



KNOWLEDGE AND PRACTICE AMONG NURSES REGARDING NOSOCOMIAL INFECTION.

Foyzunnasa^{1*}, Afroja Khatun², Most. Rahana Akter³, Swapna Biswas⁴ and Monoara Khatun⁵

Nursing Instructor, Nursing & Midwifery College, Jashore, Bangladesh.

***Corresponding Author: Foyzunnasa**

Nursing Instructor, Nursing & Midwifery College, Jashore, Bangladesh.

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ABSTRACT

Background: Nosocomial infections are obtained when undergoing medical care that wasn't present at admission. Nosocomial infections are the most common adverse incident that impacts patient safety in healthcare. They place a heavy financial strain on patients, families, and healthcare systems and significantly increase morbidity and mortality. But their policies are based on the expertise of the nurses and other medical personnel. The nurses' knowledge and practice level of hospital-acquired infections should be adequate. **Materials and Methods:** A cross-sectional study was performed at Khulna Medical College Hospital, Khulna, Bangladesh between November 2018 and January 2019. The study aimed to evaluate the knowledge and practice levels among the nurses. The study aimed to evaluate the knowledge and practice levels among the nurses on nosocomial infections. Data were gathered from a convenience sample of 208 nurses using a validated instrument. **Results:** The study showed that below half of the nurses had a good knowledge level of 104 (40.0%), as well as above half of the nurses 145 (56.0%), had fair knowledge, while only 11 (4.0%) nurse's knowledge level had poor. According to their practice, shows that above half of the nurses had a good practice level of 158 (61.0%), as well as below half of the nurses 96 (37.0%) had fair practice, while only 06 (2.0%) nurses' practice level had poor. Pearson correlation test was performed between knowledge and practice on nosocomial infection and there is moderate relationship was found ($r = 0.39$, at $P < 0.002$). **Conclusion:** Regardless of the patient's diagnosis, nurses should incorporate practices for preventing nosocomial infections into their daily routines. These practices include updating knowledge, improving operational guidelines and policies for preventing nosocomial infections, regularly supplying materials for infection prevention, and routinely immunizing and screening staff for hepatitis B.

KEYWORDS: Knowledge and Practice, Nurses, Nosocomial infection, Bangladesh.

1. INTRODUCTION

Infections obtained from the hospital by patients admitted for other reasons are known as nosocomial infections.^[1] HAI is a chief health problem in all humanities. Every year, 7.1 million cases of HAI are reported to the WHO. A hospital infection affects one out of every 20 persons. Every year, 99,000 people die as a result of this, with a societal cost of \$ 32 million.^[2] Patients do not have HAI when they arrive at the hospital, but it is possible that they will develop it within 72 hours or more.^[3] In Bangladesh, health-care facilities are structurally deficient, with a shortage of appropriate sinks, bedside hand-rub dispensers, and patient segregation facilities, among other things. Another area that has been ignored is the management of hospital garbage.^[4] Antibiotics are also used irresponsibly in underdeveloped countries, contributing to high infection rates.^[5] Other variables that can obstruct the prevention

of hospital-acquired illnesses include a lack of awareness of infection control issues and individual conduct.

Nurses are probable to be bare to microorganisms throughout their daily drill due to their close and recurrent direct interaction with patients.^[6] This could be one of the most common ways for patients to become infected. Surveillance for infection in the current study's data collection setting found that district line infection was the most common among other locations, accounting for 24.2%. As a result, infection control measures are not being followed. This percentage of infection was found despite attending prepared workshops on infection control standards. In order to be particularly cost-effective, nurses should be able to demonstrate their proficiency in using infection control concepts.^[7] When compared to the expenditures of HCAI, infection control and personnel are less expensive. As a result, nurses should have professional and ethical obligations to

ensure that their infection control knowledge and skills are current and that they practice safely and competently at all times.^[8] Nurses have several tools and resources to help create a safe environment for patients, including the following five areas of nursing practice where they may assist in the control and prevention of nosocomial infections: Hand hygiene promotion, optimal use of aseptic procedures, universal preventative practices, patient education, and cleaning and disinfection practices are all recommended. Therefore, nursing play important role in preventing nosocomial infections, not only by ensuring that all aspects of their nursing practice are properly conducted but also through nursing research, patient education, and implementation of infection control practices. So our study aim to access Knowledge and practice among nurses regarding nosocomial infection in a tertiary level hospital.

