Volume 4, Issue 3, 2026

Frontier in Medical & Health Research

ISSN: (e) 3007-1607 (p) 3007-1593

ASSESSMENT OF KNOWLEDGE REDARDING NOSOCOMAL INFACTIONS AMONG STAFF NURSES

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DOI: http://doi.org/10.5281/zenodo.19219819

Keywords

Nosocomial infection, hospital-acquired infection, nurses, infection control, knowledge, hand hygiene.

Article History

Received: 26 January 2026
Accepted: 09 March 2026
Published: 25 March 2026

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Abstract

Background: *Nosocomial infections, also known as hospital-acquired infections (HAIs), are infections that develop in patients during hospitalization and usually appear after 48 hours of admission. These infections significantly increase morbidity, mortality, hospital stay, and healthcare costs. Nurses play a vital role in preventing these infections because they are in continuous contact with patients. Adequate knowledge of infection control practices such as hand hygiene, use of personal protective equipment (PPE), sterilization, and environmental hygiene is essential to reduce the occurrence of nosocomial infections.*

Objective: *This study was to assess the knowledge regarding nosocomial infections among staff nurses.*

Methodology: *A descriptive cross-sectional study was conducted among staff nurses working in different hospital departments including wards, intensive care units, and operation theaters. Data were collected using a structured questionnaire. A non-probability sampling technique was used to select participants. The collected data were analyzed using SPSS version 20, and descriptive statistics such as frequencies and percentages were calculated.*

Results: *The results showed that the majority of nurses had good knowledge regarding nosocomial infections. Most participants correctly identified nosocomial infection as hospital-acquired infection (99%) and recognized that these infections develop after 48 hours of admission (99%). A high proportion of nurses were aware that urinary tract infection is the most common type of nosocomial infection (91%), and that hand hygiene is the most effective preventive measure (98%). However, a notable gap was observed in understanding the importance of infection control knowledge for professional responsibility and self-protection, where only 35% of participants agreed.*

Conclusion: *The study concludes that staff nurses generally possess adequate knowledge regarding nosocomial infections and their prevention. However, gaps still exist in areas related to professional responsibility and infection control practices. Continuous training programs and educational interventions are recommended to improve nurses' knowledge and strengthen infection prevention*

Frontier in Medical & Health Research

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practices.

INTRODUCTION

Nosocomial infections are defined as infections acquired during hospitalization, typically manifesting after 48 hours of admission and not present or incubating at the time of admission (WHO, 2016). The most common HAIs include urinary tract infections, surgical site infections, ventilator-associated pneumonia, and bloodstream infections.These infections are responsible for increased morbidity, mortality, prolonged hospital stay, and higher healthcare costs. Nurses play a central role in infection prevention because of their continuous and direct contact with patients. Their level of knowledge about infection control measures, including hand hygiene, sterilization, use of personal protective equipment (PPE), and waste disposal, is critical to minimizing the risk of HAIs. Transmission of infectious agents within a health care setting requires three agents; a reservoir, susceptible host, and a mode of transmission. Patients' health care workers and visitors are susceptible host in the hospital environment. The complex interrelationship between a potential host and an infectious agent produces infection. The mode of transmission may vary by type of organism as some types of organism may be transmitted more than one route. The complex interrelationship between a potential host and an infectious agent produces infection. Compliance on the part of healthcare workers with standard precautions has been recognized as an efficient and effective means to prevent and control health care-associated infections in patients and health workers. The shortage of effective preventive measures and evidence-based practice is not considered the significant problem, but the most of healthcare professionals improperly use these precautions. Subsequently, the stress is to improve this negligence in the behavior of health care workers toward the infection control measures. Regarding levels of infection prevention, reported that nurses had an undesirable level of practice and exposing the patients to infection-related diseases. Measures of infection control include, follow aseptic techniques of hand hygiene. this lack of understanding hinder the development of effective strategies to mitigate the risk of nosocomial infection4 .there is also greatest need for the best performance should be shared among hospital to stop the spared of nosocomial infection(1).while there has been extensive research on the general prevalence and impact of nosocomial infection in Nigerian hospitals ,there is noticeable gap in the literature regarding the specific factors that influence prentice practices against these infection teaching hospital most studies focus on board issues such as infections rats and the effectiveness of existing protocols but there is limited empirical evidence on unique challenges faced by health care's workers in teaching in hospitals .when it comes to. Implementing preventive measures additionally the role of contextual factors such as healthcare workers attitudes, hospitals .these infections only lead increase mobility and morality rates but also places a significances financial burden on healthcare infrastructure.

It has been in several epidemiological studies that healthcare worker such as physicians, dentists and nurse are implicate in the transmission of nosocomial infections literate that has explored the knowledge and practice of nurses is limited there is it important further investigate the impact there is it important the finding suggest the hospitals should invest in regular training programs for nurses focusing on the prevention and control of nosocomial infection.

