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A Study to Assess the Knowledge Regarding Infection Control Measures Among B.Sc Nursing 2nd Semester Student of Era College of Nursing, Lucknow, UP

Ms. Dipanshi[1], Ms. Divyanshi Chaurasia[2], Ms. Arunima Verma[3], Ms. Awanti[4], Ms. Siddiqui Alisha Sikandar[5], Ms. Chandni Verma[6], Ms. Vidhi Chaudhary[7], Ms. Shabih Zehra[8], Ms. Avantika Dixit[9]

[1,2,3,4,5,6,7]B.sc Nursing students, Era College of Nursing, Era University, Lucknow.
[8]Assistant professor, Era College of Nursing, Era University, Lucknow.
[9]Nursing Tutor, Era college of Nursing , Era University, Lucknow.

ABSTRACT

Infection occurs when a foreign organism such as bacteria, viruses, fungi or parasites enters a person's body and causes harm. The organism multiplies and triggers an immune response leading to various symptoms and potentially serious health issues. Common Hospital Acquired Infections are: Urinary Catheter-Related Infection, Central Venous Catheter-Related Infection, Surgical Site Infection, Respiratory Tract Infection, Bloodstream Infection etc. Infection control refers to the practices, policies and procedures designed to prevent the spread of infections within healthcare settings and communities. These measures aim to reduce the risk of healthcare-associated infections and protect patients, healthcare workers and others from infectious diseases. Infection control measures are crucial in healthcare to prevent the spread of infections and statistics highlight their effectiveness. A study found that 70% of infections can be prevented through good hand hygiene and other cost-effective practices, according to the World Health Organization. Overall, about 1 in 31 hospital patients have a healthcare-associated infection and 1 in 10 dies from them, according to the Centers for Disease Control and Prevention. Hospital Acquired Infection are a significant concern in healthcare settings which helps to identify effective strategies to prevent and it and is essential for ensuring patient safety. The rise of antimicrobial resistance threatens global health which helps to identify ways to reduce the spread of resistant organisms, advancement in infection control practices which includes innovation in infection control hence leads to improved practices, product, informing policies and guidelines which reduces costs and other infection related issues. It also helps to protect health care workers from occupational infectious diseases like COVID-19 etc. 1 in 25 hospitalized patients in the United States and over 33% of individuals in India is affected by Hospita- Acquired Infection. 55-70% of Hospital Acquired Infections can be prevented through effective infection prevention and control measures, estimated annual costs of approximately $6.5 billion in the US.

Keywards: Asses, Knowledge, Infection,B.Sc. Nursing 2nd semester students

Introduction

Infection occurs when a foreign organism such as bacteria, viruses, fungi or parasites enters a person's body and causes harm. The organism multiplies and triggers an immune response leading to various symptoms and potentially serious health issues. Common Hospital Acquired Infection are: Urinary Catheter-Related Infection, Central Venous Catheter-Related Infection, Surgical Site Infection, Respiratory Tract Infection, Bloodstream Infection etc. Infection control measures are crucial in healthcare to prevent the spread of infections and statistics highlight their effectiveness. A study found that 70% of infections can be prevented through good hand hygiene and other cost-effective practices, according to the World Health Organization. Overall, about 1 in 31 hospital patients have a healthcare-associated infection and 1 in 10 dies from them, according to the Centers for Disease Control and Prevention. It encompasses a range of strategies including hand hygiene, use of personal protective equipment, sterilization, disinfection of equipment, safe injection practices and respiratory hygiene. Effective infection control not only protects patients, healthcare workers and visitors from acquiring infections but also reduces the risk of outbreaks and the development of antimicrobial resistance. By adhering to rigorous infection control standards, healthcare facilities can significantly enhance patient safety and improve overall healthcare outcomes. 1 in 25 hospitalized patients in the United States and over 33% of individuals in India is affected by Hospital Acquired Infection. 55-70% of Hospital Acquired Infections can be prevented through effective infection prevention and control measures, estimated annual costs of approximately $6.5 billion in the US.

