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ABSUMSAJ

Research Article

NOSOCOMIAL INFECTIONS: KNOWLEDGE, ATTITUDE AND PRACTICE OF STANDARD PRECAUTIONS AMONG CLINICAL STUDENTS IN ABIA STATE UNIVERSITY TEACHING HOSPITAL (ABSUTH)

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ABSTRACT

Background: Nosocomial infections are newly contracted infections that are gotten in the hospital either as a patient or a hospital staff. It causes increase in morbidity and mortality affect both developed and developing countries. Basic knowledge of infection control measures is necessary to reduce the rate of hospital acquired infections especially as Clinical students.

Aims and Objectives: The aim of this study was to assess the knowledge, attitude and practice among clinical students in Abia State University Teaching Hospital (ABSUTH) Aba on the practice of standard precaution.

Materials and Methods: This was a cross-sectional study conducted among 419 clinical students from Abia State University Teaching Hospital, ABSUTH, Aba. Research instruments were structured, self-administered and pretested questionnaires. Data collected were analyzed using Statistical Package for Social Sciences (SPSS) version 20.0

Result: About 76.4% were medical students, 16.5% were medical laboratory students and 7.2% were nursing students with majority (62.5%) in 5th year. 85.9% of the students had heard of nosocomial infection and 76.25% of these students had good knowledge of nosocomial infection. The attitude and practice of standard precautions among clinical students were 59.1% and 51.7% respectively. Participants who were in fifth year or higher, were ***13*** times *(OR13.063)* more likely to have knowledge of Nosocomial Infections compared to those who were below 500 level.

Conclusion: Findings from this study indicates that majority of the clinical students had good knowledge of nosocomial infection though with less attitude and practice of the standard precautions. Therefore, there is a need for proper sensitization and implementation on hospital acquired infection prevention and control especially among c students in their early clinical years.

Keywords: Nosocomial, infection, knowledge, attitude, practice.

INTRODUCTION

Nosocomial infections also known as "Hospital-acquired infections" (HAIs) are newly contracted infections that are gotten in the hospital. It can be acquired from health care workers, hospital equipment, patients or interventional procedures. A nosocomial infection can also be defined as an

infection acquired in hospital by a patient who was admitted for a reason other than that infection[1]. For a HAI, the infection must occur; up to 48 hours after hospital admission, up to 3 days after discharge, up to 30 days after an operation in a healthcare facility when someone was admitted for reasons other than the infection. HAIs affect both developed and developing countries and constitute "major causes of death and increased morbidity among hospitalized patients".[2]
Nosocomial infections have been recognized as a problem affecting the quality of health care and a principal source of adverse healthcare outcomes. It has been documented in the literature that within the realm of patient safety, these infections have serious impact. Increased hospital stay days, increased costs of healthcare, economic hardship to patients and their families and even deaths, are among the many negative outcomes.[3]

Findings from several epidemiological studies reveal that healthcare workers such as Physicians, Dentists and Nurses are implicated in the transmission of nosocomial infections. It has also been reported that transmission frequently occurs during the performance of medical procedures, when these healthcare workers fail to follow aseptic precautions. Thus, non-compliance with recommended guidelines by healthcare workers expose patients to an abundance of pathogens.[4-5]

It is estimated that one out of every 20 hospitalized patients will contract a health care-associated infection (HCAI). The risk is substantial not only for patients, but also for health care workers (HCWs), including clinical students. Hence, it is essential for clinical students to have adequate knowledge about infection prevention and control (IPC) and to incorporate these in the professional training of clinical students.[6]

This study will identify the available gaps and deficiencies in the standard precaution practice among these students and the result from the study could be used for the planning of health education intervention program. It will also provide reference material for the academic society as well as for further research.

MATERIALS AND METHODS

This was a descriptive, cross-sectional study carried out at Abia State University Teaching Hospital Aba. Self-administered questionnaire was used in obtaining information from consenting

participants. Information was collected on the knowledge, attitude and practices of Clinical students on nosocomial infections and standard precautions. Questionnaires were randomly administered to clinical students. (how many questionnaires were distributed? What was the sample size? before writing the number that was retrieved) Of all the questionnaires retrieved, only 419 that were correctly filled were included in the study. Data were analyzed using Statistical Package for Social Science (SPSS) software.

