

THE ASSESSMENT OF NURSES' KNOWLEDGE AND ATTITUDE TOWARDS INFECTION CONTROL PRACTICES IN TERTIARY CARE HOSPITAL OF LAHORE, PAKISTAN

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Abstract: Infection control is a critical aspect of hospital safety, ensuring the well-being of both patients and healthcare providers. Nurses play a central role in executing infection control measures; thus, their knowledge and attitudes towards these procedures are vital for effective healthcare delivery. **Objective:** The aim of this study is to evaluate nurses' understanding of and attitudes toward infection control procedures within a hospital setting. **Methods:** This cross-sectional descriptive study was conducted in a selected hospital where data was collected from 150 nurses using a structured questionnaire after obtaining participant consent. A convenient sampling method was employed to meet inclusion criteria. The analysis focused on the levels of knowledge and attitudes toward infection control, assessed through validated survey tools. **Results:** Among the nurses surveyed, 47.3% demonstrated a high level of knowledge regarding infection control, 22.0% scored well, and 30.7% showed poor knowledge. In terms of attitudes, 94.7% of participants displayed positive attitudes towards infection control measures, whereas 5.3% exhibited negative attitudes. **Conclusion:** The study revealed that while a significant portion of nurses possess substantial knowledge regarding infection control, there is a notable percentage that requires further education to enhance their understanding. The overall positive attitude towards infection control suggests a strong foundation for implementing effective practices but highlights the need for continuous professional development to address knowledge gaps.

Keywords: Attitudes, Cross-Sectional Studies, Infection Control, Knowledge, Nurses, Questionnaires

Introduction

Infection control practices are a cornerstone of patient safety and healthcare quality in hospital settings (1). Effective infection control is crucial in preventing the spread of healthcare-associated infections (HAIs), which pose a significant threat to patient outcomes, increase healthcare costs, and contribute to the rise of antibiotic-resistant pathogens (2, 3). Nurses, being at the frontline of patient care, play a pivotal role in implementing and maintaining infection control measures (4). Their knowledge and attitude towards these practices are critical factors that influence the effectiveness of infection prevention strategies.

In Pakistan, tertiary care hospitals are often burdened with a high patient load and limited resources, making infection control a particularly challenging yet essential task. Despite the global emphasis on infection control, studies suggest that gaps in knowledge and adherence to infection control protocols among healthcare professionals remain prevalent, leading to suboptimal patient outcomes (4-6).

This study aims to assess the knowledge and attitude of nurses towards infection control practices in a tertiary care hospital in Lahore, Pakistan. Understanding the current level of knowledge and attitudes will help identify areas for improvement and guide the development of targeted interventions to enhance infection control practices in such settings.

Methodology

This study employed a cross-sectional descriptive design to assess the knowledge and attitudes of nurses towards

infection control practices in a tertiary care hospital. A cross-sectional design was chosen to capture a snapshot of the nurses' knowledge and attitudes at a single point in time, providing a basis for understanding the current state of infection control practices among this population.

The study was conducted at Sheikh Zayed Hospital, a prominent tertiary care hospital located in Lahore, Pakistan. This facility is one of the largest healthcare institutions in the region, offering a wide range of medical and surgical services and serving a diverse patient population.

The study population consisted of registered nurses employed at Sheikh Zayed Hospital in Lahore. The inclusion criteria for participation in the study were:

- Registered nurses with a minimum of one year of clinical experience.
- Nurses currently working in pediatric, emergency, medical, surgical, and intensive care units.

A convenience sampling technique was used to select the participants from the eligible population. This non-probability sampling method was chosen due to its practicality and ease of access to the target population within the hospital setting.

The sample size was calculated using Slovin's formula, which is appropriate for determining sample size when the population size is known and the margin of error is specified. Based on the total number of registered nurses at the hospital and a desired confidence level, a sample size of 150 nurses was determined to be sufficient for the study.

A structured questionnaire was developed and utilized to collect data on the nurses' knowledge and attitudes towards infection control practices. The questionnaire comprised three sections:

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1. **Demographic Information:** This section collected data on participants' age, gender, qualifications, work shift, years of experience, department, length of service, and nature of employment.

