



## Compliance with Practice of Universal Safety Precautions among Midwives in the University of Calabar Teaching Hospital in Patient's Care

<sup>1</sup>Opiah Margaret Mombel, <sup>1</sup>Oyira Emilia James, <sup>1</sup>Easter Chukwudi Osuchukwu, <sup>2</sup>Emeh, Augusta Nkechi and <sup>3</sup>Awo Chinedu Godwin

<sup>1</sup>Department of Nursing Science, University of Calabar, Calabar, Nigeria

<sup>2</sup>Department of Nursing Science, Ebonyi State University, Abakiliki, Nigeria

<sup>3</sup>Department of Nursing Science, Ebonyi State University, Ebonyi, Nigeria

**Key words:** Calabar, significant, compliance, questionnaire, instrument, precautions

**Abstract:** This study sought to find out the level of compliance with practice of universal safety precautions among nurses in the university of Calabar teaching hospital in patient's care. In order to successfully carry out the study, the following hypothesis were raised to guide the study. There is no significant relationship between nurse's knowledge of safety precautions in patient's care and their compliance with practice of universal precautions in the university of Calabar teaching hospital. Sex does not significantly influence the level of compliance with practice of universal precautions by nurses in the university of Calabar teaching hospital. Seniority does not significantly influence the level of compliance with practice of universal precautions by nurses in the university of Calabar teaching hospital. The research instrument used in collecting data for analysis was a questionnaire administered to the nurses. The questionnaire was administered to 120 nurses drawn from the university of Calabar teaching hospital. Their responses were analyzed using appropriate statistics and the following results were obtained. From the results on Table 3 there is no significant influence of sex on the level of compliance with practice of universal precautions since the calculated t-value of 0.92 is less than the critical t-value of 1.98. This therefore, means that the null hypothesis is retained. It was recommended among others that the hospitals should organize seminars or workshops to further train nurses on the use of protective materials in patient care.

### Corresponding Author:

Opiah Margaret Mombel  
Department of Nursing Science, University of Calabar,  
Calabar, Nigeria

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## INTRODUCTION

Universal safety precautions are a simple standard of infection control practice to be used in the care of all patients at all times to minimize the risk of blood-borne

pathogens. The centers of disease control and prevention have developed the strategy of "universal blood and body fluid precautions" to address concerns regarding the transmission of HIV and other blood borne pathogens highlight the importance of a safe working environment

in health care facility. The spread of these blood borne pathology with in health facilities result in a large part from the failure of the healthcare workers, especially, nurses to carryout the precautionary measures aimed at preventing it's spread.

These precautionary measures consist of careful hand washing and disposal of sharp (needle and other objects), hand washing before and after procedure use of protective barrier such as mask, gown, gloves for direct contact with blood and other body fluids, safe disposal of waste contaminated with body fluid, proper disposal of waste contaminated with soiled linen.

Inspite of the decrease barriers to compliance, noncompliance continued to be problematic. Barriers that continued to interfere with full compliance with mandatory regulations were needle recapping, gloves interference, discomfort with protective equipment, hand washing before and after each procedure, handling of soiled linen. According to World Health Organization (2001), routine and mandatory testing of either health care worker or patients for presence of an infected blood-borne pathogen, especially testing for HIV antibody is not an effective strategy for controlling its transmission in the health care setting, rather WHO state that the universal blood and body fluid precautions to prevent occupational HIV and other blood-borne pathogens transmission implies that "all patients should be assumed to be infectious for HIV and other blood-borne pathogens regardless of whether a laboratory test is positive, negative or not done".

Transmission of blood borne infections in health care setting especially in University of Calabar Teaching Hospital Calabar is becoming a growing concern to health care workers. Several bodies have also issued recommendation as precautionary measures among them are body substance isolation, universal blood and body fluid precaution, the center for disease control and by the occupational safety and health administration effort were made to standardize these precautions and reduce the risk of exposure, so standard precaution were developed of which the World Health Organization is the pioneer.

Despite the mandated guidelines and available institutional protocols for safe practice, compliance with guideline is still not universal. It therefore becomes necessary to evaluate the compliance with universal safety precautions among nurses in University of Calabar Teaching Hospital as they care for patients.

**Statement of problem:** The researcher observes daily alteration in rules and regulations among health care giver who do not engage in precautionary practice to protect themselves as well as the patients. They are flexible in their decision about the use of universal precautions, this is seen in the failure of the nurse-leader to paste the universal precautions in the wards and the controversy on attending to a patient with a cut or wound without gloves and also when handling soiled bed clothes.

