



## ASSESSMENT OF KNOWLEDGE AND PRACTICE OF UNIVERSAL PRECAUTION IN PREVENTING NOSOCOMIAL INFECTIONS AMONG NURSES IN IBRAHIM YAKOWA MEMORIAL HOSPITAL KAFANCHAN

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### ABSTRACT

Universal Precautions are measures taken to reduce the risk of transmission of hospital acquired infections. The purpose of the study was to assess the knowledge and practice of universal precaution in preventing Nosocomial infection among Nurses and Midwives in the hospital environment. Facility – based cross-sectional study design was used for the research. Data were collected using a pretested structured questionnaire. Data were analyzed and interpreted using Likert Scale, Frequency tables and percentages. The result shows that all the 102 respondents have good knowledge of universal precaution. 96 respondents (94%) see universal precautions as a means to curb nosocomial infection. 96 respondents (94%) agreed that strict observance of the universal precaution should be observed before and after every nursing procedure, while 30 respondents (30%) are of the opinion that universal precaution is observed only before performing an invasive procedure, 42 respondents (41%) stated that universal precaution should be carried out only when infection is suspected. 80 respondents (78%) stated that inadequate hospital equipment affect the practice of universal precaution while 805 respondents (83%) stated that work overload affects the practice of universal precaution. 96 respondents (94%) stated that lack of enough manpower and equipment is affecting their ability to stick to the routine of universal precaution. in conclusion, the result shows that Nurses have knowledge on universal precaution in preventing Nosocomial infections but there exists a gap between knowledge and practice which could be attributed to shortage of manpower and equipment.

**Keywords:** Assessment, Knowledge, Nosocomial infection, Practice, Universal precaution

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## INTRODUCTION

Hospital-acquired infections otherwise known as Nosocomial infections are a major public health concern throughout the world, contributing to increased morbidity, mortality, and health care cost (Ahmed *et al.*, 2020). To curb transmission in the hospital, universal precautions are expected to be adhered to by healthcare workers. However, the attitude towards and lack of compliance to universal precautions in many hospital environment is a major source of concern. Research has proven that the major vehicle for the transmission of nosocomial infection is via the hand that is contact and the air. This has added to a high level of spread of infection resulting in some cases of post-operative death, increase rate of puerperal sepsis/fever, prolonged patient recovery time, expenditure and reduced productivity (Misha *et al.*, 2014)

Universal precautions according to the World Health Organization are the basic level of infection control precautions which are to be used as a minimum in the care of all patients. They are meant to reduce the risk of transmission of blood- borne and other pathogens from both recognized and unrecognized source (WHO, 2007)

Universal precaution should be practiced to protect healthcare workers. This includes the use of personal protective equipment such as gloves, gowns, mask and eye protection to protect them from blood and body fluids. Transmission based precaution should be used to prevent airborne droplet, and contact transmission. A fit-tested N-95 mask should be worn and patient placement in an isolated negative pressure room to prevent airborne transmission. Patient placement in a single room and healthcare worker gown and gloves are worn to avoid contact transmission. Aseptic technique should be practiced for invasive procedure and surgery. (Sikora and Zahrah, 2022)

As patient's advocates, Nurses are in the unique position to effect change to improve patient care standard. The nurse has many tools available to create a safe environment for patients. Universal precaution is the corner stone of a safe environment that is free from infection (Sikorah and Zahrah, 2022).

## MATERIALS AND METHODS

### Research design

The research adopted a descriptive design which aimed at associating the knowledge and practice of Nurse and Midwives and compliance to use of universal precautions in the hospital.

### Research Setting

The research was conducted at Ibrahim Yakowa Memorial Hospital which is a secondary health facility geographically located west central part of Kafanchan in Kaduna State Nigeria. The hospital is divided into administrative units

Target population: The study used the total population of 102 staff Nurses and Midwives because they have more contact with patients and ward.

### Data Analysis

The collected data were analyzed and interpreted using Likert scale, frequency distribution table and percentages.

