Assessment of Knowledge and Practice of Standard Precaution among Student Nurses of Adamu Adamu College of Nursing Science, Federal University of Health Sciences Teaching Hospital Azare (Fuhstha), Bauchi State, Nigeria.

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ABSTRACT

This study assesses knowledge and practice of standard precautions among students of Adamu Adamu College of Nursing Sciences Azare, Bauchi State. Three research questions were used. The design for this study was descriptive and a sample size of 69 was determined by Toro Yermen's formular. The instrument used was structured questionnaire developed by the researcher. The validity of the instrument was done by the two experts and errors were corrected. Test and retest was done for the reliability and the score of 0.73 was obtained. The obtained data were analyzed using descriptive statistics and presented in frequency distribution table with percentage. The socio – demographic characteristics of the participants revealed that majority of the respondents were within 17 to 19years (58.4%) and are female (65%). Findings of the study revealed that the level of knowledge of participants towards standard precaution was high and level of practice was moderate. It is recommended that improvement in quality of training on standard precautions and mentorship to boost confidence of the students on standard precautions should be encouraged.

Keywords: Knowledge, practice, nurses, standard, precaution

INTRODUCTION

Standard precaution in cooperate the major features of universal precaution (designed to reduce the risk of transmission of blood borne pathogens) and body substance isolation (designed to reduce the risk of transmission of pathogens from moist body substances) are applied to all patients receiving care in health care facilities, regardless of their diagnosis or presumed infection status (CDC, 2022).

Universal safety precaution refers to the practicing medicine of avoiding contact with patent bodily fluid by means of wearing non porous articles, such as medical gloves, goggle, and facemasks. In 1996, thus practice was replaced by the latest approach known as "standard precaution'". (Lipincott, 2022).

The practice is being widely promoted to protect health care workers from occupational exposure to body fluid and consequent risk of infection with blood borne pathogens.

In case of contact with patient blood or body fluid, people are advice to wash the injury area with sample of water, clean with antiseptic solutions and visit the hospital infection committee to monitor and control any infection transmission. Again in the same guide lines it is recommended that used needles, syringes and blades

including other sharps should be collected in sharps containers. In addition to medical and nursing students are also under the risk for injuries with penetrating objects during clinical practices due to their low level of clinical experience. Studies show that l1-50% of medical students and 50-80% of nursing students experience penetrating injuries during their education (PubMed, 2024).

(St. George's Health care, 2014) implemented a protocol regarding the universal precaution for the prevention or occupational exposure to blood- borne viruses. This protocol categorized body fluid into high and low risk groups. The body fluid that are classified as high risk include; breast milk, pus, body tissue, bone marrow, blood, vaginal secretion and pleural fluids. Body fluid classified as low risk are unlikely to contain the above blood borne pathogens e.g fluid like faeces, urine and vomit unless they do contain visible blood.

Standard precaution, are the minimum infection prevention practices that apply to all patient care, irrespective of suspected or confirmed infection status of the parent. It aims to protect all health care workers and prevent them from transmitting the infection to their patients. These include; hand hygiene, use of personal protective equipment (PPE) (eg gloves, gowns, and masks,) needles safety and safe handling of potentially contaminated equipment or surfaces and proper disposal of sharps. body fluid and other clinical waste (American Journal of infection control, 2023).

(WHO, 2022) Infection arise in the hospital are termed as hospital associated infection, such Infection are called "Nosocomial infections'" and sometimes "Hospital Acquired infection. the term health care associated infections is also used.

Health care associated infection (HCAD is defined as an infection occurring in a patient during the process of care in a hospital or other health care facility which was not present or incubating at the time of admission. lt has being estimated that the prevalence of health care associated infection in developed country is 7.6% and in developing country is 10.1% respectively (WHO, 2024).

Health care workers (HCW) are at risk of occupational hazard. As they perform their clinical activities in the hospital, they are expose to blood borne infections by pathogens, such as human immunodeficiency virus (HIV), Hepatitis B and C viruses, from sharps injuries and contacts with deep body fluids (CDC, 2024).

Awareness is knowing that something (such as a situation, condition or problem) exists. or telling. experience, or noticing something (such as a sounds, sensation or emotion) (Merriam, 2024) Practice 1s to do something again in order to become better at it or to do something regularly or constantly as an ordinary part of your life (Merriam, 2024).

The study aimed at assessing the knowledge and practice of safety precaution among nursing students and find out the relationship between safety precaution in improving health. And researcher felt a need to educate the nursing students regarding universal precaution as an effective strategy to prevent blood- borne diseases.

METHODOLOGY

Design: Descriptive research design was used for study.

