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EVALUATION OF KNOWLEDGE, ATTITUDE AND PRACTICE OF INFECTION PREVENTION AND CONTROL AMONG NURSES IN HOSPITAL IN JEMA'A LOCAL GOVERNMENT AREA OF KADUNA STATE

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ABSTRACT

The study was carried out to evaluate the Knowledge, Attitude and Practice of Infection Prevention and Control among Nurses in Hospital in Jema'a Local Government Area of Kaduna State. The survey research design was used for the study, the questionnaire administered and data collected was analyzed according to the formulated research questions by the researchers. The population of the study is made up of nurses in the hospitals in Jema'a Local Government Area of Kaduna State. Out of these, the estimated population of the sample size was 300 and only 294 were appropriately responded to. A structured questionnaire of five sections with a total of 32 items was used to elicit information on the knowledge of nurses in infection prevention, the practice of nurses towards infection prevention, the type of infection among patients and method used in infection prevention. The instrument was validated using 3 lecturers above the rank of senior lecturer in the department of Nursing Science and Physical Health Education department, University Jos. It was pretested using respondents with similar characteristics to those in the area of the main study, 45 respondents were used to try test the instrument that were not part of the main study, Cronbach's Alpha was used and a reliability coefficient index of 0.78 was obtained, which was seen as a reliable figure for the instrument to be used for the main/present study. It was discovered among others that: Nurse have very high knowledge on prevention of infection as the score above 50% in all items, the nurses have positive attitude towards the prevention of infection as well as the use of different method of prevention of infection. It was recommended among others that result that the respondents had positive attitude be noted by hospital administration who can encourage making the work environment conductive for nurses to practice the profession with ease for better productivity. The result that nurses use various good method of infection prevention been noted by hospital administration and workshops on various method of infection prevention in other to maintain high nursing practices in health facilities.'

Keywords: Practice, Nurses, Infection, Prevention

INTRODUCTION

Nursing practice is very tasking and enormous, therefore there is possibility of nurse been infected as a result of taking care of patients who may likely be dependent upon the knowledge and attitude of an individual. The endemic burden of health care associated with infection is also significantly higher in low and middle income than high-income countries (of which Nigeria is one) in particular impatient admitted in intensive care unit (ICU) and neonates (WHO 2009). Knowledge is the formation, skills and understanding that you have gained through learning or experience in line with the work, fact, information and skills acquired through experience or education and theoretical or practical understanding of nursing practice. Infection related diseases are still the main causes of death in Nigeria, according to the 2013 health profile acquired by the World Health Organization (WHO) statistics. The burden of disease in Nigeria includes, HIV, Tuberculosis, Malaria, other infectious diseases and respiratory infection, expansion of the infection prevention and control movement. It occurs due to the increase infection occurrences in the country. This increased infectious related diseases impact in the increase health financing in Nigeria with a government contribution to health care of 57.5% above the figure budgeted for. (WHO 2009).

Infected patients are admitted into hospitals and therefore hospitals have become common settings for transmission of disease, in hospital, infected patients are sources of infection transmission to other patients, health care workers and visitors (Yakob, Lamaro & Herok, 2015). Nosocomial infection, also known as hospital acquired infection is one of the leading causes of death and has much economic cost due to increased hospitalization and prognosis (WHO 2009). According to WHO(2009), hospital acquired infection is defined as an infection occurring in a patient during the process of care within a health care facility which was not present or incubating in time of infection.

