Available online at http://www.journalijdr.com

IJDR

International Journal of
DEVELOPMENT RESEARCH

ISSN: 2230-9926

International Journal of Development Research
Vol. 07, Issue, 01, pp.11292-11296, January, 2017

Full Length Research Article

INFECTION CONTROL PRACTICES AMONG HEALTH CARE PROVIDERS IN SECONDARY HEALTH FACILITY IN CALABAR, CROSS RIVER STATE, NIGERIA

***Ojong, Idang Neji, Mgbekem, Mary Achi and Uka, Victoria Kalu**

Department of Nursing Science, Faculty of Allied Medical Sciences, College of Medical Sciences, University of Calabar, Pmb 1115, Calabar, Cross River State, Nigeria

ARTICLE INFO

Article History:

Received 19th October, 2016
Received in revised form
24th November, 2016
Accepted 02nd December, 2016
Published online 30th January, 2017

Key Words:

Infection control,
Knowledge, Practice,
Health care providers.

ABSTRACT

It is common to discover that many patients admitted into the hospital for certain pathological or physiological disorders would end up manifesting one infectious disorder or another. Nosocomial infection is associated with increased morbidity and mortality and medical cost. This study was aimed at assessing knowledge and practice of standard infection control among health care providers in secondary health facility in Calabar, Cross River State, Nigeria. The study adopted a descriptive survey. A convenient sampling technique was used to select 132 health care providers who were willing to Participate in the study and also offer direct nursing care to patients. Instruments for data collection was a self developed questionnaire and observational checklist. Data was analyzed using descriptive statistics, while hypothesis was tested using chi-square x^2 test analysis. Result revealed that 102 (77.3%) respondents had good knowledge and 98 (74.2%) respondents practiced infection control precaution. There was a significant association between health care providers' knowledge of standard precautions and infection control, when the x^2 calculated of 46.19 was greater than the x^2 critical of 3.841. Based on the above, the researchers recommended regular programming of workshops and seminars on infection control practices for health care providers in the study area.

INTRODUCTION

Health care settings are environment where both infected persons and person at increased risk of infection congregate. Patients with infection or carriers of pathogens microorganisms admitted to hospital are potential sources of infection and staff. Patients who become infected in the hospital are further source of infection. Crowded conditions within the hospital, frequent transfer of patients from one unit to another, and concentration of patients highly susceptive to infection in one area (e.g. newborn infants, burn patients, intensive care patients) all contribute to the development of nosocomial infections (Siegel, Rinehart and Jackson, 2010). Prevention of nosocomial infections is the responsibility of all individuals and service providing health care. Everyone must work cooperatively to reduce the risk of infection for patients and staff. This includes personnel, direct patient care, management, physical plant, provision of materials and products, and training of health workers. Prevention of nosocomial infections requires an integrated monitored programme which includes the following key components.

****Corresponding author: Ojong, Idang Neji,***
Department of Nursing Science, Faculty of Allied Medical Sciences, College of Medical Sciences, University of Calabar, Pmb 1115, Calabar, Cross River State, Nigeria.

- Limiting transmission of organisms between patients in direct care through adequate hand washing and glove use and appropriate aseptic practices, isolation strategies, sterilization and disinfection practice, and laundry (Oweira and Mascarenhas, 2010).
- Controlling environment risk for infection.
- Protecting patient with appropriate use of prophylactic antimicrobial
- Surveillance of infection, identifying and controlling outbreaks.
- Enhancing staff patients care practices, and continuing staff education (WHO, 2010).

In a study conducted by Nordin and Musa (2009) on infection control and sterile technique principles in the operating room complex with regards to nurses knowledge regarding the transmission of nosocomial infection in Malaysia. The result shows that only 11 registered nurses (31%) of the participants knew how nosocomial infection could be transmitted and 24 (69%) did not. This implied that there is lack of knowledge regarding the transmission of nosocomial infection. Nosocomial infections occurs when there is a breach in infection control practices which facilitate the transmission of infection from patients to healthcare workers, from one patient

to another as well as from healthcare workers to the patients. Therefore, it is important to make the personnel aware of how nosocomial infection can be transmitted inorder to prevent infection from occurring (Graven and Hirnle, 2004, Ojong and Etifit, 2010). In the study by Osborne (2013) on nurses knowledge regarding the disposal of sharps from an infected source in South East Nigeria the result showed that only 7 (20%) of the participants knew the correct manner of disposing sharps from a contaminated or infected patient. According to Asien and Shobowale (2008) the correct manner is to dispose of sharps in a color coded, puncture resistant and leak-proof container. If the patient was contaminated, the sharps (blades and needles) should first be autoclaved and then discarded into the container. The sharp containers are usually kept inside the operating room and only replaced when container is ¾ full. Twenty seven (77%) of the participants in Kim Malan (2009) study on non-adherence to standard precaution in Kwara disposed of their sharp container that remained in the operating room where other surgical procedures were still performed, which could also contribute to the transmission of infection. One (3%) of the participant disposed contaminated sharps into a separate container designed for septic sharps. Recommendations hold that contaminated sharp should first be autoclaved and then disposed into the sharps bin in the operating room.

