



KNOWLEDGE REGARDING HOSPITAL ACQUIRED INFECTION AMONG NURSING STUDENTS AND STAFF NURSES

Nursing

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ABSTRACT

Nosocomial infection, also known as hospital acquired infections, occur in patients admitted in a hospital for a long or a time due to some therapeutic or diagnostic purpose while patient has no evidence of any infection before admission to the hospital. This study aims to assess the knowledge of nursing students regarding hospital acquired infection. **Methods:** This non experimental descriptive study was conducted on 205 nursing students selected by convenient sampling technique. Sample characteristics Performa, structured knowledge questionnaire were used to collect data from nursing students through paper pencil technique. **Results:** The study results revealed that that reveals that less than (41.9%) of nursing students and staff nurses were having average level of knowledge, that majority of (95.6%) nursing students and staff nurses were having good knowledge regarding urinary tract infections and highest mean percentage found in area of sign & symptom (84%) and treatment. **Discussion:** Based on the findings of the study it can be concluded that less than one third of nursing students and staff nurses had good knowledge regarding hospital acquired infections.

KEYWORDS

Knowledge, Hospital acquired infection Nursing students, Staff nurses.

BACKGROUND

Nosocomial infection, also known as hospital acquired infections, occur in patients admitted in a hospital for a long or a time due to some therapeutic or diagnostic purpose while patient has no evidence of any infection before admission to the hospital. Patient has no signs and symptoms of infection before being hospitalized. However when remained hospitalized for some time came in contact with beds, linens and utensils that had been contaminated by the others patients and their attendants and acquired nosocomial infection.

Every infection needs a source for transmission. The doctors, nurses, caregiver and patients may be affected either by themselves or may serve as a carriers especially when they are attending patients without following standard antiseptic protocols. Hospital acquired infections affect approximately 10% of all patients admitted and about 20% of those are in intensive care units (ICU). It has been noted that, on average, patients with hospital acquired infections spend 2.5 times longer in the hospital than their peers who do not.¹

According to WHO at any given time over 1.4 million people across the global suffer from a nosocomial infection. HAIs account for 2 million cases and about 80,000 death per year, every 100 hospitalized patients at any given time, 7 in developed and 10 in developing countries will acquire at least one health care associated infection. Approximately 30% of patients in intensive care unit(ICU) are affected by at least one health care- associated infection.²

Prevalence survey conducted under the auspices of World Health Organization (WHO) in 55 hospitals of 14 countries representing 4 WHO regions (Europe, Eastern Mediterranean, SouthEast Asia and Western Pacific) showed an average of 8.7% of hospital patients had nosocomial infections.¹

Indeed, the pandemic has exacerbated the hitherto known burden of HAIs worldwide in terms of excess costs, prolonged hospital stays,

mortality and disability. Today, HAIs have become more challenging to handle, together with the fact that we don't have proper data nor surveillance protocols.³

METHODS

The present study was non experimental study conducted on 205 nursing students 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 was collected and analyzed. The ethical approval for the study was obtained from the institutional ethical committee. Formal administrative approval was obtained from the Principal, M.M. College of Nursing & M.M institute of Nursing and Nursing Superintendent M.M.D.U, Mullana, Ambala. 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.

Structured knowledge questionnaire (KR20 = 0.9) comprised of 40 multiple choice questions that was categorized into concept, causes and transmission, sign and symptoms, diagnostic test, treatment, prevention. Each item had a single correct answer and awarded as "one" and for incorrect answer as a "zero." Based on the scoring criteria of structured knowledge questionnaire, knowledge was categorized into four level of knowledge 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 P.B.Bsc. 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]

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		
GNM	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).