1.1 Research question

What is the Knowledge and practice among nurses regarding nosocomial infection in a tertiary level hospital?

1.2 Objective of the study

1.2.1 General objective

To assess Knowledge and practice among nurses regarding nosocomial infection in a tertiary level hospital.

1.2.2 Specific objective

1. To identify the socio-demographic characteristics of the Nurse's.
2. To measure Nurse's knowledge about nosocomial infection.
3. To evaluate Nurse's practice about nosocomial infection.
4. To estimate the relationship between knowledge and practice on nosocomial infection.

2. METHODOLOGY

2.1 Research design: Descriptive cross-sectional study.

2.2 Study Setting: Khulna Medical College Hospital, Khulna, Bangladesh.

2.3 Study period: The study was conducted between November 2018 and January 2019 in the selected hospitals.

2.4 Study Sample: A convenience sample consisted of 280 nurses, who work in Khulna Medical College Hospital, Khulna, Bangladesh invited to participate in this study. Twenty nurses were rejected to participate without being unidentified in the study. So, the ultimate contributors were 260 nurses.

2.5 The inclusion criteria: Only senior staff nurses with at least two years of experience working in ICUs, ERs, medical and surgical wards, pediatric, neonatal, and operational wards of the selected hospital is eligible.

2.6 Tool of the study: Researchers designed a self-administrative questionnaire that was utilized to collect data. The questionnaire divided in to three-part are as follows:

A. consists of socio-demographic characteristics such as Nurses' age, gender, marital status, hospital, nursing qualification, working experience, hepatitis B vaccine, and training on infection control.

B. The nurses' knowledge was assessed using the following 17 questions: Answer points were assigned to each question, with one point awarded for each accurate response and zero for wrong or I don't know responses. Each participant's overall knowledge score was calculated by adding their correct answers together. The knowledge marks were categorized into Poor knowledge ($\leq 50\%$), Fair knowledge (51- 80%), and (> 80) measured Good knowledge. The knowledge scores were divided into three categories: good knowledge ($> 80\%$), fair knowledge (51- 80%), and poor knowledge ($\leq 50\%$), C. 5-item Likert scale was used to evaluate 16 practice statements (ranging from strongly disagree, to 1 strongly agree 5). The practice scores were separated into 3 categories: poor (59%). fair (59-79%), and good (80%).

2.7 Validity and reliability of the study: A board of five academic and healthcare experts examined and validated the questionnaire; no comments were made. The questionnaire items had an internal consistency of 0.90 Cronbach's alpha (), which was considered acceptable.

2.8 A pilot study: A pilot study was conducted with twenty nurses in the medical and surgical wards of Khulna Medical College Hospital to determine the clarity of questions, effectiveness of instructions, completeness of response sets, and time required to complete the questionnaire, and success of data collection technique. Pilot subjects were asked to comment on the applicability and appropriateness (validity) of the questionnaire. All questions were answered no clarity of questions was required. The researchers determined that it would take twenty (20) minutes to complete the questionnaire.

2.9 Statistical analysis: Data were processed and analyzed using the computer software program SPSS version-25. The data presented on the categorical scale were expressed as frequency and corresponding percentage and compared by chi-square test, while the quantitative data were presented as mean and standard deviation (SD) and compared by student's t-test. The postoperative final outcome was evaluated using a confidence interval. For all analyses level of significance was set at 0.05 and a p-value < 0.05 was considered significant.

2.10 Data presentation: The observation and findings of the investigation and statistical analysis were presented using appropriate charts, figures, tables, and diagrams. The mean, range, percentage, and standard deviation (SD) were utilized in the case of continuous variables. Cross table and composite graph were employed in the case of categorized variables.