These infections are occurring more than 48-72 hours after admission and within ten days after hospital discharge due to the admission of the patient with different organs, the hospital environment has become saturated with highly virulent organism namely, Staphylococcus aureus, Streptococcus pyogenes, Escherichia coli, Pseudomonas aeruginosa and Hepatitis viruses that survive in hospital. These organisms cause diseases ranging from minor skin infection to life threatening condition such as sepsis (Yakob et-al, 2015).
All these may depend upon the attitude of the nurse. Attitude is been defined as a set of emotions, beliefs and behavior toward a particular object, person, things or event, in this case the behavior towards nursing practices. In line with this, Oxford Dictionary described attitude as the opinions and feeling that you usually have about something, especially when this is shown in one's behavior: Attitude in this work is use to mean the likes and dislike of individuals or nurses to nursing practice. According to the Oxford Dictionary (2010:80), attitude is the way you think, feel and behave about something, in this case, attitude toward infection prevention and control, despite the knowledge their dirty hands play a significant role in the spread of health care related pathogens and that hand hygiene (HH) decrease the spread of these organism, health care workers adherence with HH is poor (Nejad, Allengranzi & Pittet, 2011:1) who explored the attitude and belief about hand hygiene among pediatrics residents showed that pediatrics residents compliance with HH was influenced by role modeling, balancing hand hygiene with other competing factors and drive for self-protection and personal cares. Furthermore, hands of patient can also carry microbes to other body sites, equipment and staff. Hand hygiene is one of the most effective means of preventing nosocomial infection (Lemass, 2013:18) Assessed the knowledge, attitude and practice of nurses about standard precaution for hospital Acquired infection in teaching hospitals. The result showed that 43% of nurses has a poor attitude 37% had an average attitude and 38% had a good attitude towards standard precautions. Implementation of standard is vital in prevention of transmission of infection to patients and staff (Lemass, 2013:11).
The attitude of nurses may likely affect individual practice in the work place practice is defined as "When you do particular thing often regularly in order to improve your skill or the application or use of an idea, belief or method as opposed to theories relating to it improved nurses' skills in Nursing practice.

In line with this, Oxford dictionary (2010:1148), posited that practice is to do something regularly as part of your normal behavior which in this case infection prevention and control practice. It is therefore important that all health workers strictly adhere to infection control guidelines especially nurses because they spend more time with the impatient. It was surprising that according to National Health Service (NHS) professionals (2013) good hand hygiene is the most important practice in reducing transmission of infections agent as well as health care associated infection. Respiratory hygiene or cough etiquette has been added to standard infection control precaution due to a recent global influenza pandemic. Prevention is the action of stopping something from happening or arising, in this case, prevention of infection of nurses in line with these, a nurse is being described as a person trained to care for the sick or infirm especially in the hospital (Yakob, Lamaro & Henok, 2015). It can generally be seen in the area of the study, that some nurses do not take proper precaution of infection especially where there's a lot of patients around them.

Statement of the Problem

Using their infection control training, nurses play a vital role in creating a culture of patient safety (Boyce, 2013) According to Stones; nurses are on the front line and can take the lead to explain infection control procedures to the patients. According to clinical nurse specialist (CNS) role is distinctively suited to lead the execution of evidence-based quality development action that also lessen cost throughout the health care system. The CNS has an important part to play in organization and transitions of care that result in reducing hospital length of stay, fewer hospital readmissions and fewer nososcomial conditions.

However, Hinkins & Cutter (2014) expressed those nurses do not apply infection prevention and control measures in the hospital setting which is required to ensure patient safety. Lack of knowledge, attitude and practice in infection prevention and control contribute to high rate of hospital acquired infection, uncontrollable nososcomial infection contribute to prolonged stay, morbidity and mortality rate which put stress on health care economy of the country.

If this situation is allowed to continue among nurses it will lead to death of the nurse and there will be no enough nurses personnel to take care of patients, which in turned may lead to death of many individual in the society, reducing productivity in the country. Hence the present study on Knowledge, Attitude and practice of infection prevention and control among nurses in hospital in Jema'a Local government area of Kaduna state.

Research Questions

To guide the study, the following researched question were stated

1. What is the level of knowledge of nurses in prevention of infection among patients?
2. What are the attitudes of nurses on prevention control among patients?
3. What are the practices of nurses on prevention infection among patients?
4. What are the methods uses in prevention of infection among nurses?
5. What are the types of infections among patients?

