

## Knowledge & Awareness of Student Nurses' Regarding Hospital Infection Control Policies

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### Abstract

Nosocomial infections represents a universally serious health problem and a major concern for the safety of both patients and the health care providers. NIs has significant consequences on patients, their families, and the community as a whole. Nurses' are responsible for providing medications, dressing, sterilization, and disinfection. They are involved in more contact with patients than other health care workers (HCWs). Accordingly, they should be aware of how to prevent transmission of NIs and be knowledgeable of its potential risk to patients, other staff, and visitors. A descriptive study design was used in this study. A non-probability (purposive) sampling technique was used to select the study participants. A total of 85 student nurses of Final year of GNM, B.Sc. Nursing participated in this study and responded to the study questionnaire. The 30 items related to knowledge were assessed and 1 Score was given for each correct response. A score of less than half of the total was grouped as poor, 51-80% fair, and 81% and above was grouped as good. The outcome was decided as significance at the level of 0.05. The results of the current study showed that the majority (87%) of the participants had a fair level of mindfulness on the different Nosocomial infection preventive measures. However, poor level of knowledge was showed by 9%, and only 4% had good level of knowledge on the different Nosocomial Infections' preventive measures. The results highlighted the necessity to implement an in-service training on infection control measures with more focusing on safe injection awareness and safe linen handling because student nurses had poor knowledge in these two aspects.

**Keywords:** Nosocomial infection; Awareness; Student nurses; Infection prevention.

### Introduction

Nosocomial infections (NIs), also known as a hospital- acquired infection, are defined as infections which are acquired after 48 h of patient admission. Such infections are neither present nor

incubating prior to a patient's admission to a given hospital. NIs represents a universally serious health problem and a major concern for the safety of both patients and the health care providers. Although the incidence rate for nosocomial infection vary from country to country, at any given time, almost seven patients from developed countries totent patients from developing countries out of each 100 patients admitted to hospitals gain at least one kind of nosocomial infections.<sup>1</sup>

Nosocomial infections significantly affect the health of the patient, family members and the entire community. Most commonly the hospital infections increase the length of hospital stays,

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morbidity & mortality. These factors contribute to the direct & indirect burden on the cost of the health care services provided, which contribute to the extra cost of treatment of such infections which leads to increased consumption of the limited availed resources, creates a major problem faced by the developing countries.<sup>2-3</sup>

Health clinicians plays a vital role in providing care for the patients with respect to the early recovery & health promotion practices therefore they are more susceptible to expose with the various hospital acquired infections. Nurses should be well aware of such transmission of infection and should practice the strategies to prevent them by practicing them in meaningful manner. They should also make sure to aware the staff members, colleagues, health personnel's and visitors to reduce such exposure & transmission.<sup>4-5</sup>

The reviews of the previous studies have showed that there is lack of knowledge & awareness regarding such infection prevention which seems poor & insufficient. Therefore, this study aimed to identify gaps in student nurses' knowledge and awareness regarding NI control measures in order to improve the current training courses and enhance future good awareness.<sup>4-5</sup>

## Materials and Methods

The study was aimed to findout the current level of knowledge of student nurses' regarding infection control measures. A descriptive study design was used in this study. A non-probability (purposive) sampling technique was used to select the study participants. A total of 85 student nurses' of Final year of GNM, B.Sc. Nursing participated in this study and responded to the study questionnaire.

The questionnaire comprised 30 items related to knowledge and awareness regarding NI control measures which isdivided into the following two sections: Section 1 is related to the demographic information ofthe participants: age, gender, level of

education, course training on NI control, Section 2 is related to knowledge items consisted:

- Knowledge of preventive measures of person-to-person transmission, which includes hand hygiene (5 items), personal protective equipment (5 items), and safe injection awareness (4 items)
- Knowledge of preventive measures of transmission from hospital environment, which involves routine hospital cleaning (4 items), safe waste handling and disposal (4 items), reprocessing of patient care equipment (4 items), and safelinen handling (4 items)

The 30 items related to knowledge were assessed and 1 Score was given for each correct response. Correct answers were calculated to obtain total scores for different infection control awareness. A score of less than half of the total was grouped as poor, 51-80% fair, and 81% and above was grouped as good.

Content validity was obtained from three experts in the relevant field of the study. suggestions regarding the tool layout and format, relevance, accuracy, consistency, and scoring system were taken in consideration. Reliability of the tool items was tested using test-retest reliability with score of 0.81 which considered acceptable. the statistical software (SPSS) was used to record & analyze the responses of the participants. The outcome was decided as significance at the level of 0.05.

