



COMPLIANCE WITH SAFETY PRECAUTIONS AMONG HEALTH WORKERS IN PRIMARY HEALTH CARE SYSTEM IN ETCHE LOCAL GOVERNMENT AREA OF RIVERS STATE

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Abstract

This study aimed to investigate compliance with Safety Precautions among Health Workers in Primary Health Care System in Etche Local Government Area of Rivers State, Nigeria. A descriptive cross-sectional design was adopted for the study. A sample size of 120 health workers took part in the study. A semi-structured questionnaire with a reliability index of 0.75 was used for data collection. Five research objectives and four hypotheses guided the study. Data obtained were analyzed using frequencies, percentages, and Chi-square test. The outcome of the study showed that most of the health workers had a high level of compliance with safety precautions. The findings further showed that there were significant associations between age ($\chi^2=21.332$, $p<0.05$), gender ($\chi^2=5.817$, $p<0.05$), years of service ($\chi^2= 18.382$, $p<0.05$) and job category ($\chi^2= 15.763$, $p<0.05$) and compliance with Safety Precautions among Health Workers in Primary Health Care System in Etche Local Government Area of Rivers State, Nigeria respectively. It was concluded that socio-demographic characteristics such as age, gender, years in service and job category influence compliance with safety precautions and recommended among others that government, ministries of health and Non-Governmental Organizations at all levels should mount more intensive enlightenment campaigns through public talk, seminars and workshop to create more awareness for safety precautions among health care professionals.

Keywords: Compliance, Safety, Precaution, Primary, Healthcare workers,

Introduction

Healthcare-associated infections (HAIs) remain the most adverse event in any healthcare delivery system. It affects millions of people each year, leading to significant morbidity and mortality (Zing, et al., 2015). Researches showed that a large proportion of healthcare providers and clients had gotten infections within healthcare facilities. In many works, about 49% of these problems have been recorded to HAIs (Liu, et al., 2015). Healthcare workers (HCWs) are at direct risk of being exposed to blood and other body fluids during the discharge of their duties. Consequently, they are at risk of infection of blood borne viruses including hepatitis B virus (HBV), hepatitis C virus (HCV), and human immunodeficiency virus (HIV) (Zing, et al., 2015). However, needle stick injury (NSI) and burns are the most common forms of occupational exposure which results in transmission of bloodborne infection and other related conditions. Healthcare-associated infections (HAIs) have been reported to be a serious problem in healthcare services as they are common causes of illness and mortality among hospitalized patients including Health Care Workers as a result of poor knowledge and non-compliance safety precautions (Nejad, et al., 2011).

Safety precautions are usually measures put in place to prevent the spread of blood diseases and other related occupational health hazards when providing health care (Zing, et al., 2015). Since the identification of these hazards cannot be reliably made by medical history and physical examination, the Centers for Disease Control (CDC) has announced that safety measures are used in all environments and on all equipment and patients, regardless of appropriate information about their infection status (Oliveira, et al., 2009).

Safety precautions include keeping the hands clean; using barriers such as gloves and masks; cleaning tools used during care; environmental control, adequate discarding of sharp instruments; and patient's accommodation about requirement levels as a way of spreading (Askarian, et al., 2017), Hand hygiene is most important among the safety precautions advocated. Adoption of safe practices for handling needle sticks and other sharp objects,

given the possibility of outbreaks, especially of Hepatitis B and C is also a preventive measure worthy of mentioning.

Strict observance of safety precautions is important in safety. Merriam Webster dictionary defined compliance as the act or process of complying (conforming, yielding) to a desire, demand, proposal, or regimen or coercion. Compliance with safety precautions brings down the risk of exposure to occupational health hazards (A Moran & Onuwube, 2013). The study also observed that better knowledge of universal precautions among HCWs was one of the correlates of good compliance. However, Knowledge of safety precautions by HCWs may be affected by their type of training and years of experience. Compliance on the part of healthcare workers with stipulated measures has been recognized as the best way to prevent and control diseases related to healthcare providers and their patients (Siegel, et al., 2011). It has been advised that all healthcare providers should apply safety measures irrespective of their disease status. These measures include but are not limited to hand cleanliness, use of protective tools, and instrument processing (Nejad et al., 2011), however, in many research works, information and strict obedience with safety principles among healthcare professionals was shown to be inadequate about protecting the eye, ensuring that needles are recapped, using gloves to protect the hands, ensuring that hands are cleaned before and after patient contact, wearing face masks etc.