Methods

The research design adopted for the purpose of this study is the survey research design. According to Abiola (2015), a descriptive research design is a method that describes a given state of affair at a particular time, it seeks to describe a unit in detail, in context and holistically. Descriptive survey research is the most frequently used methods for collecting information and about people's attitudes, opinions, habits and a variety of education issues. This research design is chosen because a generalization of the population can be inferred as it will be expensive for the researcher to study the population as a whole. The population for this study comprise of all Nurse in Jema'a local government area of Kaduna State, it is estimated that the local government are has over 500 nurses working either public or private health facilities. Sample is a portion selected from the population to be studied and generalized to the whole population. For this research work, the sample of nurses was drawn from those that volunteered and were three hundred (300) nurses.

There are five sections to the instrument: section A has seven statements eliciting information about knowledge of nurses on infection prevention, section B sought for information on attitudes of nurses towards infection prevention and has six statements, section C has seven statements which sought for information on the practice of nurse towards infection prevention, section D looked for information on the types of infection among patients and has six statements, section E has six statements which sought for information on methods used in infection prevention.

The criterion mean for attitude was decided by adding all the scores and dividing by 5.

Therefore:

$\frac{5+4+3+2+1}{5} = \frac{15}{5} = 3$

Therefore, any statement with mean less than 3 is said to be a positive attitude and any statement with 3 above is said to be negative attitude.

The questionnaire for this study was validated by nursing department and physical health education department both from University of Jos Plateau State. A copy of the drafted questionnaire was given to them for the purpose of validation in the following areas; content validation, appropriateness of the items, clarity of statements in the instrument, whether or not the items are related to the subject under study. Necessary corrections and observations were made and pre-tested.

In order to determine the reliability of the instrument, 30 people were used to try test the instrument that were not part of the main sample population. The data obtained were coded and analyzed using Cronbach Alpha method to test for internal consistencies of the instrument. It was done using half split method for reliability text and the reliability coefficient of 0.76 was obtained. This indicated that the instrument was reliable and it was used for the main study.

The researcher and a trained research assistant carried out the distribution of the questionnaire. The researcher explained to respondents how to go about responding to the items on the questionnaire before administering it. The questionnaire was retrieved the same day it was administered in order to guide against loss of questionnaire on transit.

Simple percentage method of data analysis was employed to analyze the data. The choice of simple percentage method of data analysis is appropriate because of clarity in the presentation of information thus facilitating the readers understanding.

Table 1: Knowledge of nurse in Infection Prevention N=294

ITEMS	Correct		Incorrect	
	(f)	(%)	(f)	(%)
Health care provided can be infected easily	263	89.46	31	10.54
Infection can lead to death (mortality)	251	85.37	43	14.63
Carelessness is a key factor to infection	261	88.78	33	11.22
Dirty hands can cause a health problem	242	82.31	52	17.69
Careful attitude can prevent infection	235	79.93	59	20.07
Simple practical procedures are good for infection prevention	278	94.56	16	5.44
Joint effort is very necessary in infection prevention	223	75.85	71	24.15

The result in Table 1 shows that all the items had percentage more than fifty percent (50%) which means have very high-level knowledge in all the items.

Table 2: Attitude of Nurses Towards Infection Prevention N=294

S/N	ITEM	$\bar{X}$	VERDICT
	I like wearing clinical gloves	1.4	Positive
2	I like washing my hands	1.4	Positive
3	I like using personal protective equipment	1.6	Positive
4	I like opening windows for ventilation	1.5	Positive
5	I adhere to all information on infection	1.6	Positive
6	I restrict visits to infected wards	1.7	Positive

The results in Table 2 show that; I restrict visits to infected wards ($\bar{X}$ = 1.7), I adhere to all information regarding infection prevention ($\bar{X}$ = 1.6) and I like using personal protective equipment ($\bar{X}$ = 1.6), others are I like opening windows for proper ventilation in wards ($\bar{X}$ = 1.5), I like wearing clinical gloves ($\bar{X}$ = 1.4) and I like washing my hands after operation ($\bar{X}$ = 1.4) were the attitudes of nurses towards infection prevention in Jema'a Local Government Area of Kaduna State.