According to Tobin, Asogun, Odia and Ehidiamhen (2013), in their work to assessed the knowledge and practice of infection control among health workers in a tertiary hospital in Edo State, Nigeria, it was reported that although knowledge of standard precautions was high, amongst some classes of health workers (particularly the doctors) some categories like the porters demonstrated low knowledge, but interested in practice of hand washing. The porters were found to show better hand hygiene than other health workers. This of course might be related to their greater perception of risk and the fact that their work often necessitates handling waste, thus hand washing becomes needful. Poor needle handling (recapping, manipulation and detaching) was practiced by a significant number of respondents. Similarly, Ojong, Etim, Nlumanze and Akpan (2014) in their work on the practised of hand washing for the prevention of nosocomial infections among nurses in General Hospital Ikot Ekpene, Akwa Ibom State, found that although majority of the nurses (82.4%) have good knowledge of hand washing, but practically only 42.9% of the respondents always practiced meticulous hand washing. 34.3% do it occasionally and 23.5% never practiced hand washing. The percentage of nurses that never practised hand washing was enough to worry about as there is need for them to imbibe its practice to forestall risk of transmitting infection from one patient to another. In the secondary health facility in Calabar, it was observed that the level of infection control practices among nurses was poor in standard, gloves and face masks as well as other barriers were not sufficiently used, hand washing between patients was meticulously practiced, while patient care equipment and environment control measures called for observation. This may have resulted to, among other problems, breakdown of surgical wounds, imposing unnecessarily long stay in the hospital and incurring huge hospital costs. Standard precautions recognize that transmission can occur from patients to providers and from providers to patients and apply to all patients and providers, regardless of their disease status. The implication here is that the situation may favour the acquisition and spread of nosocomial infection. This is what necessitated the study.

Specific Objective

This work is intended to;

- Determine the level of knowledge of standard infection control practice among nurses in secondary health facility in Calabar, Cross River State.
- Assess the practice of standard infection control practices among the nurses in secondary health facility in Calabar, Cross River State.

Hypothesis

There is no significant association between the health care providers knowledge of standard infection control and infection control practices.

MATERIALS AND METHODS

Design: A descriptive survey design was considered appropriate for the study.

Research setting: The researcher carried out the study in all the wards in the hospital offering direct patients care. The hospital is situated in Calabar municipality. It is a secondary health institution established on the 7th of November, 1991 with one hundred and eighty beds. The hospital renders surgical, medical, maternal and child health services, laboratory and radiography services.

Participant: The target population consisted of all the one hundred and thirty two (132) health care providers that were not on annual leave covering morning, evening and night shifts. The inclusion criteria include willingness to participate, physical presence and licensed to practiced nursing care. Exclusion criteria include nurses not directly rendering services to the patient.

Instrument: A self developed structured questionnaire and observational checklist were used to obtained data from the respondents. A measure of its stability overtime was assessed using a test-retest reliability which yielded a reliability coefficient of 0.82 after an interval of two weeks.

Data analysis: Data generated was analyzed using descriptive statistics, while hypothesis was tested using contingency chi-square test analysis.

Administration design: An official permission was obtained from the institution, a written and informed consent was obtained from the subjects who participated in the study.

Human right and ethical considerations: The subjects were chosen according to criteria and questionnaire was administered after informed consent was obtained to participate in the study. Thereafter, the purpose of the study was explained to all participants and their consent obtained. Anonymity was maintained and it was strictly confidential.

RESULTS

Table 1 above shows that 110 (83.3%) accepted that "Hospital acquired infection occurs in a patient in a hospital or other health care facility in which the infection was not present or incubating at the time of admission while 22 (16.7%) said no.

108 (81.8%) respondents accepted that "Crowded conditions in the hospital, frequent transfer of patient from one unit to the other and concentration and patients highly susceptible to infection in one are contribute to nasocomial infection and 24 (18.2%) said no. 112 (84.8%) agreed that "hand washing is the most effective and cheapest infection control practice" while 20 (15.2%) disagree.

respondents had poor knowledge of standard infection control practices in the hospital. Table 3 showed distribution of data collected from 132 respondents from secondary health facility in Calabar. Majority 80 (60.6%) respondent practiced hand washing before and after patient contact 52(39.4%) did not. In use of sterile gloves for wound dressing all the respondents practice it.