Fayaz et al., (2014) reported that major factors affecting compliance with safety measures include but are not limited to poor information about staying safe, having little time to ensure safety is practised, poor training, using equipment that makes them uncomfortable, having problems with their skin after using safety apparatus, not able to remember using PPE, and not having any form of encouragement from management to put in place a free and fair work environment. Moreover, certain personal information such as age, sex, job category, marital status, working site in the hospital and work experience have also been discovered to be linked with poor obedience to safety standards (Nejad et al., 2011). The study further stated that years of working in the institutions among professionals contributed to rapid information and strict acknowledgements of safety precautions. However in Rivers State, little is known about how healthcare workers respond to safety measures despite all research work that has been written. Hence, this study tends to investigate Knowledge and Compliance with Safety Precautions among Health Workers in Primary Health Care System in Etche Local Government Area of Rivers State.

Purpose of the Study

The study investigates the Compliance with Safety Precautions among Health Workers in the Primary Health Care System in Etche Local Government Area of Rivers State. Specifically; the objectives of this study are to:

1. investigate the level of compliance with Safety Precautions among Health Workers in Primary Health Care System in Etche Local Government Area of Rivers State
2. determine the influence of age on compliance with Safety Precautions among Healthcare Workers in Primary Health Care System in Etche Local Government Area of Rivers State
3. determine the influence of gender on compliance with Safety Precautions among Healthcare Workers in Primary Health Care System in Etche Local Government Area of Rivers State.
4. determine the influence of years of service on compliance with Safety Precautions among Healthcare Workers in Primary Health Care System in Etche Local Government Area of Rivers State.
5. determine the influence of job category on compliance with Safety Precautions among HealthWorkers in Primary Health Care System in Etche Local Government Area of Rivers State.

Hypotheses

The following Hypotheses were formulated to guide the study and were being tested at a 0.05 level of significance.

1. There is no significant relationship between age and compliance with Safety Precautions among Health Workers in Primary Health Care System in Etche Local Government Area of Rivers State.
2. There is no significant relationship between gender and compliance with Safety Precautions among Health Workers in Primary Health Care System in Etche Local Government Area of Rivers State.
3. There is no significant relationship between years of service and compliance with Safety Precautions among Health Workers in Primary Health Care System in Etche Local Government Area of Rivers State.

4. There is no significant relationship between job category and compliance with Safety Precautions among Health Workers in Primary Health Care System in Etche Local Government Area of Rivers State.

Methods and Materials

The design of the study was a descriptive survey research design. The study was done out among Health Workers in Primary Health Care System in Etche Local Government Area of Rivers State. A sample size of three hundred and twenty was determined using a random sampling method. A semi-structured questionnaire was composed to extract information on the variables of the study. The reliability of the instrument was 0.75. The researchers personally administered the questionnaire to respondents. A total of 116 copies of the instrument retrieved were used for data analysis. The questionnaire was designed to obtain responses using alternative responses patterns. Data were entered into the computer using Statistical Package for Social Science (SPSS 20.0) software for analysis and data were presented using frequency, percentages and chi-square.

Results

Table 1: Socio-demographic Characteristics of Respondents

Variables	Frequency (F)	Percentage (%)
Age		
15-20 years	11	9.5
21-25years	37	31.9
26-30years	44	37.9
31-35years	19	16.4
36 and above	5	4.3
Total	116	100.0
Gender		
Male	57	49.1
Female	59	50.9
Total	116	100.0
Marital status		
Married	61	52.6
Single	51	44.0
Windowed	4	3.4
Total	116	100.0
Religion		
Christianity	111	95.7
Islam	3	2.6
Traditional	2	1.7
Total	116	100.0
Job category		
Doctor	7	6.0
Nurses	20	17.2
Pharmacists	24	20.7
Radiographers	5	4.3
Lab technicians	22	19.0
Hospital sanitary workers	15	12.9
Community health workers	23	19.8
others	-	-
Total	116	100.0
Years in service		
1-5 years	59	50.9
6-10 years	41	35.3
11-15 years	16	13.8
16 years and above	-	-
Total	116	100.0

