± 1.36). This result was expected since the health workers had good knowledge of safety precautions. The result of this study disagrees with that of Ather et al. (2020) where although majority of the healthcare workers had good knowledge regarding standard precautions but they had unsatisfactory compliance to prevent and control infection, also a literature review by Al-Mahdali (2015) showed a low rate of compliance and level of knowledge was the main outcome found and factors that lead to this low rate are identified and discussed through the literature. Ogoina et al. (2015) explained further that house officers, laboratory scientists, and junior cadres of nurses had lower knowledge and compliance with standard precautions than more experienced doctors and nurses. The study concluded that there was generally poor compliance with standard precautions of infection control among HCW in Nigeria. This difference may be

explained by factors such as type and leadership of the health facility, years of practice. However the study by Esu et al. (2019) showed majority of the respondents (76.2%) were compliant with SPs. Factors significantly affecting health care worker's compliance type of health facility ($p=0.022$) and years of practice ($p=0.044$), also Bekele et al. (2020) showed the overall compliance with standard safety precautions among healthcare workers was only 56.5%..

Table 2 revealed that 48(94.1%) of the respondents who were doctors, 62(58.5%) who were nurses, 15(100%) who were pharmacists, 7(46.7%) who were radiographers, 35(76.1%) who were laboratory technicians, 33(76.7%) who were hospital sanitary workers, 25(45.5%) who were community health workers and 48(60.8%) others had good compliance of safety precautions. For years of service, 87(53.7%) who worked for 1-5 years, 77(68.1%) who worked for 6-10 years, 79(84.9%) who worked for 11-15 years and 30(71.4%) who worked for 16 years and above had good compliance of safety precautions. Pharmacists, laboratory scientists and hospital sanitary workers with those who have worked for 11-15 years were most compliant with safety precautions. This may be explained by the constant exposure of these job categories to hazards like body fluids. This finding is in line with Arinze-Onyia et al. (2018) where exposure to patients' serum was significantly higher among doctors and nurses $P < 0.05$, while the use of personal protective equipment (PPE) was highest among the laboratory scientists (82.4%). Those who were trained on safety precautions (70.8%) and PPE (69.7%) were significantly more likely to use PPEs, $P < 0.05$. Also in support of this point Amoran and Onwube (2013) stated there was a statistically significant difference in the practice of standard precaution among those that were exposed to blood products and body fluid compared to those that had not been exposed in the last 6 months ($\chi(2) = 3.96$, $P = 0.03$), public healthcare providers when compared to private health workers ($\chi(2) = 22.32$, $P = 0.001$), among those working in secondary and tertiary facilities compared to primary healthcare centers ($\chi(2) = 14.64$, $P = 0.001$), For years of experience, contrary to our findings Beyamo et al. (2019) showed that service year less than or equal to 5 years, training on standard precaution, having good hand hygiene, and availability of personal protective equipment was independently associated with compliance to standard precaution practices. This may be explained by good training of the staff. In summary Ogbonda et al. (2020) showed a significant association between compliance with safety precautions and years of experience, and job categories in the hospitals ($p < 0.05$) and Esu et al. (2019) stated factors significantly affecting health care worker's compliance type of health facility ($p=0.022$) and years of practice ($p=0.044$). The findings may be explained by the fact that constant exposure to hazards like body fluids over a long period of time is associated with compliance with safety precautions.

CONCLUSION

Based on the findings of this study, it was concluded that there was good compliance with safety precautions among healthcare workers in Rivers State. Also there was a significant relationship between demographic variables and compliance with safety precautions.

RECOMMENDATIONS

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

1. The Ministry of Health and other health agencies should create thorough safety handbooks or guides that offer detailed instructions on safety protocols and guidelines for healthcare personnel. These materials should be made available in print and digital versions.
2. The Ministry of Health should ensure that healthcare personnel are updated on safety principles and processes on a regular basis. Online resources, seminars, and workshops should be used to deliver these updates.
3. In order to increase overall safety compliance, hospital management boards should encourage interdisciplinary collaboration among healthcare professionals by allowing them to share knowledge and experiences across departments and disciplines.
4. Hospital management should establish a system for healthcare facilities to routinely assess workplace hazards and develop risk assessments. Encourage staff to report potential hazards promptly.

Conflict of interest

The authors have no conflict of interest to declare for this study

Funding

None

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