TABLE 3: Practice of Nurses Towards Infection Prevention N=294

S/N	ITEMS	YES		NO	
		f	%	f	%
1	Using personal protective equipment	289	98.30	5	1.70
2	Using biohazard materials is better	275	93.54	19	6.46
3	Maintaining ventilation in wards	284	96.60	10	3.40
4	I observe standard precaution	284	96.60	10	3.40
5	Consistent use of antiseptic technique	278	94.56	16	5.44
6	Not reusing syringes and needles	287	97.62	7	2.40
7	Disposing sharp surgical objects properly	280	95.24	14	4.76

The results in Table 3 show that using personal protection equipment (masks, gloves) 289 (98.30%), not reusing syringes and needles once it's been used 287 (97.60%), I observe standard precaution in cases of outbreaks 284 (96.60%) and maintaining ventilation in wards by opening windows to decrease infection transmission 284 (96.60%), others are disposing sharp surgical objects properly after use 280 (95.24%), consistent use of antiseptic techniques 278 (94.56%) and using biohazard materials is better for waste management 275 (93.54%) were the practice of nurses towards infection prevention in Jema'a Local Government Area of Kaduna State.

TABLE 4: Types of Infection (Nosocomial) Among Patients N=294

S/N	ITEMS	YES		NO	
		f	%	f	%
1	Central line-associated bloodstream infection	261	88.78	33	11.22
2	Catheter associated urinary tract infection	254	86.40	40	13.60
3	Surgical site infection(SSI)	251	85.37	43	14.63
4	Ventilator associated pneumonia (VAP)	251	85.37	43	14.63
5	Non Ventilator associated hospital acquired pneumonia	258	87.78	36	12.22
6	Gastrointestinal infections	248	84.35	46	15.65

The results in Table 4 show that central line associated bloodstream infection (CLABSI) 261 (88.78%), Non-Ventilator associated hospital acquire pneumonia (NV-HAP) 258 (87.78%) and Catheter associated urinary tract infection (CAUTI) 254 (86.40%). Others are surgical site infection (SSI) 251(85.37%), ventilator associated pneumonia (VAP) 251 (85.37%) and gastrointestinal infection 248 (84.35%) were the types of infection among patients in Jema'a Local Government Area of Kaduna State.

TABLE 5: Methods Used in Infection Prevention N=294

S/N	ITEM	YES		NO	
		f	%	f	%
1	Hand hygiene	287	97.62	7	2.38
2	Alcohol based preparation	273	92.86	21	7.14
3	Routine environment cleaning	290	98.64	4	1.36
4	Use of personal protective equipment	281	95.58	13	4.42
5	Safe use and disposal of sharps	290	98.64	4	1.36
6	Laundry	276	93.88	18	6.12

The results in table 5 shows that routine environmental cleaning 290(98.64%), safe used and disposal of sharps 290(98.64%) and hand hygiene 287 (97.62%), others are use of personal protective equipment 281 (95.58%), laundry 276 (93.88% and alcohol-based preparation 273 (92.86%) were the methods used in infection prevention among nurses in Jema'a Local Government Area of Kaduna State.

DISCUSSION

The results in Table 1 show that nurses have very high knowledge on the prevention of infection in all the items. These results were expected because they have done required training qualified nurses hence the result is not surprise.

These in a line with Hinkin & Cutter (2014) showed that most student have acceptable level of knowledge about infection, hand hygiene, use of gloves and taking appropriate action after being injured by a sharp object but had low level of knowledge about the use of gel and other disinfecting procedure.

