

**IMPLEMENTATION NURSING CARE APPLICATION OF THE  
HEALTH BELIEF MODEL (HBM) ON HAND HYGIENE  
COMPLIANCE IN THE FLAMBOYAN ROOM OF THE TENTARA  
HOSPITAL LEVEL IV**

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**Abstract**

*Nurses' compliance in handwashing is an important aspect in preventing nosocomial infections in healthcare facilities. Infections that occur in hospitals not only prolong the length of patient stay. However, the level of nurses' compliance with hand hygiene in various healthcare facilities is still low. This paper aims to analyze the implementation of nurses' hand hygiene compliance in the Flamboyant room of the Army Hospital Class IV. The method used is a case study Pretest and Posttest. Interventions in the form of education and demonstration of five moments and six steps of hand hygiene were carried out for two days on August 8-9, 2025, which were carried out during the morning and afternoon shift handovers with 4 nurses in the Flamboyant room of the Tentara Hospital Class IV. The author used the Health Belief Model (HBM) questionnaire instrument and the Hand Hygiene observation sheet. The evaluation results showed a significant increase in compliance scores from pretest to posttest values in two implementing nurses. In nurse 1, the questionnaire pretest results were 12 and the observation results were 58%. In nurse 2, the questionnaire pretest results were 15 and the observation results were 50%. In nurse 3, the questionnaire pretest results were 11 and the observation scores were 55%. In nurse 4, the questionnaire pretest results were 11 and the observation results were 50%. After 2 days of implementation, the posttest results were obtained, namely in nurse 1, the questionnaire posttest results were 21 and the observation results were 83%. In nurse 2, the questionnaire posttest results were 24 and the observation results were 91%. Nurse 3 received a post-test questionnaire score of 24 and an observation result of 84%, and nurse 4 received a post-test questionnaire score of 22 and an observation result of 91%. The application of the HBM model has been shown to increase nurses' awareness and compliance with hand hygiene practices. This study recommends integrating the HBM model into routine nursing training to improve service quality and patient safety.*

**Keyword:** hand hygiene, nurses, Health Belief Model (HBM), compliance

**INTRODUCTION**

Patient safety has become the main focus of hospital services worldwide. One of the six patient safety goals (SKP) is reducing the risk of healthcare-associated infections. Nosocomial infections remain a serious issue that increases morbidity, mortality, and treatment costs. Nurses' compliance with handwashing is a key factor in preventing the spread of pathogenic microorganisms.

The Health Belief Model (HBM) is a theory that explains health behavior based on an individual's perception of susceptibility, severity, benefits, barriers, and cues to action. In the context of hand hygiene compliance, this model helps explain why nurses do or do not perform hand hygiene. Based on a preliminary study in the Flamboyant Ward of TK IV Military Hospital on July 29, 2025, four nurses were found not to perform hand hygiene before and after procedures. Hand hygiene facilities were inadequate, and no educational posters

were available. This highlights the need to apply the HBM model to improve hand hygiene compliance.

### RESEARCH METHODS

This study used a case study design with a pretest-posttest approach. The population consisted of four nurses in the Flamboyan Ward of TK IV Military Hospital. The intervention included education and demonstration on the five moments and six steps of hand hygiene. Data were collected using an HBM-based questionnaire and a hand hygiene observation sheet. The implementation took place over two days, August 8–9, 2025.

### RESEARCH RESULTS

The pretest results showed low compliance levels, with questionnaire scores ranging from 11–15 and observation results of 50–58%. After the two-day intervention, posttest scores increased to 21–24 and observation results to 83–91%. This demonstrates a significant improvement in nurses' awareness and handwashing behavior. The author used the Health Belief Model (HBM) questionnaire instrument and the Hand Hygiene observation sheet. The evaluation results showed a significant increase in compliance scores from pretest to posttest values in two implementing nurses. In nurse 1, the questionnaire pretest results were 12 and the observation results were 58%. In nurse 2, the questionnaire pretest results were 15 and the observation results were 50%. In nurse 3, the questionnaire pretest results were 11 and the observation scores were 55%. In nurse 4, the questionnaire pretest results were 11 and the observation results were 50%. After 2 days of implementation, the posttest results were obtained, namely in nurse 1, the questionnaire posttest results were 21 and the observation results were 83%. In nurse 2, the questionnaire posttest results were 24 and the observation results were 91%. Nurse 3 received a post-test questionnaire score of 24 and an observation result of 84%, and nurse 4 received a post-test questionnaire score of 22 and an observation result of 91%. The application of the HBM model has been shown to increase nurses' awareness and compliance with hand hygiene practices.

Evaluation based on the six HBM components indicated that all aspects improved after the intervention. Nurses reported greater awareness of infection risks, benefits of handwashing, and confidence to consistently perform hand hygiene. The main supporting factors were direct education and visual reminders through posters.