Table 1 revealed that 9.5% of the respondents were within the ages of 15-20 years, 31.9% 21-25years, 37.9% 26-30 years, 16.4% 31-35 years and 4.3% 36 years and above. It showed that 49.1% of the respondents were males while half (50.9%) were females. For marital status, it showed that 52.6% of the respondents were married, less than half (44.0%) were single, while 3.4% were widowed. It showed that more (95.7) were Christians, 2.6% were Islam while 1.7% were traditional. The table also revealed that 6.0% were doctors, 17.2% nurses, 20.7% pharmacists, 4.3% radiographers, 19.0% lab technicians, 12.9% hospital sanitary workers while 19.8% were community health workers.

Table 2a: Compliance with safety precautions

Variables	Frequency (F)	Percentage (%)
I wash hands before and after body fluid exposure		
Always	110	94.8
Sometimes	6	5.2
Never	-	-
Total	116	100.0
I wash my hands before and after touching a patient		
Always	114	98.3
Sometimes	2	1.7
Never	-	-
Total	116	100.0
I wash my hands once my gloves are removed		
Always	100	94.8
Sometimes	6	5.2
Never	-	-
Total	116	100.0
I ensure that I am protected against body fluids of all patients regardless of health status		
Always	95	81.9
Sometimes	19	16.4
Never	2	1.7
Total	116	100.0
I ensure I put on gloves that are clean whenever there is a possibility of exposure to anybody fluids		
Always	100	86.2
Sometimes	12	10.3
Never	4	3.4
Total	116	100.0

Table 2a revealed compliance with safety precautions. The table revealed that 94.8% indicated that they wash hands before and after body fluid exposure, 98.3% indicated that they ensure their hands are washed before and after touching a patient, 94.8% indicated that they wash hands once they remove their gloves, 81.9% indicated that they are protected against body fluids of all who are sick, while 86.2% indicated that they ensure they put on gloves that are clean when being exposed.

Table 2b revealed compliance with safety precautions. The table showed that 91.4 % of the sample ensure they change their gloves before meeting different patients. About 70.7% always wear a waterproof apron whenever they noticed there may be a splash. The majority (95.7%) indicated that they ensure they wear eye goggles whenever they noticed there may be a splash. About 90.5% indicated that they ensure that all reusable tools are sterilized before being used on another patient while 94.0% indicated that they ensure all surfaces are cleaned and disinfected

Table 2c revealed compliance with safety precautions. The table showed that 94% of the respondents indicated that they segregate wastes in black colour coded dust bin always. 90.5% indicated that they always segregate infectious medical wastes in yellow coloured coded dust bin while 62.9% indicated that they always place used sharps in a puncture-resistant container at the point of use.

Table 2b: Compliance with safety precautions

Variables	Frequency (F)	Percentage (%)
I ensure my gloves are changed when meeting with different patients		
Always	106	91.4
Sometimes	10	8.6
Never	-	-
Total	116	100.0
I ensure I wear a waterproof apron whenever I notice there may be a splash		
Always	82	70.7
Sometimes	24	20.7
Never	2	1.7
Total	116	100.0
I ensure I wear eye goggles whenever I notice there maybe splash in my face		
Always	111	95.7
Sometimes	5	4.3
Never	-	-
Total	116	100.0
I ensure all reusable tools are sterilized before being used on another patient		
Always	105	90.5
Sometimes	11	9.5
Never	-	-
Total	116	100.0
I ensure all surfaces are cleaned and disinfected		
Always	109	94.0
Sometimes	5	4.3
Never	2	1.7
Total	116	100.0

Table 2c: Compliance with safety precautions

Variables	Frequency (F)	Percentage (%)
I segregate non-infectious wastes in black colour coded dust bin		
Always	109	94.0
Sometimes	5	4.3
Never	2	1.7
Total	116	100.0
I segregate infectious medical wastes in yellow coloured coded dust bin		
Always	105	90.5
Sometimes	11	9.5
Never	-	-
Total	116	100.0
I ensure that sharps are put in puncture-resistant container at the point of use		
Always	73	62.9
Sometimes	43	32.1
Never	-	-
Total	116	100.0

Testing of hypotheses

Hypothesis 1: There is no significant relationship between age and compliance with Safety Precautions among Health Workers in Primary Health Care System in Etche Local Government Area of Rivers State.