There is also a compliant of general lack of funds resulting in limited supply of equipment which has resulted in wide spread use of improperly sterilized medical, dental instrument and other equipment in the hospital also lack of knowledge of basic precautionary measure coupled with high risk behaviors for example using two hands to recap needle by nurses when working either a doubled shift or over time, consistently expose them to the risk of contracting HIV/AIDS in the hospital. This has therefore motivated the researcher to carry out this research to evaluate nurse's compliance of universal safety precaution in UCTH Calabar in patient care.

### **Literature review**

#### **Knowledge and compliance with universal precaution**

**among nurses:** It could be expect that most of health care staffs (nurses) would be fully conversant with guidelines on universal precautions as they have been enforce in most areas, since, the mid nineteen eighties. Knight and Bodsworth (2003) makes it clear that not all practitioners are as knowledgeable as they could be. Inspite in-service training and infection control, additional knowledge is needed to enable nurses to design more effective strategies to increase compliance.

According to a compared study made among the gastroenterologist and endoscopy nurses by Augutuco *et al.* (2003) it was observed that endoscopy nurses adhered to universal precautions recommendations better than gastroenterologist regarding most items queried except in the handling of used needles.

James (2004) in his research on the level of practice of universal safety precautions among nurses in university of Calabar Teaching Hospital observed that there was an improved level of practice of universal precautions among UCTH nurses 50% as compared with the earlier research carryout by Obeten (2002) in General Hospital Calabar, to also assess the level of precautionary measures among nurses in the hospital.

On the factors that promote compliance to universal precautions among health care workers, Lymen is of the opinion that knowledge alone cannot help but looking at the factors that influence the compliance will go a long way to help. She identified factors like reutilization, stereotyping, perception of patients, wishes and the presence of completing values and norms are example of such factors.

James (2002) also identified inadequate knowledge of precautionary measures as well as other factors that can impede precautionary care. Hence, she advocated the need to continually provide nurses with relevant up to data information to enhance their skills for safe practice. Therefore, exposure to continuing education in the hospital was identified as among the factors that can promote compliance to universal safety precaution.

**Factors affecting knowledge and compliance of universal safety precaution:** According to John *et al.* the fear of contagion and negative stereotype beliefs make it difficult for nurses to establish a therapeutic relationship with the HIV infected client. While some nurses do not have adequate knowledge to provide care safely, others do not have the necessary emotion attitudinal resources to do so. Studies cited by John and Oken identifies significant gaps in AIDS-related knowledge a lot of misconceptions about the unverified non viable routes of HIV/AIDS, the reluctant to care for persons with AIDS according to Lacharite is as a result of fear of contagion and inadequate knowledge of precautionary AIDS care. Despite in-service training and infection control update sessions, Hartly found that practitioners tend to increase the level of protection when they think a client is high at risk.

Many researchers have shown that knowledge of universal precautions does not necessarily means compliance with them. Grellier (1997) found that some midwives are reluctant to use the precaution for of interrupting the midwife client relationship. However, midwives have to weigh up the cost of non-compliance, against the risk of contamination with a range of body fluids, even though they may feel uncomfortable in using these precautions at such a sensitive time. Also from the study done by Thomas (2004) on midwives view and practice about universal precaution, findings shows that it is the midwives rather than the women who have problems in accepting universal precautions. Another reason to which health care workers attribute lack of compliance with universal precautions are habit, lack of time, interference with carrying out procedures, discomfort with protective equipment, lack of supplies, carelessness, concern for costs, unexpected body fluid contact and possibility of causing increase fear to patient. Work practice control also reduces the likelihood of exposure by altering the way a task is performed, it address many situational issue related to the time certain risky task are performed. For example, data the occupational health literature suggest that individuals may be most injury prone at the end of a shift when working either a double shift or overtime, yet another factor may be HCW's belief that touching is related to healing and personal protective equipment may interfere with patient relationship.

Another study conducted by Tait and Tuttle (1994) showed that anesthesiologist nurses while well, aware of CDC guidelines for the prevention of occupational transmission of HIV and HBV, continue to adjust their behaviour situationally. Anesthesiologist change their compliance with universal precautions based on perceived patient risk factors and regional prevalence in HIV of respondents reported that they always complied with

CDA guidelines when presented with a HIV infected patient but only 47% adhered to the guidelines when patient was considered low risk.

Also, according to Richman *et al.* (2000) it was noted that senior anesthesia providers used protective eye wear more frequently than juniors did. This is because more of the senior anaesthesia provider routinely wears corrective glasses and therefore more of them used eye protection. Unlike glove use, senior providers were observed not to wear gloves 54% of the time while in contact with patients. This is also due to habit that are longstanding and are difficult to change, regardless of the patient demographic or perceived risk factors. Their data also show the lowest compliance with gloves wearing during taping procedure. Approximately, 1/3 of provider who were wearing gloves before-hand remove their gloves to tape ET-Tubes and IVS. This may be due to tape adhering to latex gloves or a perceived lack of propitiation making the task of taping more difficult while performing these task, anaesthesia providers are still at risk of coming in contact with blood and needles that have been placed next to the patient and uncapped, after the IV was started.