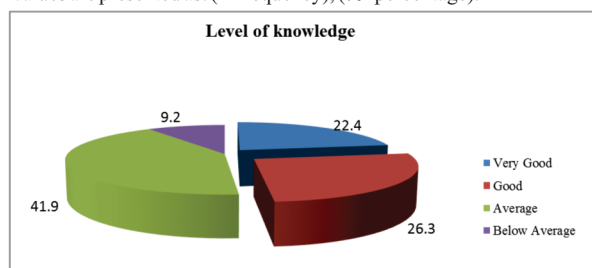


Figure 1: Pie Chart showing percentage distribution of level of

knowledge among nursing students and staff nurses

Less than half (41.9%) and less than one third (26.3%) of nursing students and staff nurses had average and good knowledge regarding hospital acquired infection. Less than one third (22.4%) and only (9.2%) had very good and below average level of knowledge regarding hospital acquired infection. [Figure 1]

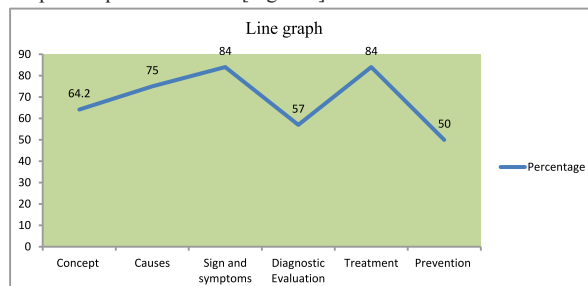


Figure 2: Line graph showing area wise level of knowledge among nursing students and staff nurses

The highest mean percentage regarding knowledge of hospital acquired infection was found in area of sign & symptom (84%) followed by treatment (84%), causes/ risk factors (75%), concept (64.2%), diagnostic evaluation (57%) and prevention (50%). [Figure 2]

DISCUSSION

The findings revealed that less than half (41.9%) nursing students and staff nurses have average knowledge regarding hospital acquired infection. These findings were contradictory with the study conducted by Prempati Mayanlambam *et al*⁴ to assess knowledge regarding the prevention of hospital acquired infections among students which shows that (50%) nursing students have good knowledge regarding hospital acquired infection.

Contradictory findings had been shown by the study conducted by Ramandeep Kaur, *et al*⁵ to assess the knowledge of hospital acquired infections among nursing students on hospital acquired infection which stated that only (19.3%) of nursing students had average knowledge regarding hospital acquired infection.

Findings of the present study revealed that more than half (62.4%) of nursing students and staff nurses had knowledge regarding invasion and multiplication of microorganism within the body which was contradictory with the study conducted by Ece Davran *et al*⁶ to assess the knowledge level of nursing students on hospital acquired infection which stated that (96.6%) were aware regarding invasion of microorganisms.

Findings of the present study revealed that majority (70%) of nursing students and staff nurses had knowledge that UTI is the most common hospital acquired infection which was similar with the study conducted by Ece Davran *et al*⁶ to assess the knowledge level of nursing students on hospital acquired infection which stated that (76%) were aware regarding urinary tract infections.

Findings of the present study revealed that less than half (56.5%) of nursing students and staff nurses had knowledge that best method disinfection of hospital waste is Incineration which was consistent with the study conducted by Tato Yutap Radzak *et al*⁷ to determine the knowledge of nurses regarding infection control practices which stated that (58.7%) of nurses had knowledge regarding waste management practices.

Similar findings had been shown by the study conducted by Gamil Alrubaiee *et al*⁸ to assess the Knowledge and practices of nurses regarding nosocomial infection control which stated that (52.9%) of nurses had good knowledge regarding routine hospital waste management practices.

The findings of the study revealed that less than half (44.3%) of nursing students and staff nurses had knowledge that cleaning of bed sores has to be done from outer to inner which was contradictory with the study conducted by Ece Davran *et al*⁶ to assess the knowledge level of nursing students on hospital acquired infection which stated that (95.2%) of nurses were aware regarding antiseptic cleaning of bed sores.

The findings of the study revealed that majority (81.9%) of nursing students and staff nurses had knowledge that prolonged use of indwelling catheter increased the risk of hospital acquired infection which was consistent with the study conducted by Sophia. G⁹ to assess the level of Knowledge on hospital acquired infections among nursing students on hospital acquired infections which stated that (85%) of nursing students were aware regarding prolonged catheterization.

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.

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

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 knowledge 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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Conflicts of interest

There are no conflicts of interest.

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