

ASSESS THE EFFECTIVENESS OF A STRUCTURED TEACHING PROGRAMME ON KNOWLEDGE REGARDING HAND HYGIENE AMONG NURSING STUDENTS IN SELECTED COLLEGES OF PUNJAB

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ABSTRACT

Hand hygiene is a simple and cost-effective method for preventing healthcare-associated infections and ensuring patient safety. However, gaps in knowledge and practice persist among nursing students. This study assessed the effectiveness of a structured teaching programme on hand hygiene knowledge among nursing students in selected colleges of Punjab. A quantitative pre-experimental one-group pre-test and post-test design was used with 60 students selected through convenience sampling. Data were collected using a structured questionnaire. After the pre-test, a teaching programme including lectures, demonstrations, and audiovisual aids was conducted. Post-test results showed a significant improvement in mean knowledge scores ($p < 0.05$), indicating the effectiveness of the intervention. The study concludes that structured teaching programmes can enhance knowledge and promote better hand hygiene practices among nursing students, contributing to improved infection control and patient care.

Aim: To assess the effectiveness of a structured teaching programme on knowledge regarding hand hygiene among nursing students in selected colleges of Punjab.

Materials and Methods: A quantitative pre-experimental one-group pre-test and post-test design was used among 60 nursing students selected through convenience sampling. Data were collected using a structured questionnaire. After the pre-test, a structured teaching programme with lectures, demonstrations, and visual aids was provided, followed by a post-test. Data were analyzed using descriptive and inferential statistics.

Results: The post-test mean knowledge score was significantly higher than the pre-test score ($p < 0.05$), showing improved knowledge of hand hygiene among participants.

Conclusion: The structured teaching programme was effective in improving hand hygiene knowledge among nursing students. Regular educational sessions should be included in nursing curricula to strengthen infection control practices and improve patient safety.

Keywords: Hand hygiene, Nursing students, Structured teaching programme, Knowledge, Infection control.

INTRODUCTION

Healthcare-associated infections (HAIs) represent a significant and persistent public health challenge across the globe, affecting millions of patients each year. These infections are acquired during the course of receiving treatment for other conditions in healthcare settings and are associated with increased morbidity, mortality, prolonged hospital stays, and a substantial financial burden on healthcare systems. The prevention of HAIs is therefore a top priority for healthcare organizations, requiring strict adherence to infection control practices by all healthcare personnel.

Among the various strategies for infection prevention, proper hand hygiene is universally acknowledged as the most effective, simplest, and cost-efficient method to reduce the transmission of microorganisms. Hand hygiene includes practices such as handwashing with soap and water and the use of alcohol-based hand rubs at appropriate times during patient care. The World Health Organization has emphasized

the importance of hand hygiene through global initiatives and guidelines, highlighting that millions of patients worldwide are affected by HAIs each year. These infections not only compromise patient safety but also increase healthcare costs and place additional strain on already burdened healthcare systems.

Nursing students, as future healthcare professionals, are frequently exposed to clinical environments during their training and are actively involved in patient care activities. Their role in maintaining effective hand hygiene practices is crucial in preventing the spread of infections. Adequate knowledge, positive attitudes, and proper compliance with hand hygiene protocols among nursing students are essential to ensure safe clinical practices and protect both patients and healthcare workers.

However, despite the well-established importance of hand hygiene, several studies have reported gaps in knowledge and suboptimal compliance among healthcare workers, including

nursing students. Factors such as lack of awareness, inadequate training, time constraints, and limited supervision contribute to poor adherence to recommended hand hygiene practices. These deficiencies can increase the risk of cross-infection and compromise the quality of care provided.

Educational interventions, particularly structured teaching programmes, have been shown to be effective in improving knowledge, awareness, and compliance with infection control measures. Such programmes provide systematic and comprehensive information, reinforce standard guidelines, and promote behavioral changes among learners. By incorporating lectures, demonstrations, and interactive learning methods, structured teaching programmes can significantly enhance understanding and encourage the adoption of correct hand hygiene practices.

In light of these concerns, the present study was undertaken to assess the effectiveness of a structured teaching programme on knowledge regarding hand hygiene among nursing students. The study aims to evaluate whether a planned educational intervention can bridge the existing knowledge gap and contribute to better infection prevention practices in clinical settings.