RESULTS

This is the findings of the study of 419 Clinical Students in Abia State University Teaching Hospital, Aba, on nosocomial infection; knowledge, attitude and practice of standard precaution.

Table 1: Socio-demographic data of respondents

Variable	**Frequency** (N=419)	**Percentage (%)**
Age Group		
25 or less	**289**	**69.0**
26 -30 years	109	26.0
31-35 years	14	3.3
36 and above	7	1.7

Table 1 above shows the socio-demographic variables of the respondents. Majority of the study participants (69.0%) were in the age bracket of 25 or less, with the mean age of 21±3years. There were more females (about 239 respondents, 57.0%).

TABLE 2: KNOWLEDGE OF NOSOCOMIAL INFECTIONS

Variable		**Frequency** (N=419)	**Percentage %**
Have you heard of nosocomial (Hospital Acquired) infections before?	No	59	14.1
	Yes	360	85.9
Source of information on nosocomial infection? (n=360**)**	Social media	42	11.7
	Classroom, Conference or Clinical Posting	292	81.1
	Fellow students	20	5.6
	Others	6	1.7
What do you understand by nosocomial infections?	Newly contracted infections gotten in the hospital	336	93.3
	Sexually transmitted infections	14	3.9
	Chronic diseases like hypertension etc.	2	0.6
	All of the above	88	2.2
Which of the following is a source of nosocomial infections?	Cigarette smoke	7	1.9
	Lead poisoning	12	3.3
	Unclean hands	321	89.2
	Use of Condoms	4	1.1
	I don't Know	6	4.4
Which of the following is a standard precaution for nosocomial infection?	Good illumination	11	3.1
	Good haircut	17	4.7
	Hand hygiene	288	80.0
	Tight hospital security	3	0.8
	I don't Know	41	11.4

Out of 419 participants, 360 (85.9%) have heard of nosocomial infection. A higher proportion of them 292 (81.1%) received their information from classroom, conference or clinical posting. A good number of the respondents 336 (93.3%) understood nosocomial infection to be newly contracted infections gotten in the hospital, 321, (89.2%) respondents deemed nosocomial infection to be gotten from unclean hands while a large quantity of respondents (288, 80.0%) revealed that hand hygiene is a standard precaution for nosocomial infection.

TABLE 3: ATTITUDE TOWARDS PRECAUTIONARY MEASURES

Question	Strongly Disagree	Disagree	Undecided	Agree	Strongly agree
After examining each patient, proper hand hygiene should be observed	40(9.5)	11(2.6)	12(2.9)	76(18.1)	280(66.8)
It is necessary to wear gloves when examining patients	32(7.6)	12(2.9)	18(4.3)	103(24.6)	254(60.6)
Ward suits should be washed daily after its use in the clinic	27(6.4)	15(3.6)	17(4.1)	151(36)	209(49.9)

Concerning attitude towards precautionary measures, a higher number of the participants 280(66.8%) strongly agreed that after examining each patient proper hand hygiene should be observed. Another good number of respondents (254, 60.6%) deemed it necessary to wear gloves when examining patients. About half of the respondents (209, 49.9%) also agreed that ward suits should be washed daily after its use in the clinic.

TABLE 4: PRACTICE OF STANDARD PRECAUTIONARY MEASURES TOWARDS NOSOCOMIAL INFECTIONS

Variable		Frequency (N=419)	Percentage (%)
How often do you use hand sanitizer in the hospital?	After seeing each patient	220	52.5
	When out of the hospital	61	14.6
	Once in a week	23	5.5
	Rarely	115	27.4
How often do you wash your hands in the hospital?	After seeing each patient	222	53.0
	When out of the hospital	104	24.8
	Once in a week	13	**3.1**
	Rarely	80	**19.1**
Do you wash your ward suit at the end of each clinical session?	No	213	50.8
	Yes	206	49.2
Is the use of face mask a regular practice for you when in the hospital?	No	207	49.4
	Yes	212	50.6

On the level of practice of standard precaution, 220 (52.5%) out of 419 respondents confirmed that they use hand sanitizer after seeing each patient while222 (53.0%) respondents revealed that they wash their hands after seeing each patient. A higher number of the respondents (213, 50.8%) do not wash their ward suits at the end of each clinical session. A good number of the respondents 212(50.6%) uses face mask regularly while in the hospital.

