



## PRACTICE REGARDING HOSPITAL ACQUIRED INFECTION: A DESCRIPTIVE STUDY

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### ABSTRACT

Nosocomial infections (NIs), also known as a hospital-acquired infection, are defined as infections which are acquired after 48 h of patient admission. This study aims to assess the practice of nursing students and staff nurses regarding hospital acquired infection. **Methods:** Non experimental descriptive study was conducted on 205 nursing students & staff nurses, selected by convenient sampling technique. Sample characteristics Performa, questionnaire practice checklist were used to collect data through paper pencil technique.

**Results:** The study results revealed that more than one third (36%) of nursing students and staff nurses were having good practices, majority of (94.6%) participants were having good practices regarding recommendation of hand hygiene and highest mean percentage (99%) found in area of nosocomial infection.

**Discussion:** Based on the findings of the study more than one third of nursing students and staff nurses had good practices regarding hospital acquired infections.

**KEYWORDS :** Practice, Hospital acquired infection.

### Background

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 to ten patients from developing countries out of each 100 patients admitted to hospitals gain at least one kind of nosocomial infections.<sup>1</sup>

Worldwide, over 1.4 million patients suffer from healthcare associated infections (HAIs) at any time. HAIs have tremendous implications in terms of associated mortality, morbidity, adverse patient outcomes, increased cost of treatment, and social impact. Apart from the escalating rates of HAIs, MDR organisms now increasingly cause these infections. The problem is further compounded by the severe paucity of new antimicrobials, making treatment extremely difficult.<sup>2</sup>

There are no mandatory reporting and recording systems for nosocomial infections both at the national and state level. However, there is little doubt that the incidence of HAI has increased over the years and the problem is not less in this country than anywhere else in the world HAIs not only affect patient health and safety, but also the health care system as a whole. It is estimated that HAIs increase the cost of health care between \$4.5 and \$5.7 billion in patient care. Hospital acquired infections increase the number of days a patient spends in the hospital, requiring additional medical care and hours spent providing medical care. These costly infections divert funding and precious staff and infection control measures to protect patients.<sup>3</sup>

The highest frequencies of hospital acquired infections were reported from hospital in the Eastern Mediterranean and South-East Asia regions (11.8 and 10.0% respectively) with a prevalence of 7.7 and 9.0% respectively in the European and Western Pacific Region. A review of studies performed also revealed an extremely fragmented picture of the endemic burden of HAI in India.

### METHODS

This was a non experimental study conducted on 205 nursing students & staff nurses who were selected by convenient sampling technique. Based on the pilot study sample size was

calculated by sample size determination formula  $n = (Z\alpha/2)^2 P(1-P)/d^2$ , a 274 sample size was determined for the study and only 205 responses were collected and analyzed. The ethical approval for the study was obtained from the institutional ethical committee. A Consent form was taken from the nursing students & staff nurses regarding their willingness to participate in the research project. The purpose for carrying out research project were explained to the nursing students & staff nurses and assurance of confidentiality was given.

Data were collected using two tools. Selected sample characteristics comprised age in years, gender, course, previous knowledge about HAI (if yes, source of information), have you / your family member/ relative admitted in the hospital (if yes, duration of stay), area of posting.

Questionnaire practice checklist (KR20 = 0.9) comprised of 15 statements that was categorized into nosocomial infection, standard precaution, hand hygiene and risk of splashes. Each item had a single correct answer and awarded as "one" and for incorrect answer as a "zero" Based on the scoring criteria of questionnaire practice checklist, practice was categorized into four level of practice i.e. very good (81-100%), good (71-80%), average (51-70%), below average (<50%).

After establishing the rapport with nursing students, informed written consent was taken and the students were assured about the confidentiality of their responses. The average time taken by the participants to complete the structured knowledge questionnaire was 25-30 minutes.

### Statistics

Data were analyzed using SPSS (IBM Corp., Armonk, NY, USA) version 20. Data analysis was done by using descriptive and inferential statistics that is by calculating percentage, mean, median, SD (standard deviation) and chi-square.

### RESULTS

A total of 205 students completed the study. Majority of nursing student and staff nurses were in age group of 18-25 (71.7%). Majority (92.1 %) nursing students and staff nurses were female. In category of education level most of (30.2%) were in PB.Sc. nursing. All the (100%) nursing students and staff nurses have previous knowledge regarding HAI. More than half (53.1%) of nursing students and staff nurses have

source of information from the hospital and health personnel. Majority (69.7%) of nursing students and staff nurses had never admitted to the hospital. Less than one third (22.4%) of nursing students and staff nurses were posted in medicine ward. [Table 1]

More than one third (36%) of nursing students and staff nurses were having very good practices regarding hospital acquired infection, (35.6%) having good practices followed by (24.3%) having average practices and only (3.9%) of nursing students and staff nurses were having below average practices regarding hospital acquired infection[Figure 1]

The highest mean percentage regarding practices of hospital acquired infection was found in area of nosocomial infection (99%) followed by standard precaution (80%), hand hygiene (55%) and risk of splashes of blood and body fluid ( 30.7%). [Figure 2]

**DISCUSSION**

The findings revealed that more than one third (36%) nursing students and staff nurses have very good practices regarding hospital acquired infection. These findings were contradictory with the study conducted by Gamil Alrubaieet *al*<sup>4</sup> to assess knowledge and practices regarding the prevention of hospital acquired infections among nurses which shows that only (9%) of nurses have good practices regarding hospital acquired infection.