MATERIAL AND METHODS

This study employed a descriptive questionnaire design to investigate female and male nurses. The study was conducted in 2 months period of time from 17 November to 17 January 2026. The sample size was determined using Rao Soft for with 95% confidence level and 55 of margin of Error. The study setting included nurses working in general wards, intensive care units (ICUs), and operating theaters. A non-probability sampling technique was used. Inclusion criteria were

Frontier in Medical & Health Research

ISSN: (e) 3007-1607 (p) 3007-1593

nurses who agreed to participate, were working in the ward, and included both genders; exclusion criteria were those who disagreed or were not working. Data were collected using a pre-tested questionnaire, checked, coded, and analyzed with SPSS version 20. Frequency, mean, and other statistics were calculated, with a p-value < 0.05 considered statistically significant. Data analysis involved descriptive statistics (mean, percentage) and correlation with demographic variables such as age, education, and years of experience. Ethical considerations included approval from the ethical committee of Civil Hospital Nawabshah and a written permission letter from the principal civil hospital nursing superintendent. Ethical clearance was also obtained from the ethics and research committee of the University of Medical Science Teaching Hospital. Informed consent was taken from nurses, ensuring confidentiality and privacy of their information.

RESULTS

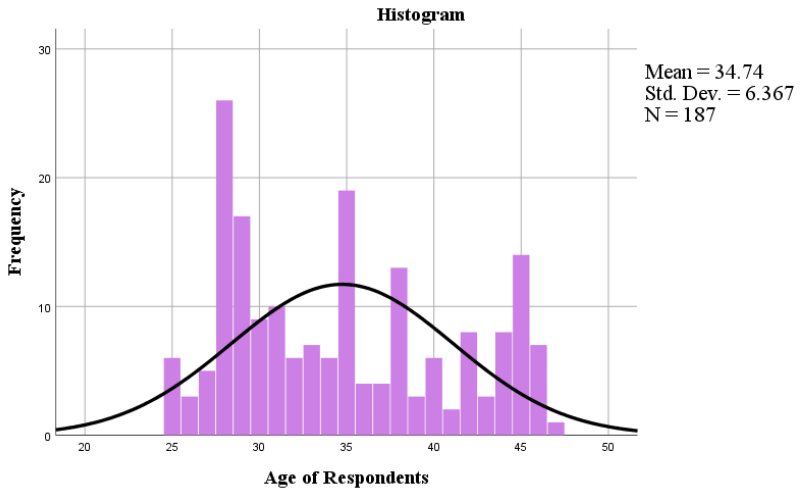

Figure 1: Age of Respondents

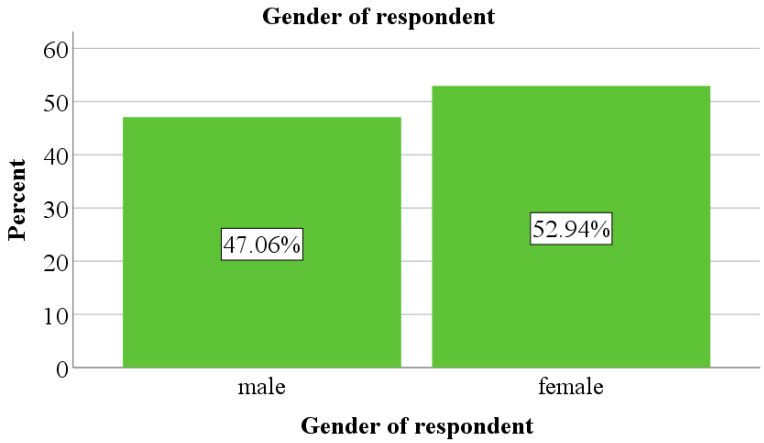

Figure 2: Gender of Respondents

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ISSN: (e) 3007-1607 (p) 3007-1593

Table 1: Socioeconomic status

Socioeconomic status of respondent's	Frequency	Percent
Poor	86	46.0%
Middle	89	47.6%
Rich	11	5.9%

Table 2: Ethnicity

Ethnicity status of respondents	Frequency	Percentage
Sindhi	167	89%
Panjabi	11	6%
Balochi	9	5%

Table 4: Education Level

Education level of respondent	Frequency	Percentage
Diploma in nursing	54	30%
BSN (G)	107	57%
Post RN	24	13%

Table No 6: Job Experience

Job Experience of respondents	Frequency	Percent
2 years	30	16.0%
4 years	56	29.9%