Background

The prevalence of healthcare associated infection varies globally but studies suggested that approximately 5-15% of hospitalized patients and 9-37% of those admitted to Intensive Care Unit are affected. Infections are a significant concern in healthcare settings, posing risks to patients, healthcare workers, and the broader community. Nurses play a vital role in preventing and controlling infections, making their knowledge, attitude, and practice of infection control measures crucial. Despite the importance of infection control, studies have shown that healthcare-associated infections (HAIs) remain a significant challenge globally. This study aims to assess the knowledge, attitude, and practice of infection control measures among nurses with the goal of identifying areas for improvement and informing evidence-based interventions Studying infection control measures is crucial to improve patient safety, reduce morbidity and mortality, and enhance healthcare worker safety. By investigating effective infection control strategies, researchers can inform evidence-based policies, optimize resource allocation, and promote quality improvement in healthcare. This research also helps address emerging infectious disease threats and identifies best practices to prevent and control infections, ultimately leading to better patient outcomes and healthcare systems.

Methodology

This study was conducted by using quantitative research approach at Era College of Nursing, Lucknow. In the present study, descripted research design was used to achieve the objectives of the study. The total sample size 70, as calculated statistically. Before conducting the study informed consent was obtain from the sample. Purposive sampling technique was used. Data collection was done by using self structured questionnaire to assess the knowledge regarding infection control measures among B.Sc. Nursing 2nd semester students at Era College of Nursing, Lucknow. The data collection was done on 16th June 2025.

SECTION-1

Level of knowledge	Frequency	Percentage
Above average	11	15.7
Average	2	2.9
Excellent	9	12.9
Good	48	68.6

Description of demographic profile

Demographic variables	Option	Frequency	Percentage
Age	18-20 years	57	81.4
	21-23 years	13	18.6
Education	Diploma	4	5.7
	Intermediate	57	81.4
	Undergraduate	9	12.9
Residence	Rural	20	28.6
	urban	50	71.4
Pre-knowledge	yes	54	77.1
	no	16	22.9

Table no. 1: Demographic profile

The demographic profile shows that the majority of participants fall in the 18–20 years age group, comprising 57 individuals (81.4%). A smaller portion belongs to the 21–23 years group, with 13 individuals (18.6%). The majority of participants have completed Intermediate education, accounting for 57 individuals (81.4%). Undergraduates make up 9 individuals (12.9%), suggesting a smaller group currently pursuing or having completed their graduation. Only 4 participants (5.7%) hold a Diploma. A significant majority of participants, 50 individuals (71.4%), reside in urban areas. A smaller portion, 20 individuals (28.6%), come from rural backgrounds. A large majority, 54 participants (77.1%), reported having prior knowledge related to the topic of study. Only 16 participants (22.9%) indicated no prior knowledge.

SECTION-2

Knowledge regarding infection control measures

Table no. 2: Level of knowledge

The majority of participants, 48 individuals (68.6%), rated their knowledge level as Good.11 participants (15.7%) considered their knowledge Above Average. 9 participants (12.9%) rated their knowledge as Excellent. Only 2 participants (2.9%) identified their knowledge as Average. This suggests a generally confident and knowledgeable sample, with most respondents perceiving their understanding as good or better.

SECTION-3

Association between demographic variables and knowledge level

There is no significant association between having pre-knowledge and the self-rated level of knowledge in your sample ($p > 0.05$). While there appears to be a tendency for those with pre knowledge to report higher knowledge levels, this pattern could be due to chance based on the current data. There is no statistically significant relationship between age group and self-rated level of knowledge in this sample. Although younger participants (18–20 years) tend to rate themselves slightly higher, this difference is not large enough to rule out chance. Since at least one group violates the assumption of normality ($p < 0.05$ for Intermediate group), so we used a non-parametric test like the Mann-Whitney U test. There is no significant difference in the target variable (likely knowledge score or related measure) between students with Higher level education and Intermediate-level education (Mann–Whitney $U = 357.5$, $p = 0.843$). Thus, education level does not appear to influence the outcome in this sample

Discussion

The data obtained are tabulated and analysed by using descriptive and inferential statistics. The statistical analysis of 70 samples shows that 11 (15.7%) sample had above average knowledge, 2 (2.9%) sample has average knowledge, 9 (12.9%) sample had excellent knowledge, 48 (68.6%) had good knowledge

Conclusion

The study concludes that most B.Sc. Nursing 2nd semester students have adequate knowledge of infection control measures. The absence of a significant association between demographic factors and knowledge level suggests that all students, regardless of background, benefit equally from the current teaching methods. While the knowledge levels are encouraging, it is important to ensure this knowledge is applied consistently in clinical settings to prevent healthcare-associated infections.

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