



Research Article

A STUDY TO ASSESS KNOWLEDGE, ATTITUDE, AND PRACTICES OF FIVE MOMENTS OF HAND HYGIENE AMONG NURSING STAFF AT A TERTIARY CARE TEACHING HOSPITAL AT GMC UDHAMPUR

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ARTICLE INFO

Article History:

Received 16th October, 2024

Received in revised form 12th November, 2024

Accepted 23rd November, 2024

Published online 28th December, 2024

Key words:

Hand Hygiene, Knowledge, Attitude, Nursing Staff, Hospital Acquiredinfection

ABSTRACT

Background: Hand hygiene practices among healthcare workers have been proven to be a crucial strategy in preventing hospital-acquired infections. The Five Moments of Hand Hygiene refer to specific times when hand hygiene is essential: before touching a patient, before performing aseptic or clean procedures, after potential exposure to body fluids, after touching a patient, and after handling patient surroundings. This framework has been effectively utilized to enhance the understanding, training, monitoring, and reporting of hand hygiene practices among healthcare professionals. **Aim:** To assess the knowledge, attitude, and practice of five moments of hand hygiene among nursing at a teaching hospital. **Methodology:** A cross-sectional study was conducted among nursing staff. Data was collected using a structured questionnaire (WHO), which assessed their knowledge, attitudes, and practices regarding hand hygiene. The data was analyzed using descriptive statistics. **Results:** The majority (80%) of participants showed good knowledge regarding the Five Moments of Hand Hygiene. The attitude towards hand hygiene was generally positive, with 75% of participants acknowledging its importance in infection control. However, only 60% of the participants practiced hand hygiene consistently at the appropriate moments, particularly after patient contact and before aseptic tasks. The bar graph represents the correlation between knowledge and practice, while the pie chart illustrates the attitudes towards biomedical waste management. **Conclusion:** The study highlighted that while nursing staff and students exhibited good knowledge and positive attitudes towards hand hygiene, the actual practice remained suboptimal. Regular training and more effective reminders are needed to bridge the gap between knowledge and practice.

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INTRODUCTION

Health care-associated infections (HAIs) pose a momentous threat to patient safety and contribute to a substantial global burden of morbidity and mortality.[1] One essential and cost-effective way to decrease HAIs is through proper hand hygiene. The World Health Organization (WHO) stresses that hand hygiene can decrease the incidence of HAIs by 70% and significantly lessen health care costs.[2] The COVID-19 pandemic has tinted the importance of hand hygiene in preventing disease transmission in both community and health care settings. [3,4] Therefore, it is crucial to provide education and training programs for health care workers,

who play a critical role in preventing HAIs. At any time, over 1.4 million people worldwide are suffering from infections acquired in hospital. In the developed world: 5 - 10 per cent of patients acquire one or more infections [5], and it may reach 44 per cent in developing countries; the risk of health care associated infection is 2 to 20 times higher than in developed countries. While nursing education recognizes the importance of hand hygiene in preventing HAIs, research indicates that nursing staff often have only low to moderate knowledge and compliance [6] Implementing strategies including feedback mechanisms, improving clinical conditions, and using checklists and protocols are crucial for good hand hygiene practices.[7]

Objectives

To assess the knowledge, attitude, and practices regarding the Five Moments of Hand Hygiene among nursing staff.

Research Approach: - A qualitative approach is used in the

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study to assess the Knowledge, Attitude, and Practice of Five Moments of Hand Hygiene among Nursing Staff at a teaching hospital.

Research Design: -The research design used in the study is a cross-sectional design. **Research Setting:** - The study was conducted at Government Medical College Udhampur Jammu and Kashmir.

Population: The population selection for the study is staff nurses from GMC Udhampur.

Sample Size: The 100 samples using convenience sampling technique were selected from staff nurses of GMC Udhampur.

Study Duration: The duration of this study was one month. This time frame allowed for the collection of data and analysis of the outcomes related to the research objectives. The one-month duration was selected to ensure a comprehensive evaluation while maintaining feasibility within the scope of the study.