TABLE 5: MULTIPLE LOGISTIC REGRESSION OF SIGNIFICANT VARIABLES AFFECTING KNOWLEDGE OF NOSOCOMIAL INFECTIONS

Independent Variables	**Knowledge of Nosocomial Infection**					
	Yes (N=360)	**No** (N=59)	**Crude OR**	**P-value**	**OR (Odds Ratio)**	**P-value**
Discipline						
Nursing/Med Lab	92	7	2.55(1.12-5.81)	**0.026**	0.621(0.253 - 1.255)	0.299
Medical Students	268	52				
Level of Study						
Below 5th Year	63	44	13.82(7.25-26.38)	**0.001**	13.063 (6.807 -25.069)	**0.00***
5th Year or Higher	297	15				
Constant		0.780	0.085	2.182	2.182	
***** (significant at p<0.05)***						

Table 5, shows odds ratios for predictors of knowledge of nosocomial infection from univariate and multivariate logistic regression at 95% confidence interval (C.I.). At univariate logistic regression, level of study and discipline were found to be statistically significant. On adjustment during multiple logistic regression analysis, only level of study was statistically significant. Those who were in 5th year or higher, were ***13*** *(OR13.063) times* more likely to have knowledge of nosocomial Infections compared to those who were below 500 level.

DISCUSSION

Majority of the study participants in this study (69.0%) were in the age bracket of 25 or less, with the mean age of 21±3years. It is comparable to a research conducted in Nigeria where 64.9% of majority of respondents were within the age range of 20-24 years.[7] This study revealed that 360 (85.9%) of the participants have heard of nosocomial infection. This is similar to a study conducted in Bareilly where 205 (82%) were aware of hospital acquired infection. [8]

Findings from this study shows that 336 (93.3%) understands what nosocomial infection is all about, out of which 292(81.1%) participants got their information from classroom, conferences or clinical postings.

The overall average of clinical student's knowledge on nosocomial infections from our study is 76.25%. Lower results of 68.34% and 43% was obtained from a study amongst medical students in Babylon and nursing students in Zabol city Iran respectively.[9,10] It is slightly lower than the 96% of students that had a high knowledge of nosocomial infection in Nigeria.[11]

The higher prevalence in the knowledge of nosocomial infection recorded from our study may be attributed to the coronavirus pandemic of 2020. This brought an increase in awareness of infectious diseases especially those that health workers are exposed to including covid-19.

The attitude towards reducing the risk of transmitting nosocomial infections from our study showed a mean score of 59.1%. This is low compared to a study in University of Babylon where results showed 69.38%.[9] Lower prevalence of 47% and 36% were gotten from studies carried out at Teaching hospitals in Zabol city, Iran and the University of Gondar respectively.[10,12]

With regards to practice of standard precautions against nosocomial infection, our study revealed that 212 (51.7%) use protective materials when in contact with patients. A lower result of 42% was obtained–from a study amongst nurses in Zabol city and a similar result of 49.06% was obtained in a study amongst medical students in Babylon.[10,12] Additionally, 77.8% of clinical students from our study washed their hands after attending to their patients. The finding in this is lower than the

observation made in a study carried out in Bayero University Kano were 94.9% of clinical students washed their hands after seeing patients.[13]

From our study, those who were in 5th year or higher, were ***13*** *(OR13.063) times* more likely to have knowledge of nosocomial infections compared to those who were below 500 level and comparable to the study made among medical students in Nigeria which reported that 98.2%and 90.9% of 500 and 400 level students had adequate knowledge of nosocomial infection respectively. This may be attributed to more exposure to information on nosocomial infection at higher clinical levels than at lower levels.[11] The similarity in percentages may be due to in adequate clinical experience and training on this subject matter amongst both levels.

CONCLUSION

This study confirmed that Clinical students had very good knowledge on nosocomial infection, with their source of information mostly from classroom, seminars and conferences. The attitude and practices of standard precautions to nosocomial infections were on the average while the level of immunization of these clinical students against hepatitis b infection was very low.

RECOMMENDATION

Health education on the knowledge of nosocomial infections should be incorporated early enough in the school curriculum. Hand sanitizers, face masks and other personal protective materials should be made available in hospitals order to enhance the attitude towards the prevention of nosocomial infections. Provision of modalities to checkmate the use of necessary equipment so as to increase the level of participation should be considered. A clear guideline should be established and made assessable.

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CONFLICT OF INTEREST

The authors declare that there is no conflict of interests regarding the publication of this paper.

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