Contradictory findings had been shown by the study conducted by Ishwari Sharma Paudel *et al*<sup>5</sup> to assess the knowledge, practices and attitude of hospital acquired infections among nursing students which stated that majority (94%) of nursing students had very good practices regarding hospital acquired infection.

Findings of the present study revealed that majority (90.7%) of nursing students and staff nurses had good practices regarding wearing of gloves by standard measures which was contradictory with the study conducted Kaushik Nag *et al*<sup>6</sup> to assess the knowledge level of nursing students on hospital acquired infection which stated that more than half (69%) were aware regarding wearing of gloves by standard measures.

Findings of the present study revealed that majority (94.6%) of nursing students and staff nurses had good practices regarding recommendation of hand hygiene before and after contact with the patient which was similar with the study conducted by Sahar Mudassar *et al*<sup>7</sup> to assess the practices of nurses regarding hospital acquired infection which stated that (90%) were aware regarding proper hand hygiene.

Contradictory findings had been shown by the study conducted by Asma Kabir *et al*<sup>8</sup> to assess the knowledge, practices and attitude of hospital acquired infections among nursing students which stated that half (50%) of nursing students don't follow hand hygiene as it interferes with the patient interaction.

The findings of the study revealed that (72.6%) of nursing students and staff nurses were aware regarding wearing of personal protective equipment if there is risk of blood and body fluid splashes which was similar with the study conducted Gamil Alrubaieet *al*<sup>4</sup> to assess knowledge and practices regarding the prevention of hospital acquired infections among nurses which shows that only (78%) of nurses have good practices regarding wearing of personal protective equipment to prevent hospital acquired infection.

**Limitations**

Due to Covid 19 pandemic the sample size was changed from paramedical students to nursing students and staff nurses.

The projected sample size could not be completed.

**Suggestions**

The study can be replicated on the large sample, thereby finding can be generalized for a large population.

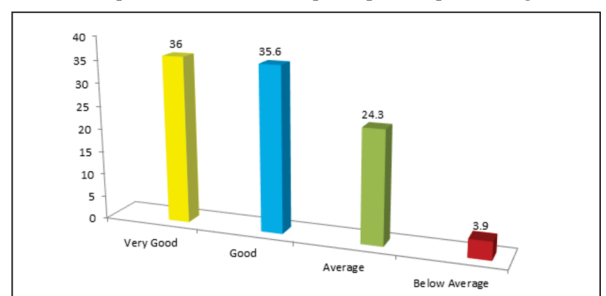
Comparative study could be done between nursing and non-nursing staff & students in public or private institutes.

A experimental study can be conduct to assess and evaluate the effectiveness of health education regarding HAI.

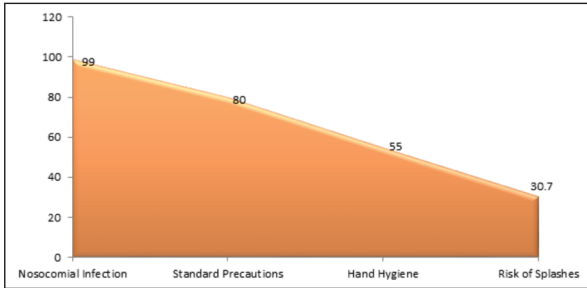
**Table 1: Frequency and Percentage distribution showing sample characteristics among nursing students and staff nurses**

Sample characteristics	f	%
Age in years		
18-25	147	71.7
26-30	51	24.8
31-35	7	3.4
Above 35	0	0
Gender		
Male	16	7.8
Female	18	92.1
Course		
G.NM	55	26.8
B.Sc.	59	28.7
P.B.Bsc.	62	30.2
M.Sc.	29	14.1
Previous Knowledge about HAI		
Yes	205	100
No	0	0
If yes, source of information		
Books	75	36.5
Friends	8	3.9
Hospital/ Health personnel	109	53.1
Others	13	6.3
Have you/ your family member/relative admitted in the hospital		
Yes	62	30.2
No	143	69.7
If Yes, duration of stay		
< 1 week	41	19
1-4 week	18	8
4-8 week	1	1
>8 week	2	2
Area of posting		
Medicine Ward	46	22.4
Surgery Ward	42	20.4
Pediatric Ward	30	14.6
Labour Room	19	9.2
Psychiatric Ward	20	9.7
ICU	32	15.6
Emergency	16	7.8

Values are presented as: (f=frequency), (%=percentage).



**Figure 1: Pie Chart showing percentage distribution of level of practice among nursing students and staff nurses**



**Figure 2: Area graph showing area wise level of practice among nursing students and staff nurses**

## CONCLUSION

Based on the findings of the study it can be concluded that less than one third of the nursing students and staff nurses had good practices regarding hospital acquired infection. Therefore, in-service education programme should be organized for health care workers as well as for the nursing students.

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Nil

## Conflicts of interest

There are no conflicts of interest.

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