OBJECTIVES OF THE STUDY

- **To assess the pre-test knowledge regarding hand hygiene among nursing students:** This objective focuses on evaluating the baseline level of knowledge of nursing students before the implementation of the structured teaching programme. It includes assessing their understanding of key concepts such as the importance of hand hygiene, indications for hand washing, correct techniques, duration, and role in preventing infection transmission.
- **To assess the post-test knowledge regarding hand hygiene among nursing students:** This objective aims to measure the level of knowledge of nursing students after the administration of the structured teaching programme. It helps in identifying the extent to which students have acquired new knowledge and improved their understanding of hand hygiene practices.
- **To compare the pre-test and post-test knowledge scores regarding hand hygiene:** This objective is intended to evaluate the effectiveness of the structured teaching programme by comparing the knowledge scores obtained before and after the intervention. A significant difference between pre-test and post-test scores indicates the impact of the educational programme on students' learning outcomes.
- **To determine the association between pre-test knowledge scores and selected demographic variables:** This objective aims to identify whether there is any relationship between the baseline knowledge of nursing students and their demographic characteristics such as

age, gender, educational level, and previous clinical exposure. This helps in understanding factors that may influence knowledge levels and can guide future educational strategies.

MATERIAL AND METHOD

Research Design:

A quantitative research approach was adopted for the study. The research design selected was a pre-experimental one-group pre-test and post-test design. This design enabled the researcher to assess the level of knowledge among nursing students before and after the implementation of the structured teaching programme, thereby determining the effectiveness of the intervention.

Setting:

The study was conducted in selected nursing colleges of Punjab. These institutions were chosen based on accessibility, feasibility, and willingness to grant permission for data collection. The setting provided an appropriate academic and clinical learning environment for nursing students.

Sample:

The sample comprised 60 nursing students enrolled in the B.Sc Nursing programme. Participants were selected from different academic years to ensure variability in baseline knowledge levels. Only those students who were present at the time of data collection and willing to participate were included in the study.

Sampling Technique:

A non-probability convenience sampling technique was used to select the participants. This method involved choosing students who were readily available and consented to participate in the study, making it practical and time-efficient.

Tool for Data Collection:

Data were collected using a structured questionnaire developed by the researcher. The tool was divided into two sections:

- **Section A: Demographic Variables**

This section included items related to personal and academic characteristics of the participants, such as:

- o Age
- o Gender
- o Year of study
- o Previous knowledge regarding hand hygiene

- **Section B: Structured Knowledge Questionnaire**

This section consisted of 30 multiple-choice questions designed to assess the knowledge of nursing students regarding hand hygiene. The questions covered various aspects, including:

- o Importance of hand hygiene
- o Indications for handwashing

- o Steps and techniques of handwashing and hand rubbing
- o Use of alcohol-based hand sanitizers
- o Duration and frequency of hand hygiene practices
- o Role of hand hygiene in preventing infection transmission

Each correct answer was awarded one mark, and the total score was used to evaluate the level of knowledge among participants.

Intervention:

A structured teaching programme was developed and implemented by the researcher to improve knowledge regarding hand hygiene among nursing students. The programme was carefully planned based on standard guidelines and the learning needs of the participants.

The content of the programme included:

- Definition and importance of hand hygiene in healthcare settings
- Detailed steps of proper handwashing and hand rubbing techniques

- World Health Organization guidelines for hand hygiene, including the “Five Moments of Hand Hygiene”
- Methods to prevent infection transmission through effective hand hygiene practices
- Role and responsibility of nurses in maintaining infection control and patient safety

The teaching programme was delivered using a combination of lectures, demonstrations, and audiovisual aids such as charts and videos to enhance understanding and retention. Interactive sessions were also encouraged to clarify doubts and reinforce learning.

The intervention was conducted after the pre-test, and sufficient time was given for participants to absorb the information before conducting the post-test.

RESULTS

Section A: Demographic Characteristics

Most of the participants (60%) were in the age group of 20–22 years, and the majority (70%) were female students.

Section B: Level of Knowledge

Level of Knowledge	Frequency	Percentage
Poor	22	36%
Average	28	47%
Good	10	17%

Table 1: Frequency and Percentage Distribution of Pre-test Knowledge Scores

The findings indicate that majority of students had average knowledge regarding hand hygiene before the teaching

programme.

