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ATTITUDE AND PRACTICES OF NURSES AT OGUN STATE HOSPITALS TOWARDS ASEPTIC TECHNIQUES IN PREVENTION OF CROSS INFECTION

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Abstract

Infections are significant causes of morbidity and mortality among patients in every healthcare institution especially in developing countries. This study was done to determine the nurse's attitude towards aseptic technique, assess the level of practice of aseptic technique and find out if the nurses' attitude affects the practice of aseptic technique among nurses at Ogun State hospitals. A descriptive research

design was used for the study. The population consists of ninety-five nurses working in Ogun State hospitals. The instrument for data collection was validated questionnaires. Data were analysed using descriptive and inferential statistics. Pearson product moment correlation analysis was used to determine relationship between the attitude of respondents and practice of aseptic practice with P-value 0.05 level of significance. Findings shows that all the respondents (100%) practiced aseptic techniques, however, there are variation in the practice as 70.5% of respondents opined to have practiced aseptic techniques sometimes, 22.1% practice it regularly. Furthermore, 82.1% of the respondents used both methylated spirit as an agent for sterilization and boiling technique for sterilization and wore gown, gloves, and mask during nursing procedure and assisting surgery. Based on the results of this study, we concluded that there is no significant relationship between attitude of nurses and practice of aseptic technique at calculated Means of 0.109, greater than P-Value of 0.05. In view of the conclusion of this study, we recommend that hospital management should provide more personal protective materials/equipment, organise and sponsor seminars and workshops to improve aseptic technique practices among nurses in Ogun state hospitals.

Keywords: Aseptic technique, attitude, cross-infection, nurses, Ogun state hospital and practice.

Introduction

Aseptic technique is a procedure used by medical staff to prevent the spread of infection. The goal of aseptic technique is to reach asepsis which means an environment that is free of harmful microorganisms (Berry, 2008). Brian and Whitney (2009) define aseptic technique as a method designed to prevent contamination from microorganisms. It involves applying the strictest rules and utilizing what is known about infection prevention to minimize the risk of experiencing an infection. According to Gwen and Lois (2013), aseptic technique is employed to maximise and maintain sepsis and the absence of pathogenic organisms in the clinical setting. The goals of aseptic technique are to protect the patient from infection and the spread of pathogens. Each healthcare setting has its own set of practices for achieving asepsis. Aseptic techniques are important in preventing hospital acquired infection which in most cases led to morbidity and mortality in the hospitals, and also additional costs due to prolonged hospitalization.

In the last couple of decades, refusal to practice aseptic technique has led to nosocomial infection being reported as a serious public health threat in most hospital in Africa. Despite the nurses' efforts in preventing the spread of infection, it

side effect remains an unwanted episode in the healthcare setting. Healthcare Associated infection (HAIs) are major source of death and disability around the world (WHO, 2005). The incidence of HAIs differs between facilities and areas within facilities, and between countries however, 5-15% of the hospital patient can be affected and HAIs can cause complication in 9-37% of intensive care (ICU) patients in developed Countries (WHO, 2005 & 2009). The provision of health care worldwide is always associated with a potential range of safety problems. Despite advances in healthcare systems, patient and nurse remain vulnerable to unintentional harm in hospitals. Studies have shown the high incidence of healthcare associated infections in developing countries hence, mortality is more prevalence in these countries due to non adherence to practice of aseptic precautions. Improving this negligent attitude of healthcare workers is a main aspect of improving practice of aseptic technique needed for infection control in health care.

In Ogun State Hospitals, it was observed during clinical teaching and routine clinical visits to the hospital wards that nurses' attitude towards adherence to aseptic technique practice was poor especially in carrying out aseptic technique in various wards and units of the hospitals. Aseptic techniques which involves hand washing, provision of water and agents for washing equipments, use of protective devices, general ward cleaning and disinfectant of operational areas with high intravenous theatres and intensive care units were not often seen been demonstrated in the hospitals. Despite nurses' educational background and training and continuous efforts made in the promotion of the practice of aseptic techniques in Ogun-state hospitals, many nurses were observed not performing aseptic technique and this negligent have led to incidences of infections and hospital/health care acquired infection. The prevalence of these infections has also resulted to high mortality rate among patients and health workers in hospitals in Ogun State. Based on the above submission, this study aimed to determine the attitude and practice of aseptic techniques among nurses in selected hospitals in Ogun state

Research Questions:

The following research questions were answered.