## RESULTS AND DISCUSSION

### Section 1: Respondents Demographic Data

This section's result as seen in Table 1, shows that 54 respondents representing 53% fall within the ages of 20-25 years, 29 respondents representing 29% fall within the ages of 26-30 years and 19 respondents representing 18% fall within the ages of 30 and above. The 38 respondents representing 37% are all males and 64 respondents representing 63% are all females. The 46 respondents representing 45% are less than 5 years in practice and 56 respondents representing 55% are more than 5 years in practice. 40 respondents representing 39% are RN (Registered Nurse), 56 respondents representing 27% are RM (Registered Midwives), 20 respondents representing 19% are RM. PBN (Registered Midwives and Post Basic Nurses) and 15 respondents representing 15% are BNSc (Bachelor of Nursing Science) holders as their qualification. 8 respondents (7%) work in Out-patient Department (OPD), 16 respondents (15%) work in surgical wards, 18 respondents (17%) work in medical wards, 14 respondents (13%) work in maternity, 8 respondents (7%) work in chest ward, 4 respondents (4%) work in ICAP, 6 respondents (6%) work in theatre, 4 respondents (4%) work in ophthalmic, 8 respondents (7%) work in pediatric, 8 respondents (7%) work in A &E, 2 respondents (2%) work in ENT, 5 respondents (5%) work in Antenatal Clinic (ANC) and 6 respondents (6%) work in gynecology.

### Section 2: Respondents Response on The Question of whether or not they have Good Knowledge on Universal Precaution in the Prevention of Nosocomial Infection

This section shows that 68 respondents representing 67% strongly agree to have a high knowledge of universal precaution in the prevention of nosocomial infection and 34 (33%) agree. This implies a high knowledge of universal precaution in prevention of nosocomial infection (Table 2).

### Section 3: Response on the question on whether the Practice of Universal Precaution Serves as Vehicle for the Prevention of The Spread of Nosocomial infection

This section shows that 50 respondents representing 49% strongly agree that practice of universal precaution serves as a vehicle to prevent the spread of nosocomial infection. 46 respondents (45%) agree, 4 (4%) strongly disagree and 2 (2%) disagree. This implies that the respondents are aware of the practice of universal precaution as an important tool in the prevention of the spread of nosocomial infection (Table 3).

### Section 4: Respondents Response to the question on whether Universal Precaution Should be carried out before and after every Nursing Procedure

This section shows that 64 respondents (63%) strongly agree that universal precaution should be carried out before and after every nursing procedure. 32 (31%) agree and 6 respondents (6%) disagree. This implies that most nurses and midwives are aware and strongly observe the procedure associated with universal precaution for disease prevention (Table 4).

**Table 1:** Demographic Data of Respondents

S/N	Variables	Frequency	Percentage
1	Age		
	20-22	51	53
	26-30	29	29
	30 and above	19	18
	<b>Total</b>	102	100
2	Gender		
	Male	38	37
	Female	64	63
	<b>Total</b>	102	100
3	Years in Practice		
	<5 Years	46	45
	>5 Years	56	5
	<b>Total</b>	102	100
4.	Qualifications		
	RN (Registered Nurse)	40	39
	RM (Registered Midwives)	27	27
	RM/PBN (Registered Midwife/Post basic Nursing)	20	19
	BNSc (Bachelor of Nursing Science)		
	<b>Total</b>	102	100
5.	Ward Presently Working		
	OPD	8	7
	Surgical	16	15
	Medical	18	17
	Maternity	14	13
	Chest Ward	8	7
	ICAP	4	4
	Theatre	6	6
	Ophthalmic	4	4
	Pediatric	8	7
	A &E	8	7
	ENT	2	2
	ANC	5	5
	Gynae	6	6
	<b>Total</b>	102	100

Source: Sir Patrick Ibrahim Yakowa Memorial Hospital Kafanchan, Kaduna State of Nigeria

**Table 2:** Respondents Response on The Question of whether or not they have Good Knowledge on Universal Precaution in the Prevention of Nosocomial Infection