Table 1. Percentage distribution of respondents' knowledge of standard infection control practices (n=132)

S/N	Questions	Response	Frequency	Percentage (%)
1.	Hospital acquired infection occurs in a patient in a hospital or other health care facility in whom the infection was not present or incubating at time of admission.	Yes	110	83.3
		No	22	16.7
		Total	132	100
2.	Autoclaving is the most reliable method of sterilization.	Yes	125	94.7
		No	7	5.3
		Total	132	100
3.	Do crowded conditions in the hospital, frequent transfer of patients from one unit to another and concentration of patients highly susceptible to infection in one area contribute to spread of nocosomial infection?	Yes	108	81.8
		No	24	18.2
		Total	132	100
4.	Can disinfection ensure destruction of all microbes and their spores?	Yes	55	41.7
		No	77	58.3
		Total	132	100
5.	Is hand washing the most effective and cheapest infection control practice?			
		Yes	112	84.8
		No	20	15.2
		Total	132	100

Table 2. Summary of respondents' knowledge of standard infection control practices in secondary health facility in Calabar (n=132)

Variable	Frequency	Percentage (%)
Good knowledge	102	77.3
Poor knowledge	30	22.7
Total	132	100

Table 3. Practice of standard infection control in secondary health facility in Calabar (n=132)

Observation	Yes	No	Total
Wash your hands before and after patient contact.	80(60.6%)	52(39.4%)	132(100%)
Use sterile gloves for wound dressing.	132(100%)	-	132(100%)
Wear mask when dressing wound	120(90.9)	12(9.1%)	132(100%)
Handle and dispose soiled dressing into yellow-coded leak proof well labeled bag.	62(47%)	70(53%)	132(100%)

Table 4. Summary of the respondents' practice of standard infection control practices in secondary health facility in Calabar

Variable	Frequency	Percentage (%)
Practiced infection control precautions	98	74.2
Does not practice infection control precautions	34	25.8
Total	132	100

Table 5. Showing contingency chi-square analysis of the relationship between health care providers knowledge of standard precaution control and practice of injection control (n=132)

Knowledge of infections control measure	Practice of injection control measures					
	Practiced of infection control	Does not practice infection control measure	Total	Df	Cal X^2	Crit X^2
Good knowledge	90(75.7)	12(26.3)	102			
Poor knowledge	8(22.3)	22(7.7)	30	1		
Total	98	34	132		46.19*	3.841

Significant at 0.05level; df = 1; X^2 calculated 46.19; Crit X^2 = 3.841

The table further shows that 55(41.7%) respondents accepted that "with disinfection, one is sure of destroying all microbes and their spores" while 77 (58.3%) refute this option. Also, 125 (94.7%) respondents agreed that autoclaving is the most reliable method of sterilization while 7 (5.3%) disagreed. The results presented in table 2 above showed summary of respondents' knowledge of standard infection control practices in secondary health facility in Calabar. Majority 102 (77.3%) respondents had good knowledge, while 30 (22.7%)

One hundred and twenty (90.9%) respondents wore mask when dressing wounds while 12(9.1%) did not. Sixty two (47%) respondents handled and disposed soiled dressing into yellow-coded leak proof well labeled bag. Table 4 above showed the summary of respondents' practice of infections control in secondary health facility in Calabar, Cross River State. Out of the 132 respondents in the study, 98 (74.2%) practiced standard infection control practices while 34 (25.8%) respondents did not. The result as presented above showed a statistical association between health care providers'

knowledge of standard precaution control and practice of infection control when the calculated X^2 of 46.19 was greater than the critical X^2 of 3.841 with 1 degree of freedom. With this result, the null hypothesis was rejected.

DISCUSSION

The result as presented in Table 1, revealed that majority of the respondents had good knowledge of standard infection control as they attest that crowded condition in the hospital, frequent transfer of patients highly susceptible to infection in one area (e.g intensive care unit) would contribute to spread of nosocomial infection. This high level of knowledge is in contrast with the positions of Ojong *et al*., (2014), who adduced that despite detailed guidelines, in many developing countries, knowledge of standard precautions is grossly poor. In the same vein study by Kim Malan (2009) also revealed lack of knowledge regarding the transmission of nosocomial infection. The evidence of good knowledge of hospital acquired infections is in line with findings of Tobin *et al* (2013), who recorded high awareness of standard precautions and Ojong *et al*., (2014) who found good knowledge displayed by the nurses in the study site in hand washing for prevention of nosocomial infection. Findings presented in table 3 also conveyed that majority of the nurses claimed that hand washing after procedure is more important than washing hands before procedure and more still with recap needles immediately after use. This is contrary to the opinion of Graven and Hirnle (2004) and Ojong and Etifit (2010) who assert that used needles should not be recapped instead, dropped into a puncture resistant container placed near them and, that hands should be washed before and after every procedure. Not washing hands before procedure reaffirm the allegation that the most important mechanism of spread of pathogens is via the hands of health care givers relatives and friends of patients (Mayank *et al*., 2009). The display of poor knowledge in the later also goes to boost the assertion of Ojong *et al* (2014) and Manyake *et al* (2009), that standard precautions are not only insufficiently established and inappropriately established an inappropriately applied but only selectively adhered to.

