

# Hand Hygiene Practices Among Nurses: A Review Article

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**Abstract**—Hand hygiene is a cornerstone of infection prevention in healthcare settings. Nurses, as frontline caregivers, play a pivotal role in preventing healthcare-associated infections (HAIs) through consistent and proper hand hygiene. This review explores the principles, practices, challenges, and educational strategies associated with hand hygiene among nurses. The article also discusses behavioural, institutional, and conceptual factors influencing compliance. Understanding these factors is essential for improving nursing practice and patient safety.

## I. INTRODUCTION

Hand hygiene is recognized as one of the simplest and most effective measures to prevent the transmission of infectious agents in healthcare facilities. Nurses, due to their continuous contact with patients and the healthcare environment, are key contributors to infection control. Despite its importance, adherence to proper hand hygiene practices among nurses remains inconsistent worldwide.

Challenges include high workload, forgetfulness, lack of accessible facilities, and variations in knowledge or attitudes toward hygiene protocols. Education, awareness programs, and behavioural interventions have been proposed to enhance compliance, though the effectiveness of these strategies varies across setting. Conceptually, hand hygiene represents both a technical skill and a professional responsibility critical to nursing ethics and patient advocacy.

## II. CONCEPTUAL OVERVIEW OF HAND HYGIENE PRACTICES

Hand hygiene involves the removal or destruction of transient microorganisms on the hands through handwashing with soap and water or alcohol-based hand rubs. The World Health Organization (WHO)

identifies five critical moments for hand hygiene in clinical practice.

- 1) Before touching a patient
- 2) Before aseptic procedures
- 3) After exposure to body fluids
- 4) After touching a patient
- 5) After touching patient surroundings

These moments provide a conceptual framework for understanding nursing responsibilities and prioritizing infection control during routine care.

## III. FACTORS INFLUENCING HAND HYGIENE COMPLIANCE

### 1. Knowledge and Education:

Proper training and educational programs improve nurses' understanding of hygiene principles and techniques. Studies indicate that repeated education, simulation exercises, and reminders enhance adherence.

### 2. Behavioural Factors:

Nurses' attitudes, perceived importance, and habitual behaviours significantly affect compliance. Behavioural interventions, such as prompts, peer modelling, and feedback, encourage sustained practice.

### 3. Institutional Support:

Availability of handwashing facilities, alcohol-based hand rubs, and organizational culture supporting infection prevention are critical determinants of compliance.

### 4. Ethical and Professional Responsibility:

Hand hygiene reflects the nurse's ethical obligation to protect patient safety. Consistent practice demonstrates professional accountability and advocacy for patient well-being.

#### IV. CHALLENGES AND BARRIERS

Despite awareness, adherence to hand hygiene protocols is often suboptimal. Common barriers include:

- High patient-to-nurse ratios leading to time constraints
  - Forgetfulness or lack of reminders
  - Skin irritation due to repeated handwashing
  - Perceived inconvenience of hand hygiene procedures
  - Gaps in institutional enforcement or monitoring
- Addressing these barriers requires combined strategies targeting knowledge, behaviour, and the healthcare environment.

#### Educational and Conceptual Strategies for Improvement

Conceptual and educational strategies focus on promoting understanding, awareness, and positive behavioural change. Examples include:

- Structured training programs and workshops
- Simulation-based practice
- Visual reminders and electronic monitoring systems
- Mentorship and role-modelling by senior nurses

These approaches enhance both technical skill and conceptual appreciation of the role of hand hygiene in patient safety

#### V. CONCLUSION

Hand hygiene among nurses is a fundamental aspect of safe clinical practice. While technical skill is essential, conceptual understanding, ethical responsibility, and institutional support are equally important. Nursing education, behavioural strategies, and organizational initiatives collectively influence adherence and sustainability. By emphasizing knowledge, professional responsibility, and supportive environments, healthcare facilities can improve hand hygiene compliance and reduce the risk of healthcare-associated infections.

#### VI. DISCUSSION

Hand hygiene remains one of the most effective and cost-efficient measures for preventing healthcare-

associated infections (HAIs), yet compliance among nurses continues to be inconsistent despite widespread awareness of established guidelines. Adherence is influenced by a complex interplay of knowledge, behavioural patterns, institutional culture, and ethical responsibility. While educational interventions improve understanding and technical competence, knowledge alone does not ensure sustained behavioural change, particularly in high-workload environments where time constraints and workflow pressures may hinder compliance. Institutional factors, including leadership support, availability of hand hygiene resources, and a strong culture of patient safety, significantly enhance adherence by reinforcing professional accountability. Furthermore, framing hand hygiene as an ethical obligation grounded in patient advocacy and the principle of nonmaleficence may strengthen intrinsic motivation among nurses. Addressing barriers such as forgetfulness, skin irritation, and limited monitoring systems requires integrated, multifaceted strategies that combine education, behavioural reinforcement, and organizational commitment. Ultimately, sustainable improvement in hand hygiene practices depends on embedding infection prevention into daily clinical routines, professional identity, and healthcare safety culture.

#### VII. RECOMMENDATIONS

1. Strengthen Nursing Education: Incorporate structured, ongoing training programs, workshops, and simulation-based practice to reinforce technical skills and conceptual understanding.
2. Promote Behavioural Interventions: Use reminders, peer modelling, and feedback systems to encourage habitual hand hygiene.
3. Enhance Institutional Support: Ensure accessible hand hygiene resources and foster a culture of patient safety through leadership engagement and clear infection control policies.
4. Integrate Ethical and Professional Accountability: Emphasize hand hygiene as an ethical obligation and core aspect of professional responsibility.
5. Implement Monitoring and Feedback Systems: Use non-punitive audits, electronic monitoring, and regular feedback to improve compliance.

6. Address Practical Barriers: Provide moisturizers, optimize workflow, and maintain hand hygiene facilities in clinical areas.
7. Tailor Interventions to Context: Adapt strategies to specific units, recognizing variation in patient populations and care settings.

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