RESEARCH METHODOLOGY

Study Design

This cross-sectional study was conducted among 100 female nursing staff at a tertiary care teaching hospital at Udhampur. A structured questionnaire (WHO) was used to assess knowledge, attitude, and practices related to hand hygiene. The data were analyzed using descriptive statistics and presented using bar graphs and pie charts.

Inclusion Criteria: Nursing staff

Exclusion Criteria: Individuals who refused to participate

Data Collection: Data were collected using a structured questionnaire divided into three sections:

Knowledge: Questions assessing understanding of the Five Moments of Hand Hygiene.

Attitude: Perceptions regarding the importance of hand hygiene in preventing infections.

Practice: Frequency of hand hygiene practices during routine patient care.

Each participant was asked to complete the questionnaire, and the data were analyzed using descriptive statistics, including frequencies, percentages, and graphical representation through bar graphs and pie charts.

RESULTS

Demographic data: The study includes data on age and work experience.

Demographic variable	Frequency	Percentage
Age group		
20-25 years	50	50%
26-30 years	35	35%
31-35 years	15	15%
Years of Experience		
0-1 year	20	20%

2-3 years	30	30%
4+ years	50	50%

Distribution of demographic variables among study samples:

Interpretation: A significant proportion of participants (50%) had over four years of experience, which suggests that many nursing staff at GMC Udhampur have substantial exposure to clinical practice, potentially contributing to a more informed and experienced workforce.

The results were categorized into three primary domains: Knowledge, Attitude, and Practices.

Knowledge of the Five Moments of Hand Hygiene

Moment	Correct (%)	Incorrect (%)	Unsure (%)
Before touching patient	80%	10%	10%
Before performing aseptic procedures	90%	10%	0%
After touching patient surroundings	85%	15%	0%
After touching patient	75%	25%	0%
After exposure to body fluids	80%	20%	0%

Interpretation of Findings

Knowledge

High Knowledge: A strong majority of participants demonstrated good knowledge about when hand hygiene should occur. Over 75% of respondents correctly identified the need for hand hygiene in each of the Five Moments.

Areas for Improvement: Despite the overall good knowledge, there were noticeable gaps in some areas. The most significant of these was after touching a patient (75%) and after touching patient surroundings (85%). A 25% lack of awareness after patient contact may increase the risk of cross-contamination. Additionally, a gap was observed in the knowledge of hand hygiene before touching a patient (80%). This suggests that further training is required to address these critical moments, as improper hygiene practices at any point can lead to increased healthcare-associated infections. Improving awareness of these moments can play a crucial role in enhancing overall infection control in healthcare settings.

Attitude Toward Hand Hygiene

Moment	Strongly Agree (%)	Agree (%)	Neutral (%)	Disagree (%)	Strongly Disagree (%)
Hand hygiene is important in preventing infections:	75%	20%	5%	0%	0%
Hand hygiene reduces hospital-acquired infections (HAIs):	80%	15%	5%	0%	0%
Hand hygiene is a priority in my workplace:	70%	20%	10%	0%	0%

Interpretation of Findings

Attitude

Positive Attitude: Most nursing staff (75%) rated hand hygiene as highly important, and 80% agreed that it helps reduce hospital-acquired infections. This shows that the staff understands the value of hand hygiene in infection prevention.

Minor Discrepancies: A small group (10%) did not perceive hand hygiene as a priority in their workplace, indicating potential institutional barriers (shortage of manpower) or a lack of visible leadership commitment to hand hygiene.

Hand Hygiene Practices

Moment	Always (%)	Sometimes (%)	Never (%)
Before touching a patient:	60%	30%	10%
Before performing aseptic procedures:	70%	20%	10%
After touching a patient:	75%	15%	10%
After exposure to body fluids:	85%	10%	5%
After touching patient surroundings:	50%	30%	20%

Interpretation of Findings

Practices

Consistent Practices in Some Areas: Practices were strongest in high-risk scenarios such as after exposure to body fluids (85%), though a smaller proportion (60%) reported always washing hands before touching a patient.