2.9 Ethical considerations: This study was approved by the nursing department, Khulna Medical College Hospital. Approval from nurses was obtained. Several strategies were utilized to protect the nurses rights who agreed to participate in this study. First, oral verbal consent of the nurses was obtained prior to the administration of the questionnaire. The nurses were

informed of the purpose of the study, and that they had the right to refuse to participate. Also, the voluntary nature of participation was stressed as well as confidentiality. Furthermore, the nurses were told that they can refrain from answering any questions and they can terminate at any time. The anonymity of the nurses was maintained at all times.

3. RESULTS

Table 1: Distribution of the Nurses according to demographic variables (n=260).

Variables	Characteristics	Frequency	Percent
Age	20-30 years old	140	54.0
	31-40 years old	93	35
	>40	27	11
Education	Nursing diploma	127	49
	Bachelor	95	36
	Master	38	15
Gender	Male	37	14
	Female	223	86
Marital status	Single	55	21
	Married	179	69
	Other	26	10
Experience	5 years or less	158	61
	6–15 years	82	31
	>15 years	20	8
Training course	Yes	55	21
	No	205	79
Hepatitis-B vaccine	Yes	239	92
	No	21	8

Table 1 shows that around half of the nurse's age group 140 (54.0%) were in 20–30 years. Majority of the nurses had diploma degree 127 (49.0%). Maximum nurses, gender was female 223 (86.0%), only 37 (14.0%) were males. This confirms the observation that the nursing profession is dominated by female. However, around two

third of them 179 (69.0%) were married, and maximum nurses years of experience were 5 years or less 158 (61.0%). Training course on infection control only 55 (21.0%) nurses were received training on infection control. The overwhelming of the nurses, 239 (92.0%), had received hepatitis B vaccination.

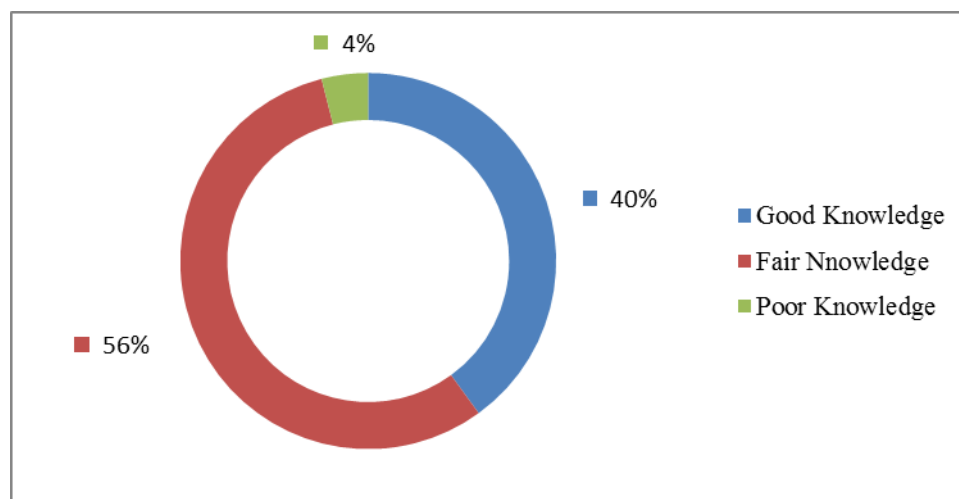


Figure 1: Distribution of the nurses according to level of knowledge on nosocomial infection (n=260)

Figure 1 shows that below half of the nurses had good knowledge level 104 (40.0%), as well as above half of

the nurses 145 (56.0%) had fair knowledge, while only 11 (4.0%) nurse's knowledge level had poor.