2. **Knowledge Assessment:** This section included multiple-choice questions designed to assess the participants' knowledge of infection control practices, including hand hygiene, use of personal protective equipment (PPE), sterilization procedures, and protocols for managing infectious patients.

3. **Attitude Assessment:** This section used a Likert scale to evaluate the participants' attitudes towards the importance and implementation of infection control practices in their daily work.

Data collection was carried out over a period of one month. Participants were approached during their shifts, and the purpose of the study was explained. Written informed consent was obtained from each participant prior to administering the questionnaire. The participants were assured of the confidentiality and anonymity of their responses.

The collected data were entered and analyzed using statistical software. Descriptive statistics, including frequencies and percentages, were used to summarize the demographic characteristics, knowledge scores, and attitude scores of the participants. The knowledge scores were categorized as excellent, good, or poor based on the participants' responses to the knowledge assessment questions. Attitude scores were classified as positive or negative based on the participants' Likert scale responses.

The study was conducted in accordance with ethical standards and received approval from the Institutional Review Board (IRB) of Sheikh Zayed Hospital, Lahore. Participants were informed of their right to withdraw from

the study at any time without any consequences. All data were kept confidential and used solely for research purposes.

Results

Table 1 presents a comprehensive breakdown of the demographic characteristics of the 150 participants involved in the study. The vast majority of participants (97.3%) were between the ages of 21 and 30, while only 2.7% were between the ages of 31 and 40. It's important to note that all participants in the study were female.

Regarding educational qualifications, a significant proportion of participants (88.0%) held a BSN Post RN degree, while 9.3% had a diploma in General nursing and Midwifery, and 2.7% had a BSN Generic degree.

Most participants (94.7%) worked the morning shift, with the remaining 5.3% working the evening shift. In terms of professional experience, 81.3% had between 1-3 years of experience, 16.0% had 4-6 years of experience, and only 2.7% had 7-10 years of experience.

The department distribution shows that half of the participants (50.0%) were working in the Emergency department, 34.0% in Medical Wards, and 16.0% in Pediatric Wards.

When considering the length of service, 58.0% of the participants had been in service for up to 1 year, 30.7% for 2-5 years, 8.7% for 6-10 years, and 2.7% for more than 10 years.

Finally, regarding the nature of employment, 42.7% of the participants were employed on a permanent basis, 25.3% were on contractual terms, and 32.0% fell into other categories of employment.

Table 1: Demographic Characteristics of Study Participants (N=150)

Characteristic	Category	Frequency (n)	Percent (%)
Age	21-30 years	146	97.3
	31-40 years	4	2.7
Gender	Female	150	100.0
Qualification	Diploma in General Nursing and Midwifery	14	9.3
	BSN Generic	4	2.7
	BSN Post RN	132	88.0
Shift	Morning	142	94.7
	Evening	8	5.3
Experience	1-3 years	122	81.3
	4-6 years	24	16.0
	7-10 years	4	2.7
Department	Medical Wards	51	34.0
	Emergency	75	50.0
	Pediatric Wards	24	16.0
Length of Service	Up to 1 year	87	58.0
	2-5 years	46	30.7
	6-10 years	13	8.7
	10+ years	4	2.7
Nature of Employment	Contractual	38	25.3
	Permanent	64	42.7
	Others	48	32.0

Out of the 150 participants, almost half (47.3%) showed excellent knowledge of the study topic, indicating a strong

understanding among a significant portion of the participants. A smaller group (22.0%) displayed good

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knowledge, suggesting they have a decent grasp of the subject but with room for improvement. The remaining 30.7% of participants showed poor knowledge, highlighting a need for educational interventions to enhance their understanding.

The overwhelming majority (94.7%) of the participants had a positive attitude towards the subject matter, which is promising for the implementation of related practices or

interventions. Only a small fraction (5.3%) exhibited a negative attitude, suggesting that while most participants are receptive, there is a minority who may require additional motivation or information to align their attitudes positively. (Table 2) These findings provide crucial insights into the levels of knowledge and attitudes among the participants, which can inform targeted educational or training programs to address gaps and reinforce strengths.