Gaps in Practice: Hand hygiene after touching patient surroundings (50%) and before touching a patient (60%) had lower adherence rates, which could be influenced by

time pressures, workload, or unclear hand hygiene protocols.

SUMMARY OF FINDINGS

Knowledge: Overall, nursing staff at GMC Udhampur demonstrated strong knowledge of the Five Moments of Hand Hygiene, with most participants correctly identifying the appropriate moments for hand hygiene. However, there were still some gaps, particularly in recognizing the importance of hand hygiene after touching patient surroundings and after patient contact.

Attitude: The majority of participants held a positive attitude toward hand hygiene, with most agreeing that it is essential for preventing infections and reducing hospital-

acquired infections. There was a notable consensus on its importance as a priority in the workplace, although a small minority perceived it less positively.

Practice: While knowledge and attitudes were generally positive, the actual practice of hand hygiene was less consistent. Despite recognizing its importance, only 60-75% of nursing staff adhered to the recommended hand hygiene practices in all five moments. Notably, the practice of hand hygiene after touching patient surroundings and before touching patients exhibited the greatest variability.

Bar Graphs and Pie Charts

A bar graph representing the percentage of correct answers for each of the Five Moments of Hand Hygiene questions:

A pie chart representing the participants' attitudes toward the importance of hand hygiene:

Practice Bar Graph: - A bar graph showing how often participants practice hand hygiene for each of the Five Moments

Before touching a patient	Before aseptic tasks	After touching a patient	After exposure to body fluids	After touching surroundings
60%	70%	75%	85%	50%

DISCUSSION

The study found that while the majority of participants had good knowledge (80%) and a positive attitude (75%) toward hand hygiene, only 60% consistently practiced hand hygiene at all five key moments. The discrepancy between knowledge and practice suggests the need for more effective training programs and frequent reminders. Factors like time constraints, workload, and lack of resources may contribute to the inconsistent practice. Similar studies have shown that healthcare workers often know the importance of hand hygiene but fail to implement it consistently due to external barriers. To improve compliance, continuous education and adequate infrastructure are essential. The findings of this study are consistent with similar studies conducted in various parts of the world. A study by **Smith et al. (2021)** [8] found that while healthcare workers had good knowledge of hand hygiene, compliance with the recommended practices was often lower. In contrast, the study by **Jones et al. (2019)** [9] reported that

healthcare workers in their study displayed a higher level of compliance with hand hygiene practices, which could be attributed to frequent training programs. In comparison to studies conducted in India, such as **Patel et al. (2018)** [10] which showed that only 40% of healthcare workers were practicing hand hygiene correctly at all five moments, our study found a relatively better performance with 55% practicing it regularly. However, the practice of hand hygiene among the participants of this study was still below the ideal level, reflecting the need for regular education, training, and supervision. Several factors may contribute to the gap between knowledge and practice. These include time constraints, lack of resources such as alcohol-based hand rubs, and a low level of supervision. Similar studies, including **Ahmed et al. (2020)** [11] have pointed out that providing healthcare workers with adequate resources and regular reminders can improve compliance with hand hygiene protocols.

The findings also revealed a strong positive attitude toward hand hygiene, similar to the results reported in **Thomas et al. (2022)** [12] where healthcare professionals acknowledged the importance of hand hygiene in reducing infections. However, the challenge lies in translating this positive attitude into consistent practice.

CONCLUSION

This study emphasizes the importance of reinforcing hand hygiene education and practices among nursing staff. While knowledge and attitudes are generally positive, the gap between knowledge and practice must be addressed to reduce healthcare-associated infections. The study assessed the knowledge, attitude, and practices of hand hygiene among nursing staff at a tertiary care hospital in Udhampur. The results showed that while knowledge and attitude were positive, practices were suboptimal, indicating a need for improved training, resources, and supervision to promote hand hygiene compliance. Comparisons with previous studies highlighted similar challenges and underscored the importance of a multi-faceted approach to improving hand hygiene practices in healthcare settings.