Table 3: Chi-squared test showing relationship between age and compliance with safety precaution

Age	Level of Compliance		Total	df	χ^2 -value	p-value	Decision
	High	Low					
15-20	11(100)	0(0.0)	11(100)	4	21.332	.000	H ₀ Rejected
21-25	11(29.7)	26(70.3)	37(100)				
26-30	28(63.6)	16(36.4)	44(100)				
31-35	13(68.4)	6(31.6)	19(100)				
≥36	3(60.0)	2(40.0)	5(100)				
Total	66(56.9)	50(43.1)	116(100)				

The table above showed that age has a significant relationship with compliance to Safety Precautions (χ^2 -value = 421.332, df = 4, p<0.05) among Health Workers in Primary Health Care System in Etche Local Government Area of Rivers State was rejected.

Hypothesis 2: There is no significant relationship between gender and compliance with Safety Precautions among Health Workers in Primary Health Care System in Etche Local Government Area of Rivers State

Table 4: Chi-squared test showing relationship between Gender and compliance with safety precaution

Gender	Level of Compliance		Total	df	χ^2 -value	p-value	Decision
	High	Low					
Male	26(45.6)	31(54.4)	57(100)	1	5.817	.016	H ₀ Rejected
Female	40(67.8)	19(32.2)	59(100)				
Total	66(56.9)	50(43.1)	116(100)				

The table above showed that gender has a significant relationship with compliance to Safety Precautions (χ^2 -value = 5.817, df = 1, p<0.05) among Health Workers in Primary Health Care System in Etche Local Government Area of Rivers State was rejected.

Hypothesis 3: There is no significant relationship between years of service and compliance with Safety Precautions among Health Workers in Primary Health Care System in Etche Local Government Area of Rivers State.

Table 5: Chi-squared test showing relationship between years of service and compliance with safety precaution

Years of service	Level of Compliance		Total	df	χ^2 -value	p-value	Decision
	High	Low					
1-5	45(76.3)	14(23.7)	59(100)	2	18.382	.000	H ₀ Rejected
6-10	15(36.6)	26(63.4)	41(100)				
11-15	6(37.5)	10(62.5)	16(100)				
Total	66(56.9)	50(43.1)	116(100)				

The table above showed that years of service has a significant relationship with compliance to Safety Precautions (χ^2 -value = 18.382, df = 2, p<0.05) among Health Workers in Primary Health Care System in Etche Local Government Area of Rivers State was rejected.

Hypothesis 4: There is no significant relationship between job category and compliance with Safety Precautions among Health Workers in Primary Health Care System in Etche Local Government Area of Rivers State.

Table 6: Chi-squared test showing relationship between job category and compliance with safety precaution

Job category	Level of Compliance		Total	Df	χ^2 -value	p-value	Decision
	High	Low					
Doctor	7(100)	0(0.0)	7(100)	6	15.763	.015	H ₀ Rejected
Nurses	11(55.0)	9(45.0)	20(100)				
Pharmacists	15(62.5)	9(37.5)	24(100)				
Radiographers	3(60.0)	2(40.0)	5(100)				
Lab Tech	7(31.8)	15(68.2)	22(100)				
Cleaner	6(40.0)	9(60.0)	15(100)				
Comm. Health worker	17(73.9)	6(26.1)	23(100)				
Total	66(56.9)	50(43.1)	116(100)				

The table above showed that job category has a significant relationship with compliance to Safety Precautions (χ^2 -value = 15.763, df = 6, p<0.05) among Health Workers in Primary Health Care System in Etche Local Government Area of Rivers State was rejected.