Level of Knowledge	Frequency	Percentage
Poor	4	7%
Average	20	33%
Good	36	60%

Table 2: Frequency and Percentage Distribution of Post-test Knowledge Scores

The results show that most students had good knowledge after the structured teaching programme

NURSING IMPLICATIONS

Nursing Practice:

The findings help nurses understand the importance of proper hand hygiene in preventing healthcare-associated infections.

Nursing Education:

Educational programmes should be conducted regularly to

improve knowledge and awareness regarding infection control practices among nursing students.

Nursing Administration:

Hospital administrators should ensure proper training programmes on hand hygiene for healthcare professionals and students.

Nursing Research:

Further research can be conducted on a larger sample size to evaluate the long-term effectiveness of teaching programmes.

RECOMMENDATIONS

The study can be replicated with a larger sample size.

A comparative study can be conducted between different nursing colleges.

Observational studies can be conducted to assess actual hand hygiene practices.

CONCLUSION

The findings of the study clearly demonstrated that the structured teaching programme was effective in enhancing the knowledge of nursing students regarding hand hygiene. A significant improvement was observed in the post-test knowledge scores compared to the pre-test scores, indicating that the educational intervention had a positive impact on the participants' understanding of hand hygiene principles and practices.

The increase in knowledge scores reflects that the structured teaching programme successfully addressed existing gaps in awareness and provided students with essential information related to the importance of hand hygiene, proper techniques, and its role in preventing the transmission of infections. This improvement suggests that well-planned and systematically delivered educational programmes can facilitate better learning outcomes among nursing students.

Furthermore, the study highlights the critical role of educational interventions in strengthening infection control practices within healthcare settings. As nursing students are future healthcare providers, enhancing their knowledge and awareness at the training stage is crucial for developing safe and responsible clinical behaviors. Improved knowledge is likely to translate into better compliance with hand hygiene protocols during clinical practice, thereby reducing the risk of healthcare-associated infections.

In conclusion, the study emphasizes the need for regular and continuous educational programmes, workshops, and practical demonstrations on hand hygiene as an integral part of nursing education. Such initiatives can contribute significantly to improving patient safety, minimizing infection risks, and promoting a culture of quality care and infection prevention in healthcare institutions.

REFERENCES

1. World Health Organization. (2009). WHO guidelines on hand hygiene in health care. Geneva: WHO. This guideline provides comprehensive evidence and recommendations to improve hand hygiene practices and reduce infection transmission in healthcare settings.
2. World Health Organization. (2009). WHO guidelines on hand hygiene in health care: Summary. Geneva: WHO.
3. World Health Organization. (2009). Hand hygiene technical reference manual: To be used by healthcare workers, trainers and observers of hand hygiene practices. Geneva: WHO.
4. World Health Organization. (2017). Evidence of hand hygiene as the building block for infection prevention and control. Geneva: WHO.
5. World Health Organization. (2022). Infection prevention and control – Hand hygiene. Reports that a significant proportion of patients acquire healthcare-associated infections and emphasizes that proper hand hygiene can prevent many of these cases.
6. Al-Khawaldeh, O. A., Al-Hussami, M., & Darawad, M. (2015). Influence of nursing students' handwashing knowledge, beliefs, and attitudes on their compliance. *Health Journal*. Highlights the relationship between knowledge and compliance with hand hygiene among nursing students.
7. Gould, D. J., Moralejo, D., Drey, N., & Chudleigh, J. H. (2007). Interventions to improve hand hygiene compliance in patient care. *Cochrane Database of Systematic Reviews*. Demonstrates that educational interventions significantly improve hand hygiene compliance.
8. Sax, H., Allegranzi, B., Uçkay, I., Larson, E., Boyce, J., & Pittet, D. (2007). My five moments for hand hygiene: A user-centred design approach. *Journal of Hospital Infection*. Introduces a widely used framework for hand hygiene practices in clinical care.
9. Whitby, M., Pessoa-Silva, C. L., McLaws, M. L., et al. (2007). Behavioural considerations for hand hygiene practices. *Journal of Hospital Infection*. Explains behavioral factors influencing hand hygiene compliance.
10. Larson, E. L. (2000). APIC guideline for handwashing and hand antisepsis in healthcare settings. *American Journal of Infection Control*. Provides foundational principles of hand hygiene in healthcare practice.