The results in Table 2 revealed that; I restrict visits to infected wards ($\bar{\mathbf{X}}$ = 1.7), I adhere to all information regarding infection prevention ($\bar{\mathbf{X}}$ = 1.6), I like using personal protective equipment ($\bar{\mathbf{X}}$ = 1.6), I like opening windows for proper ventilation in the wards ($\bar{\mathbf{X}}$ = 1.5), I like wearing clinical gloves ($\bar{\mathbf{X}}$ = 1.4) and I like washing my hands after operation ($\bar{\mathbf{X}}$ = 1.4). These results were not surprising because most of the nurses are aware of the importance of hygiene and good personal health.

This in line with what Adima, Ezeama, & Asuzu (2010) stressed, that it is to limit the further spread of infection, visiting affected areas should be restricted during the period of an outbreak whether restrictions to visiting pertains only to the affected area or to the whole facility depends on whether affected and unaffected areas are separate enough to prevent further spread of infection, consideration should be given to restricting visitors from bringing food into the facility.

The result in Table 3 shows that using; protective equipment (289, 98.30%), not reusing syringes and needles once it's been used (287,97.62%), I observe standard precautions in cases of outbreaks (284, 96.60%), maintaining ventilation in wards by opening windows to decrease infection transmission (284, 96.60%) and the likes. This was expected because the nurses are aware of infections and have good knowledge of infection prevention and the importance of health practice so as to maintain a good health of their patients and themselves.

The result in line with what Hamad, Abbas, Nostratollah & Ibrahim (2015) stressed that, following standard infection control precautions can minimize the risk of norovirus outbreaks cursed by person to person transmission in any institution or group setting or by an infected handler. This requires a basic level of hygiene measure that can be implemented in any settling regardless of whether a person is infected or not.

The result in Table 4 shows that Central line associated bloodstream infection (261, 88.78%), non-ventilator associated hospital acquired pneumonia (258, 87.78%), catheter associated urinary tract infection (254, 86.40%), surgical site infection (251, 85.37%), ventilator associated pneumonia (251, 85.37%) and the likes were the common types of infections among patient in hospitals, this was not surprising as the nurses have the knowledge of the subject matter under investigation. This is in line with the study conducted in the United State in 2005 shows that most common infection that is healthcare acquired infection in acute hospital settings is pneumonia followed by gastrointestinal infections.

The result in Table 5 shows that routine environmental cleaning 290 (98.64%), safe used and disposal of sharps 290(98.64%) and hand hygiene 287 (97.62%), others are use of personal protective equipment 281 (95.58%), laundry 276 (93.88% and alcohol-based preparation 273 (92.86%) were the methods used in infection prevention. This is in line with a review by NHMRC(2010) stated that hands should be washed systemically by rubbing all surfaces of lathered hands vigorously with a mild liquid hand wash for 10-15 seconds under running water.

Soap and water should be used where possible when washing hands during outbreaks. Skin disinfectants can be used to decontaminate hands when hand washing facilities are not available, alcohol-based hand rubs should not be removed from clinical setting or patients care area during outbreak, rather hand washing should be promoted above the use of alcohol-based hand rubs during outbreaks.

CONCLUSION

It was concluded that the respondents had very high knowledge on the subject matter, with positive attitudes, practice appropriate measures in infection prevention, and used various methods in preventing the menace.

RECOMMENDATIONS

Based on the results, conclusion and discussion of the study, the following recommendations are stated.

1. The results shows that the nurses have very high knowledge on prevention of infection be noted by the Ministry of Health and owners of private health facilities, so as to employ qualified and satisfied nurses in their facilities as it will help to maintain high quality of health care
2. The results that the respondents had positive attitude be noted by hospital administration as that can encourage making the worker environment conductive for nurses to practice the profession with ease for better productive.
3. The results show that nurses use various good method of infection prevention been noted by hospital administration and be encouraged by organizing seminars and workshops on various methods of infection prevention in other to maintain high nursing practice in health facilities

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