## Results

### *Demographic details of there spondents*

The results of the study showed that the majority of the student nurses' (61.2%) were males and they were the age groupof 20 years and above (71.8%). Sixty percent of them were under degree course. Around onethirds of the student nurses' (64.7%) had attendedtraining courses. (Table 1)

**Table 1:** Demographic details of there spondents

Demographic details	Total n(%)
<b>Age (in years)</b>	
< 20	24 (28.2)
20+	61 (71.8)
<b>Gender</b>	
Male	52 (61.2)
Female	33 (38.8)

Demographic details	Total n(%)
<b>Level of education</b>	
Bachelor degree	51 (60.0)
Diploma degree	34 (40.0)
<b>Course training on infection control</b>	
Yes	30 (35.3)
No	55 (64.7)

**Student nurses' knowledge on person-to-person infection control measures**

The results of the study showed that the majority (72.9%) of the student nurses' had a fair level of

knowledge on hand hygiene, while almost above of the third (35.3%) had a good level of knowledge on PPE. Likewise, more than half of the student nurses' (67.1%) had a poor level of knowledge regarding safe injection practices (Table 2).

**Table 2:** Student nurses' knowledge on person-to-person infection control measures

Different awareness	Level of knowledge		
	Poor (> 50% score)	Fair (50-80% score)	Good (≤ 81% score)
Hand hygiene	14 (16.5)	62 (72.9)	9 (10.6)
Personal protective equipment	32 (37.6)	23 (27.1)	31 (35.3)
Safe injection practices	57 (67.1)	28 (32.9)	0 (0.0)

**Student nurses' knowledge on preventive measures of transmission from hospital environment**

Regarding the preventive measures used in preventing transmission of infections from the hospital environment, the results revealed that more than half (52.9%) of the participants had a good level of knowledge on routine hospital cleaning

and the majority (81.1%) of them had a fair level of knowledge on safe waste handling and disposal. It was also found that more than two thirds (82.8%) of the student nurses' had a fair level of knowledge on patient care equipment reprocessing, while above half (60%) of them had a poor level of knowledge of safe linen handling (Table 3).

**Table 3:** Student nurses' knowledge on preventive measures of transmission from hospital environment

Different awareness	Level of knowledge		
	Poor (> 50% score)	Fair (50-79% score)	Good (≤ 80% score)
Routine hospital cleaning	4 (4.7)	36 (42.4)	45 (52.9)
Safe waste handling and disposal	7 (8.2)	69 (81.1)	9 (10.6)
Patient care equipment reprocessing	2 (2.4)	70 (82.8)	13 (15.3)
Safe linen handling	51 (60)	33 (38.8)	1 (1.2)

**Overall level of knowledge on different NI control measures**

The results of the current study showed that the majority (87%) of the participants had a fair level of mindfulness on the different Nosocomial infection preventive measures. However, poor level of knowledge was showed by 9%, and only 4% had good level of knowledge on the different Nosocomial Infections' preventive measures.

preventing such infection and controlling are important to reduce the occurrence of NIs in health and hospital settings.

**Discussion**

NIs contributes to patients' morbidity, mortality, hospital stay, and treatment cost (Ginny), Therefore,

during patients' nursing care, though it is important for student nurses to have the appropriate knowledge and awareness of infection prevention and control measures. This study aimed to determine the level of student nurses' knowledge and awareness regarding NIs.

Regarding the level of student nurses' knowledge on different preventive measures of person-to-person infection trans-mission, our study showed that the majority (72.9%) of the participants had a fair level of knowledge of Hand

hygiene. Almost two thirds of the participants were found to have fair (27.1%) and good (35.3%) levels of knowledge on personal protective equipment. The results also demonstrated that there were above half (67.1%) of the participants which had a poor level of knowledge and 32.9% of them had a fair level of knowledge; none of the participants had good knowledge on safe injection awareness.

Knowledge of student nurses on different preventive aspects of hospital infection transmission depicts that more than half of the participants (52.9%) had a good level of knowledge on daily hospital cleanings and 81.1% & 82.8% had average knowledge on safe handling of hospital waste, its disposal & care of equipment after use respectively. The results also showed that above half (60%) of the respondents had poor level of knowledge on handling of patient linen.

The overall results of the study on knowledge of various infection prevention & control measure was found to be fair (87). It was even higher than what was found by Abdulraheem et al. in Northern Nigeria and Shamaa and Talaatin Egypt. The knowledge level in these studies was (12.9, 10,) respectively. Such different levels of knowledge among student nurses' in these different studies might be due to the inadequacy of infection prevention and control training' education, as it was found that those student nurses' who attended in-service training achieved a high knowledge score.

The results express the necessities to implement the knowledge sessions on a regular basis related to handling of various equipment, linens, wastes and its proper disposal. Knowledge related to safer practices of injections should also be implemented as they showed such deficient knowledge particularly.

### **Limitations**

In the present study, there are certain limitations which should be considered in the future research. The study used the purposive sampling method for selection of samples which limit the generalization of the study. The selection was based on the researchers' own experiences which can lead to certain bias for future perspectives.

### **Conclusion**

Based on the findings of this study, it could be concluded that the majority of the student nurses had fair knowledge and awareness regarding NI control measures. Therefore, future research should focus on improving knowledge and awareness among student nurses' through educational intervention, during either their training courses by assessing their knowledge and awareness before and after intervention.

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