S/N	Variables	Frequency	Percentages
1	Strongly agree	68	67%
2	Agree	34	33%
3	Strongly disagree	0	0%
4	Disagree	0	0%
Total		102	100%

Source: Sir Patrick Ibrahim Yakowa Memorial Hospital Kafanchan, Kaduna State of Nigeria

**Table 3:** Respondents Response on the question on whether the Practice of Universal Precaution Serves as Vehicle for the Prevention of The Spread of Nosocomial infection

S/N	Variables	Frequency	Percentages
1	Strongly agree	50	49%
2	Agree	46	45%
3	Strongly disagree	4	4%
4	Disagree	02	2%
Total		102	100%

Source: Sir Patrick Ibrahim Yakowa Memorial Hospital Kafanchan, Kaduna State of Nigeria

**Table 4:** Respondents Response to the question on whether Universal Precaution Should be carried out before and after every Nursing Procedure

S/N	Variables	Frequency	Percentages
1	Strongly agree	64	63%
2	Agree	32	31%
3	Strongly disagree	0	0%
4	Disagree	6	6%
Total		102	100%

Source: Sir Patrick Ibrahim Yakowa Memorial Hospital Kafanchan, Kaduna State of Nigeria

#### **Section 5: Respondents response on the question on whether healthcare providers practice Universal precaution only when infection is suspected**

This section shows that 40 respondents (39) strongly disagree that health care providers practice universal precaution only when infection is suspected. 22 respondents (21%) strongly agree, 20 respondents (20%) agree and 20 respondents (20%) disagree. The response indicates that health care providers actually explore the benefits of universal precautions which gives them an edge towards ensuring the elimination of infectious agents (Table 5).

#### **Section 6: Respondents Response on the question on whether Universal Precaution is observed only before performing an invasive procedure**

This section shows that 37 respondents representing (36%) disagree that universal precaution is done only before performing an invasive procedure. 35 respondents (34%) strongly disagree, 20 respondents (20%) strongly agree and 10 respondents (10%) agree. This implies that most of the respondents disagree that universal procedure is only performed before an invasive procedure. This implies that it is essential for all health care providers to observe universal precaution before and after every nursing procedure in the hospital (Table 6).

**Section 7: Respondents Response on the question of whether inadequate Hospital Equipment affects the Practice of Universal Precaution.**

This section shows that 50 respondents (49) strongly agree that inadequate hospital equipment affect the practice of universal precaution. 30 respondents (29%) agree, 17 respondents (17%) strongly disagree and 5 respondents (5%) disagree. This implies that hospital equipment if adequately provided will go a long way in sustaining the practice of universal precaution (Table 7).

**Section 8: Respondents Responses on the question of whether work overload has effect on the practice of universal Precaution**

This section shows that 55 respondents (54%) strongly agree that work overload affects the practice of universal precaution. 30 respondents (29%) agree, 15 respondents (15%) disagree and 2 respondents (2%) strongly disagree. This strongly suggests that excessive work overload has the tendency to distract Healthcare workers from actually carrying out certain procedures including universal precaution patient care (Table 8).

**Section 9: Respondents Response on the Question on Whether Hospital policies affects Universal precaution as a means to increase the rate of Recovery of patients**

This section shows that 40 respondents (39%) strongly disagree that hospital policies affects the compliance of universal precaution as a means to increase the rate of recovery of patients. 30 respondents (29%) agree, 20 respondents (20%) disagree. This implies that majority of the respondents strongly disagree that hospital policies affect the practice of universal precautions (Table 9).

**Section 10: Respondents response on the question on whether Nurses Perceive Universal Precaution as a means to increase the rate of recovery of patients**

This section shows that 50 respondents (49%) strongly agree that nurses perceive universal precaution as a means to increase the rate of recovery of patients, 42 respondents (41%) agree, 9 respondents (9%) strongly disagree and 1 respondent (1%) disagree. This suggests that if universal precaution like hand washing is adhered to it helps to create a free environment for the patient during nursing care, and hence facilitate recovery of patients (Table 10).