Study Area: The study was conducted at Adamu Adamu college of Nursing Sciences, FUHSTHA, the college was established in 2018 as a constituency project by Honorable Ibrahim Muhammad Baba and was completed in 2020 under the leadership of the Medical Director, Dr. Abdullahi Ibrahim Bichi. It is currently owned and managed by the FUHSTH Azare, Bauchi state it is located along Amb. Ahmad Abdullahi Road, Azare in katagum Local Government Area, Bauchi State. The college is situated within the traditional walls of Azare metrophils. It shares boundaries with the Federal University of Health Sciences Azare to the east, the NHIS department to the south, FMC General Mosque to the west and kimah petroleum limited to the north. The institution has developed into a complex organization with various departments and units. Its primary departments are Basic Nursing and Basic Midwifery. Other functional units include the administrative block, examination hall, classroom, college demonstration lab, science lab, public health department,

entrepreneurship lab, bursary unit and student hostel. The college serves as a training ground for student nurses and midwives.

Target Population:

The target populations for this study consists of 69 student nurses of Set iii nursing AACNS FUHTHSA. (School record, 2025)

Inclusion criteria: student nurses of Set iii nursing AACNS FUHTHSA.

Exclusion criteria: Students who are not in set 3 nursing were excluded.

Sample Size Determination: The sample consist of all the 69 set 3 nursing students.

Instrument for Data Collection: The instrument used for the study was structured questionnaire developed by the researcher.

Validity of the Instrument: The face and content validity of the questionnaire was carried out by two experts in the Department of Nursing Science, Federal University of Health Sciences Azare. They examined the items in line with objectives set for the study. They also assessed the language used in developing the instrument, made necessary modifications and their input and suggestions were affected prior to the administration of the instrument to the participants.

Reliability of the Instrument: In order to establish the reliability of the instrument, 10% of questionnaires were administered to students of College of Nursing Sciences Misau, Bauchi State, using test-retest method within 2 days interval. The instrument was re-administered to the same group of participants after 2 days. The two sets of scores were correlated using Pearson Product Moment Correlation statistics and the coefficient of reliability of 0.70 was obtained which showed a high value. This made the instrument reliable for data collection.

METHOD OF DATA COLLECTION

The data was collected by the researcher through face-to face method of data administration of the questionnaire and information was obtained from the student nurses of the Adamu Adamu College of Nursing Sciences. The researcher went to the school, met with the participants and distributed the questionnaires to them after informing them about the study after obtaining their consent to participate. A trained research assistant helped in the process of data collection and participants were allowed a period of 30minutes to 1hour to fill the questionnaires before same were retrieved from them. The process of data collection lasted for two days to enable the researcher cover all the participating subjects.

Data Analysis

The obtained data was analyzed using mean, frequency and percentage presented in tables and frequency.

Ethical consideration

The principles guiding the conduct of human subjects' research to include confidentiality, autonomy, beneficence, fidelity and justice were complied with.

RESULTS

The table below shows that the majority of the respondents were between the age group of 17-19 years and reflected female preponderance. Female students within this age group are higher in number than their male counterparts. The socio-demographic characteristics of the participants revealed that the majority of the respondents are within 17 to 19 years (58.4%) and are female (41%).

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Table 1. The Socio –Demographic Characteristics of The Participants

SN	VARIABLES	FREQUENCY	PERCENTAGE
1.	AGE		
	17-19	40	58.4%
	20-25	20	29%
	26-above	9	12.6%
	Total	**69**	**100%**
2	GENDER		
	Male	28	35%
	Female	41	65%
	Total	**69**	**100%**

The below table indicates that all the participants have moderate knowledge on the standard precautions (Grand Mean 3.32) while the least of the participants agreed that all body fluids should be considered potentially infectious (Mean 2.8).

Research Question One: What is the level of knowledge of student nurses toward standard precaution in AACN FUHSTHA Bauchi?

Table 2. Means Responses of the Level of Knowledge of Student Nurses of AACN FUHSTHA Bauchi

S/N	ITEMS	SA	A	D	SD	MEAN
	Standard precautions are basic infection prevention practices applied to all patients.	40	24	4	1	3.5
	All body fluids should be considered potentially infectious.	20	20	25	4	2.8
	Standard precautions aim to protect both patients and healthcare workers.	45	20	3	1	3.6
	Universal precaution recommended the use of protective barriers such as gloves , gown mask etc.	50	14	3	2	3.3
	Hand hygiene is the most important element of standard precautions.	45	20	4	0	3.6
	Potential ways of occupational exposure include needle stick, fluid splash on the eye or inhalation.	50	10	5	4	3.5
	The common infection agent known to be transmissible through occupational exposure	30	20	10	9	3.0

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	are HBV, HCV, and HIV **Grand Mean 3.32**					

Research Question Two: What is the level of practice of student nurses toward standard precaution in AACN FUHSTHA?