1. What is the attitude of nurses towards the use of aseptic technique in prevention of cross infection in Ogun state hospitals?
2. Do nurses practice aseptic technique in prevention of cross infection in Ogun state hospitals?
3. What is the difference between nurses' years of work experience and practice of aseptic technique in Ogun State hospitals?

4. What is the difference between nurses' educational background and practice of aseptic technique in Ogun State hospitals?

Research Hypotheses:

1. There is no significant difference between the nurses' attitude and practice of aseptic technique in Ogun State hospitals?
2. There is no significant difference between nurses' years of experience and their practice of aseptic technique in prevention of cross infection in Ogun state.
3. There is no significant difference between nurses' educational background and their practice of aseptic technique in prevention of cross infection in Ogun state.

Methodology

Descriptive research using cross-sectional design was adopted in assessing the attitude and practice of aseptic technique in prevention of cross infection among nurses in Ogun hospitals. Ogun state is made up of three senatorial districts, with various private and public health institutions. In a cluster of senatorial district, there were 24 secondary health institutions under the state hospital management board, that is, 19 general hospital, 2 community health Hospital, 2 memorial hospitals and 1 maternity hospital located in the various Local Government Area of Ogun state. A multi-stage sampling technique was employed to drawn respondents from cluster of hospitals in each senatorial district of the state. A proportionate sampling method was used to select 95 nurses from male surgical ward, female surgical ward, male medical ward, female medical ward, children ward, theatre and labour ward. The choice of the hospitals was based on various nursing procedures performed to prevent cross-infection in the wards in the state.

The questionnaire was the major instrument used for this study and were made up of section A contained demographic characteristics, section B obtained information on nurses attitude towards aseptic technique use while, section C obtained information about practice of aseptic technique among nurses in Ogun State Hospitals. The instrument for data collection was validated through content and face validity based on research objectives. Reliability of instrument was through test-re- test method on the attitude and practice questions were tested with 20 nurses that are not part of study setting. The reliability test result was 0.65.

An approval was sought in all the selected hospital for gaining permission. The questionnaires were then distributed to nurses and they were encouraged to complete the questionnaire within two or three days after which the answered questionnaires retrieved back. Questionnaire was analysed using the mean of responses. The agreement and disagreement of the respondents with the

statements was determined by comparing their mean values with a central mean of 3, this is achieved by using the average mean of strongly agreed (5), agreed (4), Undecided (3)disagreed (2) and strongly disagreed (1) $:(5+4+3+2+1)/4=3$. A mean of above 3 shows majority of respondents agreeing with the attitude statements while a mean below 3 shows respondents disagreeing with the attitude statement. The collected data was analysed using SPSS software version 20. The analysis was done using the descriptive to answer research questions and inferential statistics of Chi-Square, was used to test the hypothesis.

Results

Table 1: Respondents educational status and years of work experience

Variables	Frequency	Percentages
Level of Education		
RN	14	14.7
RNM	30	31.6
B.NSc	49	51.6
Others	2	2.1
Total	95	100.0
Years of work experience		
5 - 10 years	37	38.9
11- 15 years	38	40.0
16-20 years	15	15.8
21 years and above	5	5.3
Total	95	100.0

Table 1 shows that majority (51.6%) of respondents had B.NSc degree in nursing compared with others, while majority (40.0% & 38.9%) of respondents had put in between 5-15 years' of working experience respectively.

Table 2: Attitudes towards aseptic techniques in the Hospitals

Variables	Agree	Disagree
Aseptic technique is adopted in all nursing procedures	74(77.9%)	21(22.2%)
Aseptic technique are used only at convenient times	7(7.4%)	90(92.6%)
Aseptic technique are only used by Chief Nursing Officers	3(3.2%)	92(96.8%)
The sterile equipment placement has nothing to do with spread of infections	14(14.7%)	81(85.2%)
Splashing of fluids during procedure is one major way of contamination	95(100%)	0(00%)
Maintenance of Aseptic technique determines duration of hospitalization	91(95.8%)	4(3.3%)

Table 2 above shows the attitude of nurses towards aseptic technique adoption aseptic technique in all nursing procedures was positive, while nurses attitudes

toward splashing of fluids during procedure as a way of contamination and aseptic technique determines duration of patient hospitalization were strongly affirmed by most nurses in the selected hospitals in Ogun State