**Section 11: Respondents response on the question of using Hand washing as a Preventive tool that requires less skill of Practice**

This section shows that 40 respondents (39%) strongly agree that hand washing as a preventive tool requires less skill of practice. It shows that 25 respondents (24%) disagree, 20 respondents (19%) strongly disagree and 20 respondents (19%) agree. This implies that the art of hand washing before and after every procedure require less of practice or other form of expertise (Table 11).

**TABLE 5:** Respondents response on the question on whether healthcare providers practice Universal precaution only when infection is suspected

S/N	Variables	Frequency	Percentages
1	Strongly agree	22	21%
2	Agree	20	20%
3	Strongly disagree	40	39%
4	Disagree	20	20%
Total		102	100%

Source: Sir Patrick Ibrahim Yakowa Memorial Hospital Kafanchan, Kaduna

**Table 6:** Respondents Response on the question on whether Universal Precaution is observed only before performing an invasive procedure

S/N	Variables	Frequency	Percentages
1	Strongly agree	20	20%
2	Agree	10	10%
3	Strongly disagree	35	34%
4	Disagree	37	36%
Total		102	100%

Source: Sir Patrick Ibrahim Yakowa Memorial Hospital Kafanchan, Kaduna

**Table 7:** Respondents Response on the question of whether inadequate Hospital Equipment affects the Practice of Universal Precaution.

S/N	Variables	Frequency	Percentages
1	Strongly agree	50	49%
2	Agree	30	29%
3	Strongly disagree	17	17%
4	Disagree	5	5%
Total		102	100%

Source: Sir Patrick Ibrahim Yakowa Memorial Hospital Kafanchan, Kaduna

**Section 8:** Respondents Responses on the question of whether work overload has effect on the practice of universal Precaution

S/N	Variables	Frequency	Percentages
1	Strongly agree	55	54%
2	Agree	30	29%
3	Strongly disagree	2	2%
4	Disagree	15	15%
Total		102	100%

Source: Sir Patrick Ibrahim Yakowa Memorial Hospital Kafanchan, Kaduna

**Table 9:** Respondents Response on the Question on Whether Hospital policies affects Universal precaution as a means to increase the rate of recovery of Patients

S/N	Variables	Frequency	Percentages
1	Strongly agree	12	54%
2	Agree	30	29%
3	Strongly disagree	2	2%
4	Disagree	15	15%
Total		102	100%

Source: Sir Patrick Ibrahim Yakowa Memorial Hospital Kafanchan, Kaduna

**Table 10:** Nurses Perceive Universal Precaution as Means to Increase the Rate of Recovery of Patients

S/N	Variables	Frequency	Percentages
1	Strongly agree	50	49%
2	Agree	42	41%
3	Strongly disagree	9	9%
4	Disagree	1	1%
Total		102	100%

Source: Sir Patrick Ibrahim Yakowa Memorial Hospital Kafanchan, Kaduna

**Table 11:** Respondents response on the question of using Hand washing as a Preventive tool that requires less skill of Practice

S/N	Variables	Frequency	Percentages
1	Strongly agree	40	39%
2	Agree	20	19%
3	Strongly disagree	20	19%
4	Disagree	25	24%
Total		102	100%

Source: Sir Patrick Ibrahim Yakowa Memorial Hospital Kafanchan, Kaduna

## DISCUSSION

The findings of the research is in tandem with the findings of Ahmad et, al., (2020) in an epidemiological study in Bauchi State Nigeria which shows that knowledge of Hospital acquired infection was found among healthcare workers but there is still lack of adequate quality control practice to prevent hospital acquired infection.

## CONCLUSION

The menace of nosocomial infection is a real occupational and public health challenge that needs to be given more attention. The gap between knowledge and practice which could be attributed to shortage of manpower, equipment, conducive working environment as well as adequate hospital management policies should be bridged by relevant authorities in order to curb the challenge of nosocomial infections.



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## CONFLICT OF INTEREST

The Authors hereby states that there was no conflict of interest in the conduct of the study

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