The table below indicates that Moderate number of the participants practiced standard precautions (Grand Mean 2.92) while least of the participants disagreed that it is forbidden to bend or recap used needle (Mean 2.0)

Table 3: Means Response of Practice of Student Nurses AACN FUHSTHA toward Standard Precaution

S/N	Items	SA	A	D	SD	MEAN
1	Health care workers have similar training but their behavior may vary according to their perception of risk	35	15	10	9	3.1
2	Some of the reason why health care workers do not comply to standard precaution include habit ,lack of time , discomfort with PPE etc	50	10	5	4	3.5
3	Needle cannula & syringe are sterile single used and should not be re used	40	15	4	10	3.2
4	It is forbidden to bend or recap used needle and disposal containers should be near the handling area	5	10	30	24	2.0
5	Washing of hands should be before and after contact with each patient	24	30	10	5	3.1
6	Contact with contaminated object, material, clothing and individuals should be avoided	35	20	10	4	3.2
7	Healthcare provider must have high index of suspiciousness toward all patients regardless of their condition **Grand Mean 2.92**	10	20	30	9	2.4

Research Question Three: What is the level of compliance with the standard precaution among student nurses of AACN FUHSTHA**?**

The table below indicates that moderate number of the participants complied with standard precaution (Grand Mean 3.15)

Table 4: Means Response of the level of compliance **with the Standard Precaution by the Student Nurses of AACN FUHSTHA**

S/N	Items	SA	A	D	SD	MEAN
1	I am confident in selecting the correct PPE based on the level of patient exposure in every clinical procedure	7	20	12	30	2.1

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2	I consistently apply hand hygiene before and after each patient contact during clinical routine and procedures.	58	6	5	0	3.8
3	I take appropriate precautions when handling contaminated instruments, linens and sharps during patient care	20	30	10	9	2.9
4	I can recognize clinical situations where there is high risk of exposure to infectious body fluid and know the immediate action to take.	35	20	15	4	3.4
5	I am confident in applying respiratory hygiene and cough etiquette when managing patient care.	35	30	4	0	3.4
6	I know how to educate patients and their families about infection control practices during clinical care. **Grand Mean 3.15**	40	15	10	4	3.3

DISCUSSION

This study assesses the knowledge and practice of standard precautions among students of Adamu Adamu College of Nursing Sciences Azare, Bauchi State. The sociodemographic characteristics of the participants revealed that the majority of the respondents are within 17 to 19 years (58.4%) and are female (41%). It is in line with the study conducted by Arinze-Onyia et al. (2018) – University of Nigeria Teaching Hospital, Enugu: Surveyed 290 nurses (mostly female); 98% heard of SP, 77.2% accurately defined it.

This study shows that the knowledge of standard precaution by the participants is moderate. This study is in line with Joseph et al. (2024), who reported 105 Nigerian student nurses found 76.2% had adequate knowledge of standard precautions. The authors opined that possible reasons for the moderate knowledge could be linked to the emergent and reemergent diseases such as Corona in 2020 in Nigeria, which gave them better experiences and increased their knowledge level level.

The study revealed that Moderate number of the participants complied with the standard precautions (Grand Mean 2.92) while least of the participants disagreed that it is forbidden to bend or recap used needle (Mean 2.0). This study is inline with Alshammari et al. (2018) surveyed 829 Saudi nursing students across six universities. Overall compliance with standard precautions was 60.1%. PPE use was high (masking), but sharps disposal compliance lagged.

The result revealed that moderate number of the participants utilized standard precaution (Grand Mean 3.15) it is in line with the study conducted by Adegboye et al. (2022) in southwestern Nigeria assessed knowledge and compliance with standard precautions among final-year nursing students. The findings revealed that 78% of the students demonstrated good knowledge of standard precautions, only 54% reported consistent compliance in practice. The author explained that attributed poor compliance to inadequate supervision during clinical rotations and limited access to personal protective equipment (PPE).

CONCLUSION

It is concluded, based on the available descriptive data, that there are moderate knowledge, practice and compliance with the standard precautions among student nurses of Adamu Adamu College of Nursing Sciences Azare, Bauchi State. Therefore, we recommend improvement in knowledge, practice and compliance on standard precautions, adequate supervision during clinical rotations and access to personal protective equipment (PPE). Regarding the strength of the study, this appears to be the first study conducted in this area at the study setting.

Limitation: the study is limited to fewer number of the student nurses therefore, the interpretation of the results should be done with cautions

Recommendations: the study recommends the replication of the study at larger scale to enable drawing a more robust findings that could inform policy making of the schools of Nursing.

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