Table 2: Knowledge and Attitude Scores of Study Participants (N=150)

Score	Category	Frequency (n)	Percent (%)
Knowledge Score	<i>Excellent Knowledge</i>	70	47.3
	<i>Good Knowledge</i>	35	23.3
	<i>Poor Knowledge</i>	45	30.7
Attitude Score	<i>Positive Attitude</i>	140	94.7
	<i>Negative Attitude</i>	10	5.3

Discussion

The results of this study reveal critical insights into the knowledge and attitudes of nurses regarding infection control practices at Sheikh Zayed Hospital, Lahore. The findings indicate that while a significant proportion of nurses possess excellent knowledge (47.3%) and a positive attitude (94.7%) towards infection control, there remains a considerable gap in knowledge, with 30.7% of participants demonstrating poor knowledge. These results align with findings from other recent studies, though they also highlight areas requiring improvement.

In a similar study conducted by Ahmed et al. (2020) in a tertiary care hospital in Karachi, Pakistan, it was reported that 45% of nurses had excellent knowledge of infection control practices, which is comparable to the 47.3% found in this study (7). However, Ahmed et al. also noted a higher proportion of nurses (35%) with poor knowledge, suggesting that while there are similarities, the specific context and institutional differences might play a role in the observed variations (7).

Another study by Siraj et al. (2022) conducted in Islamabad found that 92% of nurses had a positive attitude towards infection control, closely mirroring the 94.7% found in this study (8). This widespread positive attitude is promising and suggests that nurses generally recognize the importance of infection control in clinical settings. However, Saeed et al. also pointed out that despite positive attitudes, adherence to infection control protocols was not always consistent, which might be due to factors such as workload, resource availability, and institutional support.

The disparity in knowledge levels observed in this study is consistent with the findings of Javed and Khan (2022), who reported that although 48% of nurses in their study had good knowledge, about 28% lacked adequate understanding of key infection control measures (9). This suggests that while there is a foundational knowledge among many nurses, continuous education and training are essential to bridge the gaps, particularly in areas such as the correct use of personal protective equipment (PPE) and hand hygiene practices.

A recent study by Yasmeen et al. (2022) emphasized the impact of continuous professional development on improving nurses' knowledge and attitudes towards infection control (10). The study found that targeted training programs significantly enhanced both knowledge and compliance with infection control practices. This finding is

pertinent as it underscores the need for ongoing education and training initiatives, especially for the 30.7% of nurses in this study who demonstrated poor knowledge.

The results also resonate with international findings. For example, a study in Saudi Arabia by Salem et al. (2019) found that 49% of nurses had excellent knowledge of infection control practices, similar to the 47.3% in this study. However, the study highlighted that organizational factors, such as the availability of infection control resources and administrative support, played a critical role in enhancing both knowledge and compliance (11).

Overall, the results of this study indicate that while there is a strong foundation of knowledge and a generally positive attitude among nurses at Sheikh Zayed Hospital, targeted interventions are needed to address the knowledge gaps and reinforce infection control practices. Continuous professional education, adequate resource allocation, and institutional support are crucial to achieving this goal.

Conclusion

This study assessed the knowledge and attitudes of nurses towards infection control practices in a tertiary care hospital in Lahore, Pakistan. The findings reveal that while a substantial number of nurses possess excellent knowledge and a positive attitude towards infection control, there is still a significant portion with inadequate knowledge. These gaps highlight the need for continuous professional development and targeted training programs to ensure all nurses are equipped with the necessary knowledge and skills to effectively implement infection control measures. Strengthening these practices is crucial for improving patient safety and minimizing the risk of healthcare-associated infections in the hospital setting.

Declarations

Data Availability statement

All data generated or analyzed during the study are included in the manuscript.

Ethics approval and consent to participate

Approved by the department Concerned.

Consent for publication

Approved

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Conflict of interest

The authors declared absence of conflict of interest.

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Data entry and Data analysis, drafting article.

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