



THE ROLE OF NURSING CARE IN THE PREVENTION OF HOSPITAL-ACQUIRED INFECTIONS

Abdullayeva charos sayfullo qizi¹

Teshayeva farangiz Tavvakalovna²

Gijduvon Public health technician named after Abu Ali ibn Sino^{1,2}

Abstract

Hospital-acquired infections (HAIs) remain one of the most significant challenges in healthcare systems worldwide. They increase patient morbidity and mortality, prolong hospitalization, and raise healthcare costs. Nurses play a central role in preventing HAIs through evidence-based infection control practices, patient education, and continuous monitoring. This review aims to analyze the current role of nursing care in preventing hospital-acquired infections and identify strategies that improve patient safety. Literature from international databases published between 2019 and 2025 was reviewed. The findings demonstrate that adherence to hand hygiene, aseptic techniques, environmental sanitation, and patient education significantly reduces infection rates. Continuous professional training and institutional support are essential for improving nursing practice and healthcare quality.

Keywords: nursing care, hospital-acquired infections, infection prevention, patient safety, hand hygiene, evidence-based nursing

Introduction

Hospital-acquired infections continue to be a major public health concern worldwide. According to the World Health Organization, hundreds of millions of patients develop healthcare-associated infections annually, leading to increased mortality, prolonged hospital stays, and substantial economic losses. The incidence of HAIs is particularly high in low- and middle-income countries due to limited



resources, inadequate infection control measures, and shortages of trained healthcare personnel.

Nurses spend the greatest amount of time in direct patient care and therefore have a crucial responsibility in preventing infection transmission. Their daily activities include medication administration, wound care, catheter management, patient education, and monitoring for early signs of infection. Proper nursing interventions not only reduce infection rates but also improve patient outcomes and healthcare efficiency.

Materials and Methods

This review article was prepared using scientific literature obtained from PubMed, Scopus, Web of Science, ScienceDirect, and Google Scholar. Articles published in English between 2019 and 2025 were included. Keywords used for searching included "nursing care," "hospital-acquired infection," "infection prevention," "hand hygiene," "patient safety," and "evidence-based nursing."

The selected articles were analyzed according to:

- relevance to nursing practice;
- quality of evidence;
- study methodology;
- clinical applicability.

Results

The literature consistently demonstrates that nurses significantly contribute to infection prevention through standardized clinical practice.

Hand Hygiene

Hand hygiene remains the single most effective intervention for preventing healthcare-associated infections. Compliance with WHO's "Five Moments for Hand Hygiene" has been shown to reduce infection rates by up to 50%.

Aseptic Technique



Strict adherence to aseptic principles during invasive procedures minimizes microbial contamination and reduces bloodstream, urinary tract, and surgical site infections.

Catheter Care

Appropriate catheter insertion, maintenance, and timely removal significantly reduce catheter-associated urinary tract infections (CAUTIs).

Wound Management

Evidence-based wound care performed by trained nurses promotes faster healing and decreases surgical site infections.

Environmental Hygiene

Regular cleaning and disinfection of patient environments reduce microbial contamination and cross-transmission of pathogens.

Patient Education

Educating patients and family members about personal hygiene, medication adherence, wound care, and infection prevention contributes to improved health outcomes after discharge.

Discussion

The findings confirm that nursing interventions are fundamental components of infection prevention programs. Numerous studies have demonstrated that hospitals implementing structured nursing education and infection surveillance programs experience significantly lower HAI rates.

Continuous education improves nurses' knowledge, practical skills, and compliance with infection prevention guidelines. Leadership support, adequate staffing, and availability of personal protective equipment are also associated with improved nursing performance.

Furthermore, evidence-based nursing practice promotes standardized care protocols, reducing variability in clinical procedures and improving patient safety.



Digital technologies such as electronic health records, automated infection surveillance systems, and clinical decision support tools increasingly assist nurses in identifying infection risks early and implementing timely interventions.

Nursing Recommendations

Effective nursing practice should include:

1. Strict adherence to WHO hand hygiene guidelines.
2. Regular assessment of infection risk.
3. Proper use of personal protective equipment.
4. Safe medication administration.
5. Daily evaluation of invasive devices.
6. Patient and family education.
7. Documentation of infection control measures.
8. Continuous professional education.
9. Participation in infection surveillance programs.
10. Multidisciplinary collaboration.

Conclusion

Hospital-acquired infections remain a preventable cause of patient morbidity and mortality. Nurses play a vital role in reducing infection risks through evidence-based clinical practice, patient education, and continuous monitoring. Strengthening nursing competencies, improving infection prevention protocols, and supporting continuous professional development are essential for enhancing healthcare quality and patient safety.

References (APA Style)

1. World Health Organization. (2024). *Global Report on Infection Prevention and Control*. Geneva: WHO.
2. Centers for Disease Control and Prevention. (2024). *Healthcare-Associated Infections*. <https://www.cdc.gov>



3. Allegranzi, B., et al. (2022). Global implementation of infection prevention and control. *The Lancet Infectious Diseases*, 22(5), 615–626.
4. Stone, P. W., et al. (2021). Nursing interventions to reduce healthcare-associated infections. *American Journal of Infection Control*, 49(6), 715–722.
5. Pittet, D., & Boyce, J. M. (2020). Hand hygiene and patient safety. *The Lancet*, 395(10227), 1045–1056.
6. European Centre for Disease Prevention and Control. (2023). *Healthcare-associated infections surveillance report*.
7. International Council of Nurses. (2022). *Nursing and Patient Safety Guidelines*.
8. Hinkle, J. L., & Cheever, K. H. (2022). *Brunner & Suddarth's Textbook of Medical-Surgical Nursing* (15th ed.). Wolters Kluwer.
9. Potter, P. A., Perry, A. G., et al. (2023). *Fundamentals of Nursing* (11th ed.). Elsevier.
10. Smith, R., Johnson, T., & Brown, L. (2024). Evidence-based nursing interventions in infection prevention. *Journal of Clinical Nursing*, 33(2), 215–227.