Cutter and Jordan (2004) in her writing on the uptake of guideline to avoid and report exposure to blood and body fluids investigated the extent to which universal precautions are used and the reporting of injuries. Questionnaires were administered to 200 scrub nurses; surgeon and midwives employed in general operating theatres and delivery suites. Only 1.5% of respondents adopted universal precautions for all patients, irrespective of whether their blood borne viral status was -known on average, just half recommended theatre specific precautions were adopted. Midwives adopted more (4.47 of seven) than surgeon (3.43 of seven) and nurses (3.4 of seven). About 63.3%, made judgments about nationality, life style or sexual orientation when making decision about protective clothing. About 74% reported sustaining an inoculation injury in the preceding 10 years and 32.4% admitted failing to report it.

## **MATERIALS AND METHODS**

The researchers design adopted for this study is the descriptive design. This design is adopted because in descriptive design it is concerned with conditions or relationships that exist; practices that prevail beliefs, points of view or attitudes that are held; processes that are going on effects that are being felt or trends that are developing. Since, this research is concerned with practices that are prevalent in the teaching hospital that is why this design is adopted.

This study was carried out in University of Calabar Teaching Hospital, Calabar. University of Calabar

Teaching Hospital is a Tertiary Health Institution, founded in 1979 and is located at the South-East of Calabar. The hospital is made of (3) annexes; permanent site, maternity and comprehensive health care Okoyong. The hospital renders the following services, clinical, manpower development (teaching of nursing, paramedical and medical students) and research.

The University of Calabar Teaching Hospital is currently made up of 600 beds which are distributed among the (3) annexes and has staff strength of about 550 nurses. The research population consisted all the 300 nurses in the University of Calabar teaching hospital who come in contact with the patient in the course of performing their duties.

The sampling technique adopted for this research is the stratified random sampling technique. Here, the nurses were classified into five groups based on their rank and a random sampling was adopted in selecting nurses from each of the five groups. The nurses selected from each of the groups were now put together to give the sample of 120 nurses. This technique was adopted in order to ensure that all the nurses irrespective of their rank are represented.

The researcher structured the questionnaire gave to her colleagues to go through it and then to her supervisor for necessary correction and inputs. The questionnaire was read and re-read over and over again, so that, at face value the instrument looks valid; my supervisor also checked face validity of the questionnaire and approved them for typing. The questionnaires were submitted to the project supervisor after they were designed by the researcher who after checking for content validity whether it measured what it supposed to measure and approved them for typing.

A pilot study was conducted on 10 nurses in University of Calabar Teaching Hospital, Calabar that were not part of the sample. This was to test areas of item difficulty and ambiguity and weeks after, another questionnaire was given to the same group of nurses so as to assess if there is any ambiguity of the questionnaire and also to ascertain that the questionnaires are appropriate for data analysis.

**Ethical consideration:** A letter for permission was collected from the Cross River State Ethical Committee Boards and was given to the directors of nursing service and due permission was granted. The respondents (nurses) were assured of confidentiality and anonymity in order to ensure honest answers.

## RESULTS AND DISCUSSION

**General description of data:** The sample size for this research was made up of 120 respondents. Out of this number, 50 of them representing 42% were male and 70 of them representing 58% were female.

The sample distribution based on rank showed that 30 respondents representing 25% were nursing officers II (NO II), 30 of them representing 25% were nursing officers I (NO I), 25 representing 20.8% were Senior Nursing Officers (SNO), 20, representing 16.7% were assistant chief nursing officers (A C NO) while 15, representing 12.5% were chief nursing officers. On their marital status, 15 representing 12.5% were single, 90 representing 75.0% were married, 10 representing 8.3% were divorced and 5, representing 4.2% were widowed. Their ages ranged between 20 and 31 years. Hypothesis by hypothesis presentation of results hypothesis I.

The result of the statistical analysis as presented in Table 1 and 2 show that there is a significant relationship between nurses' knowledge of safety precautions and their compliance with practice of the precautions, since the calculated  $r$  value of 0.76 is greater than the critical  $r$ -value of 0.195. Following this result therefore, the null hypothesis is rejected (Table 2).

**Hypothesis 2:** Sex does not significantly influence the level of compliance with practice of universal precautions by nurses in the university of Calabar teaching hospital. In order to test this hypothesis, the nurses were grouped into male and female and an independent  $t$ -test analysis was carried out as shown in Table 3.

From the results on Table 3 there is no significant influence of sex on the level of compliance with practice of universal precautions, since, the calculated  $t = 0.92$  is less than the critical  $t = 1.98$ . This therefore means that the null hypothesis is retained.