Table 3: Practices of aseptic techniques among nurses in Ogun State Hospitals

Variables	Responses	Freq	%
Do you practice aseptic technique?	Yes	95	100
	No	-	-
Total		95	100
How often do you practice aseptic techniques?	Every time	21	22.1
	Every month	7	7.4
	At my convenient	67	70.5
Total		95	100.0
Do you make use of protective equipment when practicing aseptic technique?	Yes	93	97.9
	No	2	2.1
Total		95	100.0
Do you clean surface areas before starting procedures?	Yes	95	100
	No	-	-
Do you wash your hands before and after any procedure?	Yes	93	97.9
	No	2	2.1
Total		95	100.0
Which type of agent do you use for de-contamination	Liquid soap	43	45.3
	hand sanitizer	38	40.0
	antiseptic lotion	9	9.5
	Others	5	5.3
Total		95	100.0
Do you perform aseptic technique during wound dressing only	Yes	23	24.2
	No	72	75.8
Total		95	100.0
Which type of agent do you use for sterilization	Methylated spirit	78	82.1
	Radiation	3	3.2
	Heat	6	6.3
	Chemicals	8	8.4
Total		95	100.0
What other procedures have you used to ensure sterilization	Boiling	67	70.5
	Jik solution	10	10.5
	Chemicals	1	1.1
	sterile procedure	1	1.1
	Hand sanitizer	1	1.1
	Radiation	1	1.1
	Heat	12	12.6
	Savlon	2	2.1
Total		95	100
Do you wear gown, gloves and mask during assisting surgery or delivery	Yes	78	82.1
	No	17	17.9
Total		95	100.0
A social hand washing should take at least	15 seconds	89	93.7
	5 seconds	4	4.2
	10 seconds	2	2.1
Total		95	100.0

Table 3 shows the practice of the nurses toward aseptic techniques, all the respondents (100%) practiced aseptic techniques, however 70.5% practice aseptic techniques anytime, while 22.1% practice it every time. Furthermore 82.1% of the respondents indicated that the agent they use for sterilization is methylated spirit, as majority of them opined that they mostly uses boiling technique for sterilization and equal number of the respondents claimed they wore gown, gloves, and mask as protective material during assisting surgery or delivery.

Hypotheses

H₀₁: there is no significant difference between nurses' educational background and their practice of aseptic technique.

Table 4: Chi-Square Tests difference between the nurses' educational background and their practice of aseptic technique.

	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	11.507 ^a	6	.074
Likelihood Ratio	10.525	6	.104
Linear-by-Linear Association	.021	1	.884
N of Valid Cases	95		

From the cross tabulation above, shows P-value = 0.074 greater than $\alpha=0.05$ hereby rejecting the **H₀₁**. This indicates that there is no significant difference between the nurses educational status and practice of aseptic technique, which implies that irrespective of nurses level of education, nurse practice aseptic techniques anytime they like.

H₀₂: There is no significant difference between nurses' years of work experience and practice of aseptic technique in the hospitals

Table 5: Chi-Square Tests indicating differences between nurses' years of experience and the practice of aseptic technique in Ogun State Hospitals

	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	2.834 ^a	6	.829
Likelihood Ratio	3.217	6	.781
Linear-by-Linear Association	1.758	1	.185
N of Valid Cases	95		

The tables above shows higher level of work experience, against the fewer practice of aseptic techniques with P value = 0.829 greater than $\alpha=0.05$ with a df 6

rejecting the H_{02} , this implies that there is significant difference between years of working experience and practice of aseptic technique among nurses in Ogun State hospitals. This mean that nurses with more years of work experience do not practice of aseptic techniques.

H_{03} : There would be no significant difference between nurses attitude and practice of aseptic technique in Ogun State Hospitals

Table 6: Chi-Square test indicating differences between nurse's attitude and practice of aseptic technique in Ogun State Hospitals

	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	6.044 ^a	3	.109
Likelihood Ratio	5.632	3	.131
Linear-by-Linear Association	1.945	1	.163
N of Valid Cases	95		

The table above showed P-value of 0.109 greater than $\alpha=.05$, the H_{01} is hereby rejected. This indicates that there is no significant difference between the attitude of nurse and practice of aseptic practice.