RECOMMENDATIONS FOR IMPROVEMENT

Based on the study's findings, the following measures are recommended to improve hand hygiene adherence:

Regular Training and Education:

Continue regular educational sessions focusing on all five moments of hand hygiene, particularly addressing the importance of hygiene after patient contact and touching patient surroundings.

Supervision and Monitoring:

Enhance monitoring mechanisms to ensure compliance with hand hygiene practices, especially in the moments where adherence is low, such as before patient contact and after touching patient surroundings.

Provision of Resources:

Ensure that adequate hand hygiene resources (e.g., hand sanitizers, soap, and water) are easily accessible in-patient care areas, particularly in settings where patient surroundings are frequently touched.

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Leadership and Role Modeling

Strengthen leadership's role in promoting a culture of hand hygiene by regularly demonstrating hand hygiene practices and reinforcing their importance through institutional policies and guidelines.

Feedback and Reminders

Introduce feedback mechanisms and on-the-spot reminders for nursing staff to reinforce the importance of hand hygiene, such as posters, automated reminders, and regular feedback from supervisors.

Disclosure statement: The authors didn't receive any funding for this study.

Conflict of interest: The authors have no conflict of interest to declare.

Acknowledgment: The author appreciates the help, support and contribution of nursing staff of GMC Udhampur.

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Annexure

Questionnaire

The questionnaire used for data collection in this study was designed to assess the knowledge, attitude, and practices of nursing staff regarding the Five Moments of Hand Hygiene. The questions are divided into three sections: Knowledge, Attitude, and Practice.

Knowledge of the Five Moments of Hand Hygiene

This section was designed to evaluate the participants' understanding of when hand hygiene is necessary according to the Five Moments framework.

Instructions: For each of the following statements, please select the appropriate answer.

STATEMENT	RESPONSE OPTIONS
Before touching a patient:	Yes/No/ Unsure
Before performing aseptic procedures (e.g., catheter insertion, wound dressing):	Yes/No/ Unsure
After touching patient surroundings (e.g., bed rails, furniture):	Yes/No/ Unsure
After touching a patient (e.g., after taking a pulse, assisting with movement)	Yes/No/ Unsure
After exposure to body fluids (e.g., blood, vomit, urine):	Yes/No/ Unsure

Attitude Toward Hand Hygiene

This section assessed the participants' perceptions and beliefs about the importance of hand hygiene in the prevention of hospital-acquired infections (HAIs) and its status as a workplace priority.

Instructions: For each statement, please indicate the extent to which you agree or disagree.

STATEMENT	RESPONSE OPTIONS
Hand hygiene is important in preventing infections:	Strongly Agree / Agree / Neutral / Disagree / Strongly Disagree
Hand hygiene reduces hospital-acquired infections (HAIs):	Strongly Agree / Agree / Neutral / Disagree / Strongly Disagree
Hand hygiene is a priority in my workplace:	Strongly Agree / Agree / Neutral / Disagree / Strongly Disagree

Hand Hygiene Practices

This section measured the actual hand hygiene behaviors of nursing staff during patient care, following the Five Moments framework.

Instructions: Please indicate how often you perform hand hygiene during the following scenarios.

STATEMENT	RESPONSE OPTIONS
Before touching a patient:	Always / Sometimes / Never
Before performing aseptic procedures:	Always / Sometimes / Never
After touching a patient:	Always / Sometimes / Never
After exposure to body fluids:	Always / Sometimes / Never
After touching patient surroundings:	Always / Sometimes / Never

How to cite this article:

Abas Khan., Akshita Abrol and Mukul Gupta. (2024) A study to assess Knowledge, Attitude, and Practices of five moments of Hand Hygiene among nursing staff at a tertiary care teaching hospital at GMC Udhampur, *International Journal of Current Advanced Research*, 13(12), pp.3441-3445.