Table No .4: KNOWLEDGE REGARDING NOSOCOMIAL INFECTIONS

Questions	Yes	No
Nosocomial infection is known as hospital acquired infection?	186(99%)	1(1%)
Does development of nosocomial infection after 48 hours of admission?	185(99%)	2(1%)
Symptoms of nosocomial infection fever?	179(96%)	8(4%)
The most common nosocomial infection is urinary tract infection?	171(91%)	15(9%)
Highly vulnerable group for nosocomial infection hospitalized for a long time?	162(87%)	24(13%)
Surgical site infection is a nosocomial infection?	153(82%)	34(18%)
Importance of nosocomial infection knowledge for nurses to protect the patient and themselves?	64(35%)	122(65%)
Causes of nosocomial infection Escherichia coli?	111(60%)	75(40%)
Nosocomial infection transmission route several routes?	166(89%)	21(11%)
Patient at risk for nosocomial infection age more than 70 years?	170(91%)	17(9%)
Factors influencing nosocomial infection environment factors	180(96%)	6(4%)
Nosocomial infection is preventable?	184(98%)	3(2%)
Priority to prevent nosocomial infection hand washing?	183(98%)	4(2%)
Steps in effective hand washing 7steps?	182(97%)	4(3%)

Frontier in Medical & Health Research

ISSN: (e) 3007-1607 (p) 3007-1593

Chlorohexidine use skin disinfection before any surgical procedure?	179(96%)	8(4%)

DISCUSSION

The present study assessed the knowledge regarding nosocomial infections among staff nurses and compared the findings with previous research studies conducted in different healthcare settings. The results of this study indicated that the majority of nurses had good knowledge about nosocomial infections, particularly in relation to their definition, symptoms, transmission routes, and preventive measures.

In the current study, 99% of respondents correctly identified nosocomial infection as a hospital-acquired infection. This finding is consistent with the study conducted by Arafat et al. which reported that nurses demonstrated adequate knowledge regarding the concept and definition of nosocomial infections after receiving evidence-based infection control education. Similarly, another study conducted among nurses in Ethiopia reported that more than half of the participants had good knowledge about hospital-acquired infections and their causes.

The findings of this study showed that 99% of participants were aware that nosocomial infections develop after 48 hours of hospital admission. This result is consistent with the findings reported by WHO (2016), which defined nosocomial infections as infections occurring 48 hours or more after admission. Similar findings were reported in a study conducted in Pakistan, where nurses demonstrated good knowledge about the time of onset of hospital-acquired infections.

Regarding symptoms of nosocomial infections, 96% of participants identified fever as a common clinical manifestation. This finding is supported by previous research, which reported that nurses generally have good awareness regarding the clinical signs and symptoms of healthcare-associated infections due to their clinical exposure and training.

The present study also revealed that 91% of participants correctly identified urinary tract infection as the most common type of nosocomial infection. This finding is supported by global statistics indicating that urinary tract infections represent one of the most common hospital-acquired infections worldwide. Similar findings were reported in studies conducted in Nepal and Bangladesh, where nurses demonstrated good knowledge regarding common types of HAIs.

Furthermore, the study findings indicated that 87% of respondents recognized that patients with prolonged hospital stays are more vulnerable to nosocomial infections, and 91% identified elderly patients as a high-risk group. These results are consistent with previous studies which highlighted that older patients and those with extended hospitalization are at higher risk of acquiring healthcare-associated infections.

Regarding preventive measures, the current study showed that 98% of participants recognized hand hygiene as the most important measure for preventing nosocomial infections. This finding is strongly supported by international infection control guidelines which emphasize hand hygiene as the most effective strategy for reducing hospital-acquired infections (WHO). Similar findings were reported in a study conducted in Lahore, Pakistan, where nurses demonstrated high awareness regarding hand hygiene practices but showed variations in their actual compliance.

Despite the generally good knowledge observed in this study, a notable gap was identified regarding the importance of infection control knowledge for nurses' professional responsibility and self-protection. Only 35% of respondents recognized its importance. This finding is consistent with previous research that reported gaps between knowledge and attitude among healthcare workers toward infection control practices. Lack of training, heavy workload, and limited institutional support are often identified as factors contributing to these gaps.

Overall, the findings of the present study indicate that although staff nurses possess good knowledge regarding nosocomial infections, there is still a need for continuous education, training programs, and strict implementation of infection

Frontier in Medical & Health Research

ISSN: (e) 3007-1607 (p) 3007-1593

control policies. Strengthening infection prevention training and promoting adherence to standard precautions can significantly reduce the risk of hospital-acquired infections and improve patient safety.

CONCLUSION

The study concludes that staff nurses possess generally good knowledge regarding nosocomial infections, including their definition, symptoms, causes, transmission routes, and preventive measures. High awareness was observed in areas such as hand hygiene, environmental factors, and preventability of infections. However, a notable gap was identified in understanding the importance of nosocomial infection knowledge for professional responsibility and self-protection. Addressing this gap through continuous education, supervision, and reinforcement of infection control practices is essential to enhance patient safety and reduce hospital-acquired infections.

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