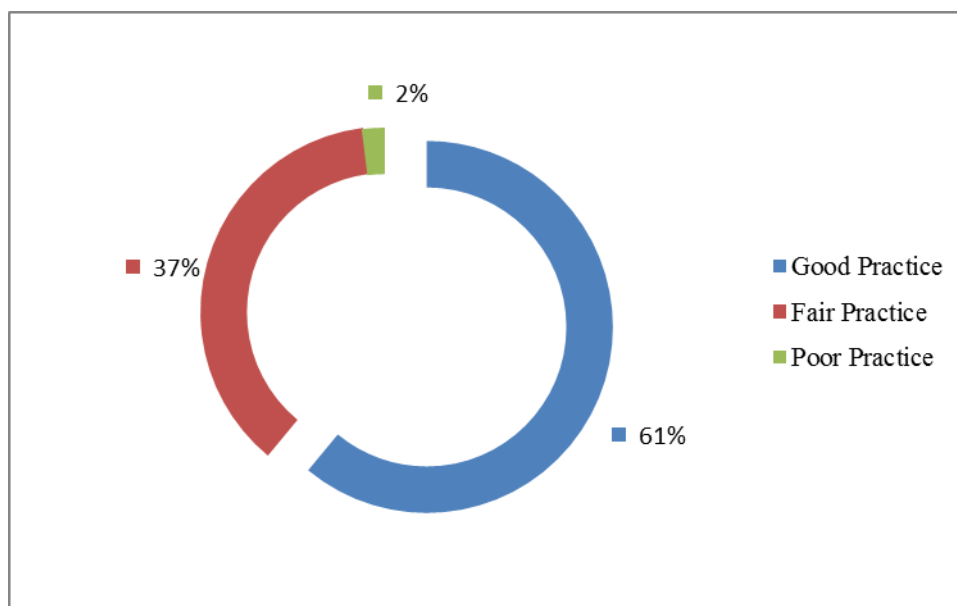


Figure 2: Distribution of the nurses according to level of practice on nosocomial infection (n=260).

Figure 2 shows that above half of the nurses had good practice level 158 (61.0%), as well as below half of the

nurses 96 (37.0%) had fair practice, while only 06 (2.0%) nurses practice level had poor.

Table 2: Relationship between nurses' knowledge level mean and practice level mean on nosocomial infection (n=260).

Variable	n	Mean±SD	r	P
Knowledge	260	67.53±11.00	0.39	0.002
Practice	260	78.55±6.03		

P value significant at the 0.05 level. SD: Standard deviation.

Table 2 shows that Pearson correlation test was performed between knowledge and practice on nosocomial infection and there is moderate relationship was found ($r = 0.39$, at $P < 0.002$).

4. DISCUSSION

Nosocomial infection is the core problem in the universe. As a result, current nursing knowledge and practice are crucial in the prevention of nosocomial infection. This study revealed that around half of the nurse's 140 (54.0%) age group were in 20–30 years. This finding is consistent with previous findings emphasizing the importance of keeping this group of health workers free of hospital infections during their early careers.^[10] The majority of the participants had no previous training in the prevention of nosocomial infection in clinical settings, and only some nurses had previous training in the prevention of nosocomial infection, but this training was not sound organized. As a result, routine precautions and infection control measures must be promoted in the nursing curriculum. We found that the majority of the nurses in this study had received the hepatitis B vaccine, underlining the hospitals' policies and procedures requiring new nurses to be vaccinated when recruited to avoid exposure to blood-borne viruses and needle stick injuries.

This study specified that the Nurses were knowledgeable related to nosocomial infection. These findings were corroborated by research that found that 90.0% of nurses were knowledgeable about nosocomial infections.^[11]

This, on the other hand, contradicts prior investigations, which indicated a lower degree of knowledge than that reported in this current study^[12, 13, 14, 15]

In terms of practice, the majority of the Nurses in the study had good practice level on nosocomial infection. This is in line with Fashafsheh's research,^[12] and goes outside of what Agaral and Thomas discovered.^[16]

The study's key finding was that there was a moderate relationship between nosocomial infection knowledge and practice level. This demonstrates how nosocomial infection knowledge influences practice and implementation. This result is in line with the findings of other studies, which show that nosocomial infection knowledge is positively connected with practice level, implying that the higher the nosocomial infection knowledge, the better the activity practice level.^[17, 18]

5. CONCLUSION

Overall, nurses' knowledge and practice of nosocomial infection in the selected hospitals that were the target of this study were good, with a rational correlation between the knowledge and practice.

Compliance with ethical standards.

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Disclosure of conflict of interest

None to declare

Statement of informed consent

Informed consent was obtained from all individual participants included in the study.

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