Finding in Table 4 revealed that majority of the health care providers practised infection control procedure. The selective demonstration of good practice in some aspects of practice and obvious poor practice in others give credence to above assertions that "…standard precautions are not only insufficiently established, inappropriately applied but also only selectively adhered to". The demonstration of good practice in hand washing however, is in contrast to previous findings by Ojong *et al* (2014), who observed the practice to be poor, however the concern in that study was rather on quality hand washing practice. The findings are also in contrast with the outcome of a survey carried out by Kim Malam (2009) who found that many health workers do not follow standard precautions approximately one-third was reported not wearing gloves during invasive procedures, one third would recap needle after use and one third not always wash their hands after patients care. The null hypothesis was rejected and the alternative hypothesis accepted. Hence, the conclusion that "there is a significant relationship between nurses" knowledge of standard infection control and practice of infection control precautions. This argues with findings from studies conducted by Tobin, *et al*., (2013) that the practice of hand washing by most respondents was in line with their high awareness of standard precautions.

Conclusion

Based on the findings, it is concluded that health care providers in secondary health care facility in Calabar have a substantial knowledge of standard infection control and also shows a high level of commitment to various practices of infection control precautions. The study suggests further studies in tertiary, health care facility in the state for comparison.

Recommendations

The researchers proffer the following recommendations:

- Regular workshops and seminars attendance which should be mandatory for all health care providers in Calabar, Cross River State.
- Materials and equipments needed for infection control practices should not only be available in the hospital but distributed adequately to the different wards/units for use by health care providers.
- Guidelines on standard infection control and precautions should be pasted in all the units so as to enable the health care providers to acquaint themselves with the guidelines.

REFERENCES

Asien, A. T. and Shobowale, M. O. 2008. Health care workers knowledge on HW/AD Universal precaution and attitude towards PLWHA in Benin City, Nigeria. *Journal of Clinical Practices* 8(2) 74-82.

Etifit, R. E. and Ojong, I. N. 2010. Knowledge and practice of safe injection among nurses in tertiary institution in Cross River State. *Global Journal of Medical Sciences,* 9(1), 5-11.

Graven, R. F. and Hurnle, C. J. 2004. Fundamentals of nursing human health and function (5th ed.) Lippincott, Philadelphian

Kim Malan, I. J. 2009. Incidence of non adherence with standard precautions guidelines among-based health care workers- Journal of medicine, 19, 726-731.

Mayanke, Wazin and Almos, 2009. Practice of standard precaution among health are workers in Tertiary holding in northern ind, *J. med. Sc.,* 62(7), 291-294.

Nordin, R. C. and Musa, I. 2009. The prevalence of and factors related to compliance with glove use among nurse in hospital in Malaysia. *South East Asian J. Tropmed* 32(3), 632-642.

Ojong, I. N., Etim, M. I., Nlumanze, F. F. and Akpan, M. I. 2014. The practice of hand washing for the prevention of Nosocomial infections among Nurse in General Hospital, Ikot Ekpene, Akwa Ibom State, Nigeria. *Archieves of Applied Science Research 2014*, 6(1), 97-101.

Osborne, S. 2013 Influence of compliance with standard precaution among operating room nurses in Enugu. *A Journal of infection control,* 31 (7), 415-423 pubmed.

Oweira, A. C. and Mascarenhas, O. 2010. Contact precautions as intensive factors for professional adherence ESC Enterm 44(1). 161-165, pub med abstract.

Seigel J.D, Rhinehart E. Jackson M. 2010. Guidelines for isolation controls preventing transmission of infections in health care setting the 2010 www cdd.gow//ncidod/dhg/p/gi-isolation. Html.

Tobin, E. A., Asogun, D. A. Odia, I. and Ehidiamhen, 2013. Knowledge practice of infection control among health workers in a tertiary hospital in Edo State, Nigeria. *Direct Research Journals of Health and Pathology,* 1(2), 20-27.

World Health Organization, 2010. prevention of hospital acquired infection WHP CDS.ABR Http://www WHO.INT/ERE.

****