**Hypothesis 3:** Seniority does not significantly influence the level of compliance with practice of universal precautions by nurses in the university of Calabar teaching hospital.

In order to test this hypothesis, the nurses were grouped into senior and junior. Nursing officers II and I were considered as junior nurses while senior nursing officers, assistant chief nursing officers and chief nursing officers were considered as senior nurses. Independent  $t$ -test analysis was used in analyzing the data shown on Table 4.

Results in Table 4 Show that a  $t = 2.75$  was obtained at 0.05 significant level. This observed  $t$ -value when compared with the critical  $t$ -value of 1.98 was found to be higher. On the basis of this observation the null hypothesis is rejected. By implication, seniority significantly influences the level of compliance with practice of universal precautions by nurses in the university of Calabar teaching hospital.

The results of this study revealed that there is a significant relationship between nurses' knowledge of safety precautions and their compliance with practice of the precautions. This therefore, means that nurses who

Table 1: Test-retest reliability estimates of variables on knowledge with universal safety precaution in patient care by nurses in university of Calabar Teaching Hospital Calabar (n = 10)

Independent variables	No. of items	Administration	$\bar{x}$	SD	Rs
Level of knowledge	18	1st	19.82	2.88	0.72
		2nd	19.72	1.98	
Level of compliance to practice	11	1st	20.90	2.48	0.82
		2nd	21.04	2.66	
Factors influencing compliance	4	1st	20.42	3.10	0.85
		2nd	22.81	3.78	

Table 2: Pearson product moment correlation analysis of the relationship between knowledge of safety precautions and compliance with practice (N = 120)

Variables	$\Sigma X$	$\Sigma X^2$	$\Sigma XY$	r
Knowledge of safety precautions	4136	77156	76463	0.7
Compliance with practice of production	4161	78579		

df = 118, critical r = 0.195, p > 0.05

Table 3: Independent t-test analysis of the influence of sex on the level of compliance with practice of universal precautions by nurses

Sex	N	X	SD	df	t-values
Male	50	37.29	6.29	118	0.92
Female	70	36.35	4.25		

df = 118, critical t = 1.98 p < 0.05

Table 4: Independent t-test analysis of the influence of seniority on the level of compliance with practice of universal precautions by nurses

Seniority	N	X	SD	df	t-values
Senior nurses	60	39.1	5.58		
Junior nurses	60	35.8	6.02	118	2.75

df = 118, critical t - 1.98, p > 0.05

had a good knowledge of these precautions complied with their practice more than those who never had a good knowledge of the precautions. This result is supported by Knight<sup>[1]</sup> who found out that not all practitioners are as knowledgeable as they could be inspire of in service training and infection control courses embarked on. John also supports these findings where she identified inadequate knowledge of precautionary measures as a factor that can impede precautionary care. She therefore advocates the need to continually provide nurses with relevant up to date information to enhance their skills for safe practice.

Diekcma *et al.* (2002) in their findings also support the fact that nurses who acquire the knowledge of safety precautions adhere to universal safety precautions.

In the case of sex and the level of compliance with practice of universal precautions, it was found that sex did not influence the level of compliance of nurses with practice of universal precautions. This means that irrespective of sex, nurses who complied with practice precautions did and those who did not never did.

This is so because as nurses it is believed that they all must have been taught the need for the practice of universal safety precautions and so one will not expect that either the male or female nurses only should practice these precautions considering their importance in the

management of patients. On seniority and level of compliance with practice of universal precautions by nurses, the findings revealed that seniority influenced the level of compliance with practice of universal precautions.

This is so because it was discovered that most of the senior nurses complied while in most cases the junior ones were found not complying to this practice. This result is supported by Richman *et al.* (2000) when they noted that senior anesthesia providers used protective eye wears more frequently than junior ones did. They attributed it to the fact that more of the senior ones routinely wear corrective glasses and therefore are more used to the glasses than the junior ones.

## CONCLUSION

About 90% of the nurse who had a good knowledge of safety precautions were able to maintain these precautions in their medical practice and that only the few who did not have that knowledge did not occasionally adhere to those practices. However, most of the nurses had the knowledge.

Sex differential did not influence the compliance with practice of universal precautions. That is 30% of the nurses did not necessarily have to be either male or female to comply with universal precautions.

Seniority of the nurses also influenced their level of compliance with practice of universal precautions. Nurses with higher rank or senior nurses were found to comply with practice of these precautions more than those with the lower ranks or junior nurses.

## RECOMMENDATIONS

Considering the findings obtained from the study some recommendations have been made which may have some implications. The hospitals should organize seminars or workshops to further train nurses on the use of protective materials in patient care.

Junior nurses should be made to work under the senior one in order for them to under study the senior one on the practice of universal precautions. Hospitals should evolve a policy that will compel nurses to comply with these universal precautions.

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