Discussion

The finding of the study revealed that more than half of the respondents had a high level of compliance with safety precautions. The finding is in line with that of Adulraheem et al., (2012) and Adebimpe (2016) who discovered that a good number of respondents complied with safety precautions. The study also corroborates that of Tolupe et al., (2017) and the study of Arinze-Oyia (2018) where respondents complied positively with safety precautions. The similarities between these studies might be that respondents in the study have been trained on how to avoid an accident in the workplace and have also been trained on how to prevent diseases that may be contracted as a result of poor safety precautions since they are working in a place where diseases can be contracted. Policy enforcement may also play an important factor. However, the studies of Fadeyi et al (2012) differs from the present study as it discovered low compliance with safety precautions among participants. This may be attributed to the fact that participants might have poor knowledge of safety precautions and poor policy enforcement.

The finding of the study showed that age has a significant relationship with compliance with safety measures. This finding corroborates with Arinze-Oyia et al., (2018) and Tolupe et al., (2017) who noted that age contributes to safety precautions among health care workers. This might be because as age increases individuals get more experiences. However, the study of Nwankwo et al., (2017) is not in line with the present study as it reported that management support and policy enforcement is associated with compliance with safety precautions. They differ because while the present study is considering the importance of age with experience in complying with safety precautions, the previous study is considering the importance of management and policy enforcement in compliance with safety precautions

The finding of the study showed that gender has a significant relationship with compliance to Safety Precautions. The finding of the study is in line with that of Abdulraheem et al., (2012) and the study of Adebimpe (2016) who found that gender is significantly associated with compliance with safety precautions. The study of Ariku et al., (2017) also found a significant association between gender and compliance with safety precautions. These studies noted that females observed safety precautions more than males. This might be attributed to the general hygiene standard found among the female population. However, the study of Nwankwo et al., (2016) attributed the association to focus group discussion, policy gap analysis and management support which may also play an important role in compliance with safety measures.

The finding showed that years of service has a significant relationship with compliance to Safety Precautions. The finding is in keeping with that of Abdulraheem et al., (2012), Dimie et al (2015) and Al-Mahdali et al., (2015) who found a significant association between job category and compliance with safety precautions. The studies of Adebimpe (2016) and Aluko et al., (2016) also found a significant association with job category and compliance with safety precautions among participants as most studies reported that the Doctors, Nurses and Medical Laboratory scientists were likely to comply with safety precautions. This might be because the job an individual is exposed to may help motivate him/her to be accident conscious because of the hazards associated with such a job. However, Nwankwo (2016) related the association to management and policy regulations. This means that some individuals may be working in an environment full of hazards and may not comply with safety precautions. However, on the job training can play an important role in compliance with safety precautions among healthcare workers.

The finding showed that job category has a significant relationship with compliance to Safety Precautions. The finding corroborates that of Abdulraheem et al., (2012), Al-Mahdali et al., (2015) and Aluko et al., (2016) who found a significant relationship between years in service and compliance with safety precautions. These studies found out that the more years in service, the more the compliance with safety precautions. This shows that the more years a person spends doing a particular job, the more experiences he gets. However, the study of Nwankwo (2016) found that compliance with safety precautions is significantly related to management support, policy enforcement, policy gap analysis and focus group discussion. The differences between both studies might be attributed to the level of training according to respondents in their various working environments.

Conclusion

Based on the outcome of the study, it was concluded that participants had a good compliance level with safety precautions and that socio-demographic characteristic such as age, gender; years of service and job category of health workers respectively influence compliance with safety precautions.

Recommendations

Given the findings from this study, the following recommendations are made:

1. Government, health agencies and other institutions at all levels should mount more intensive enlightenment campaigns to create more awareness of the need for safety precautions among health care professionals
2. The government, ministries of health and other relevant health agencies should embark on training and retraining of health professionals on standard safety knowledge and compliance with safety precautions
3. The healthcare management and enforcement bodies should ensure strict adherence to standard safety precautions among health care professionals and ensure that defaulters are penalized.
4. The management of the healthcare system should put in place measures aimed at promoting safety practices and, minimizing exposure to hazards through institutionalized efforts and make safety practices mandatory.
5. The management should develop and organize frequently education programmes on the benefits of safety precautions.

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