### DISCUSSION

The Health Belief Model (HBM) was developed to explain individual health behaviors based on personal beliefs and perceptions. Its main components include perceived susceptibility, perceived severity, perceived benefits, perceived barriers, cues to action, and self-efficacy. In the context of hand hygiene compliance, HBM can help nurses recognize infection risks and the benefits of preventive actions.

According to Bawean et al. (2024), HBM components such as perceived susceptibility, severity, and cues to action significantly influence handwashing compliance, while benefits and barriers are not always significant factors. Putra et al. (2021) found that perceived infection risk and perceived benefits of hand hygiene positively correlate with increased compliance among nurses. Additionally, the presence of posters and regular training reinforces nurses' intention to perform hand hygiene.

Evaluation was conducted by assessing six HBM components: perceived susceptibility, severity, benefits, barriers, cues to action, and self-efficacy. After the intervention, all components showed improvement, indicating positive behavioral change regarding hand hygiene. Barriers encountered included limited time during shift handovers, inadequate hand sanitizer facilities, and staff shortages.

## CONCLUSION

The implementation of the Health Belief Model (HBM) proved effective in increasing nurses' compliance with hand hygiene practices in the Flamboyan Ward of TK IV Military Hospital. Education and demonstrations enhanced positive perceptions of hand hygiene importance and reduced behavioral barriers. It is recommended that hospitals integrate HBM-based training into routine nursing programs and improve supporting hand hygiene facilities

## REFERENCES

1. Anitha, H., Handiyani, H., & Sukihananto, S. (2017). *The Effect of Poster Use as a Reminder Media on Nurses' Hand Hygiene Compliance at Prof. Dr. Sulianti Saroso Infectious Disease Hospital. The Indonesian Journal of Infectious Diseases*, 3(1), 22–31.
2. Arini, M. (2016). *Health Belief Model on Hand Hygiene Compliance in High-Risk Wards of Healthcare Acquired Infections (HAIs)*. 5(2), 129–135.
3. Bawean, P. L., Ginting, C. N., & Nasution, S. W. (2024). *Health Belief Model and Hand Hygiene Compliance among Nurses in the Wards of RSUD Dr. H. Kumpulan Pane*. 2024, 303–319.
4. Bawean, M., et al. (2022). *Relationship between Health Belief Model Components and Hand Hygiene Compliance among Nurses. Journal of Public Health Sciences*, 13(2), 201–210.
5. Bani Hashem, M., et al. (2022). *Effect of Health Belief Model-based Training on Nurses' Nosocomial Infection Control Behaviors. Journal of Nursing and Midwifery Sciences*, 9(3), 188–195.
6. Green, L. W., & Kreuter, M. W. (2019). *Health Program Planning: An Educational and Ecological Approach*. McGraw-Hill Education.
7. Pittet, D., & Boyce, J. M. (2020). *Hand Hygiene and Patient Safety: Review and Global Perspective. Clinical Infectious Diseases*, 72(Suppl 1), S10–S16.
8. Putra, D. A., Rachmawati, D., & Widyaningsih, S. (2021). *Application of Health Belief Model on Hand Hygiene Behavior among Nurses in Indonesia. Indonesian Nursing Journal*, 24(1), 13–22.
9. Wu, C.-H., et al. (2024). *Predicting Hand Hygiene Compliance among Health Care Workers Using the Health Belief Model. American Journal of Infection Control*, 52(1), 14–21.
10. Patel, S. (2025). *Enhancing Infection Control in ICU: Reducing Hospital Acquired Infections through Hand Hygiene and Antiseptic Use. Open Access Library Journal*, 12, 1-12.
11. Naeem, R. M., Khan, I. U., Zafar, A., Hussain, S. R., Bushra, R., & Ali, U. (2025). *Uncovering Trends in Hand Hygiene Compliance: A Multi-Stratification Analysis from a Tertiary Care Centre. Journal of Population Therapeutics and Clinical Pharmacology*.
12. Alshagrawi, S., & Alhodaiy, N. (2024). *Determinants of hand hygiene compliance among healthcare workers in intensive care units: a qualitative study. BMC Public*

- Health, 24, 2333.*
13. To, D., & Krisyanto, A. S. (2024). *Good Hand Hygiene Practices: Increasing Public Awareness through Policy and Public Campaigns. Formosa Journal of Science and Technology, 3(4), 8842.*
  14. Abdurrahman, A., & Putra, A. (2024). *Nurses' knowledge and attitudes towards hand hygiene in Aceh, Indonesia: A correlational study among surgical nurses. International Journal of ADVANCED AND APPLIED SCIENCES, 11(2), 212-218.*
  15. Sari, D. P., Wijaya, E., & Pratiwi, R. (2025). *The Role of Digital Reminders and Health Belief Model-Based Education in Sustaining Hand Hygiene Compliance Among Nurses. Indonesian Journal of Nursing Science, 10(1), 45-53.*