Discussion

This study aimed to determine practice of aseptic techniques in the prevention of cross-infection among nurses in Ogun state hospitals. The study revealed that majority nurses participated in the study had B.NSc degree in nursing who have put in 5-15 years' of working experience in the hospitals. In this study one would expect that nurses with higher qualification and who had put in service an average mean of 7 years would be consistent in the practice of aseptic technique in the prevention of cross-infection in the hospitals of Ogun state. Unfortunately, this study showed that there was no significant difference between the educational status of nurses and practice of aseptic technique in the state hospitals. This result is contrary to the findings of Pankaj, Phillip, & Wilson (2014), who in their study assess the attitude and practice of aseptic technique applied in nursing practice among staff nurses working in selected hospital, revealed that the overall practices mean score of those who practice aseptic technique with higher educational background was 15.08 ± 4.08 (75.40%) of the total respondents. This implies that the staff nurses maintain very good practices of aseptic techniques applied in nursing practice.

Although, majority of nurses in this study claimed to have a positive attitude towards aseptic technique especially in carrying out all nursing procedures, but they

agreed that their attitudes toward the use of aseptic technique from splashing of fluids during procedure as a way of protecting themselves and the patients from contamination was inadequate in the selected hospitals in Ogun State. This finding supported the study carried out by Unsworth (2011) at the Northumbria University, UK, on the knowledge, attitude and practice of aseptic techniques among nurses. The results show that 85.5% of nurses were knowledgeable and almost all nurses had the right attitude and practice towards aseptic technique. Contrary to this study, Aaron (2015) study in Warri, Delta state, on the practice of aseptic techniques among nurses, shows that 99% of nurses in university Teaching hospital Warri have high knowledge about aseptic techniques and they practice it effectively.

In the practice of aseptic technique this study revealed that almost all nurses practices aseptic technique. However, there are varying opinions as to consistency and when they practice aseptic technique in the hospitals, about 70.5% practice aseptic techniques anytime against 22.1% practice it every time. Furthermore 82.1% of nurses indicated that the agent they use for sterilization is methylated spirit, and the use of boiling technique for sterilization and wore gown, gloves, and mask as protective material during assisting surgery or delivery. The results is in agreement with the study carried out by Jennifer (2010), and Faulkner, (2013) in their studies on attitude of nurses towards aseptic techniques in Netherlands institute and teaching hospital among nurses, revealed that 92% of nurses effectively practice aseptic technique and 67% nurses had good attitude towards aseptic technique use. This study further agreed with the study conducted by Peterhams (2014) in an Indonesian showed that 456 (77%) of nurses had the right attitude towards aseptic technique and 63% effectively practice aseptic technique regularly.

Implication for nursing practice

Health caregiver especially nurses should intensify efforts in ensuring regular practice of aseptic technique to reduce mortality rates due to nosocomial infection. This study has brought into light that the best means to help in the elimination of this practice is through organising more seminars to encourage the nurses to continue the practice of aseptic technique. This suggests need for nurses to collaborate with all stakeholders involved in the care of patients in the ward.

Conclusion

This study conducted to assess the attitude and of practice of aseptic technique among staff nurses in Ogun State hospitals concluded that there is no significant difference between the nurses educational status, years of work experience and the attitude of nurses and practice of aseptic technique. Although

the study revealed a right attitude towards a good practice of aseptic technique among nurses, however there is still need for nurses to be more educated on this topic, this will go a long way in ensuring provisions of quality healthcare in the hospitals in Ogun State.

Recommendations

Based on the conclusion of this study, the following recommendations were made:

1. Nurses should attend more seminars on aseptic technique to be more acquainted with new ideas in practice of aseptic technique to improve the practice of aseptic technique in the hospitals in Ogun State.
2. The hospital management should provide necessary materials for aseptic procedures such as protective devices like gloves, apron, goggle and ensure appropriate hand washing to minimise the transfer of infections from the nurse to the patients and from the patients to the nurses.
3. The hospital management should ensure regular practice of aseptic technique in the wards and units of the hospitals right from the first time of assumption of office to bridge the gap between nurse years of experience and practice of aseptic technique.
4. Nurses should ensure compliance to the rule of aseptic technique in the wards and units they work to prevent cross-infection from patient to nurse and vis-versa.

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