

Impact of sensitization workshop on knowledge and awareness of hospital-acquired infection among nurses of a teaching hospital in India

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Abstract

Hospital-acquired infection (HAI) in healthcare settings is the most frequent adverse event in healthcare delivery worldwide. Hundreds of millions of patients are affected by HAI worldwide each year, leading to significant patient mortality rates and financial losses for health systems. We evaluated the impact of a sensitization workshop on knowledge and awareness of HAI among nurses in a medical college hospital in rural area of Ahmednagar district, India from March 2010 to August 2010. One hundred staff nurses, who had more than one year of experience, had attended the workshops on HAI. Pre- and post-test data was collected by a questionnaire. A significant increase in number of nurses having knowledge regarding commonly occurring HAI and routes of transmission, barrier nursing and hygienic hand washing techniques, hospital waste management (its importance and color coding), and the importance of an infection control team was observed after the workshop. Education and training of healthcare workers about standard infection control can reduce the extent of risks of HAI. Nurses have a critical role to play in prevention measures and infection control and they should have the opportunity for continuous professional development.

Keywords: Hospital-acquired infection, Nurses, Training workshop, Knowledge, India.

Introduction

Hospital-acquired infection (HAI) or healthcare-associated infection (HAI), or nosocomial infection acquired in healthcare settings are the most frequent adverse events in healthcare delivery worldwide.^{1,2} HAI affects patients in a hospital or other healthcare facility, and are not present or incubating at the time of admission.¹ They include infections acquired by patients in the hospital or facility but only showing symptoms after discharge.² HAI also includes occupational infections among healthcare staff. Hundreds of millions of patients are affected by HAI worldwide each year, leading to significant patient mortality rates and financial losses for health systems.^{1,2} Of every 100 hospitalized patients at any given time, 7 in developed countries, and 10 in developing countries will acquire at least one HAI.³ The prevalence of HAI in developed countries varies between 5% and 15%⁵ and it varies between 5.7% and 19.1% in low- and middle-income countries.³

HAI takes a heavy toll on patients and their families by causing illness, prolonging hospital stays, reducing the quality of life, increasing the potential of disabilities, increasing the resistance of the microbes to antimicrobials, as well as leading to excess costs and sometimes death of the patient.^{1,4} Spread of HAI serves as a major source of worry for managers in the healthcare practice, particularly in the resource poor healthcare settings of developing

Practice Points

- Hospital-acquired infection (HAI) in healthcare settings is the most frequent adverse event in healthcare delivery worldwide.
- HAI causes prolonged hospital stay, reducing quality of life, potential disability, increasing resistance to antimicrobials, excess costs and sometimes death.
- Education and training of healthcare workers about standard infection control can reduce the extent of risks of HAI.
- A significant increase in knowledge regarding was observed among nurses after the workshop regarding HAI and routes of transmission, barrier nursing and hand washing techniques, hospital waste management, and importance of infection control team.
- Nurses have a critical role to play in prevention and infection control and they should have scopes for continuous professional development.

countries.^{1,4} Hospitals provide a favorable transmission pathway for the spread of HAI, owing partly to poor infection control practices among health workers on

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one hand, and overcrowding of patients in most clinical settings on the other.^{1,4,5} We evaluated the impact of a sensitization workshop on knowledge and awareness of HAI among the nurses of a teaching hospital in India.

Materials and methods

The study was conducted in a medical college hospital in the rural area of the Ahmednagar district from March 2010 to August 2010. One hundred staff nurses (who had at least one year of experience) were selected by simple random sampling to attend workshops on HAI. Pre- and post-test data was collected by a questionnaire, which was developed according to the international infection control guidelines.⁶ The questionnaire consisted of closed and open ended questions and included questions on nosocomial infection, universal precautions and hand hygiene, and hospital waste management. In the workshop, demonstrations, videos, and lectures were arranged to impart the knowledge and increase awareness. The responses were recorded onto the computer using the statistical software SPSS and analyzed. Percentages and proportions were used, and the chi-square test was used to find any significance.

Result

The knowledge and awareness of participants on HAI before and after the workshop are shown in Fig 1. Out of 100 nurses, only 31% nurses identified that urinary tract and respiratory tract infections are common HAI, and 64% mentioned correctly the commonest routes of transmission of HAI prior to workshop. However, after the workshop percentage of nurses having correct knowledge regarding commonly occurring HAI and routes of transmission increased to 91% and 94% respectively. Prior to the workshop only 70% nurses had the correct knowledge regarding barrier nursing and

hygienic hand washing techniques. However after the workshop, significant improvement was observed among the nurses (96%) ($p < 0.001$). A significant increase in the number of nurses having knowledge regarding hospital waste management (its importance and color coding) was observed after the workshop ($p < 0.001$). The number of nurses having knowledge regarding universal precautions, common disinfection and sterilization procedures carried out in the wards increased after the workshop. We also found that 62% of nurses opined that an infection control team is needed for the control of HAI prior to the workshop but a significantly higher number of nurses (95%) realized the importance of the infection control team after the workshop ($p < 0.001$).

Discussion

Education and training of healthcare workers about standard infection control, as well as strict adherence by healthcare staff and students to aseptic practice, can reduce the extent of risks of HAI.^{1,5} Like our study, other studies in India,^{7,8} Italy⁹ and Ghana¹⁰ identified the nurses' and healthcare students' lack of knowledge regarding HAI. Hand hygiene has always been considered one of the cornerstones of infection control, but adherence to recommendations for hand-hygiene practices remains extremely low in most healthcare settings.¹¹ Strict adherence to universal precautions is a crucial measure to prevent HAI. Knowledge regarding standard infection control practices and universal precautions improved significantly in our study and other studies also mentioned a similar finding. Hospital waste is one of the most important sources of HAI; hence, proper handling of hospital waste is essential. Nurses are the key persons as far as handling of sharps and infectious waste is concerned, therefore nurses must understand

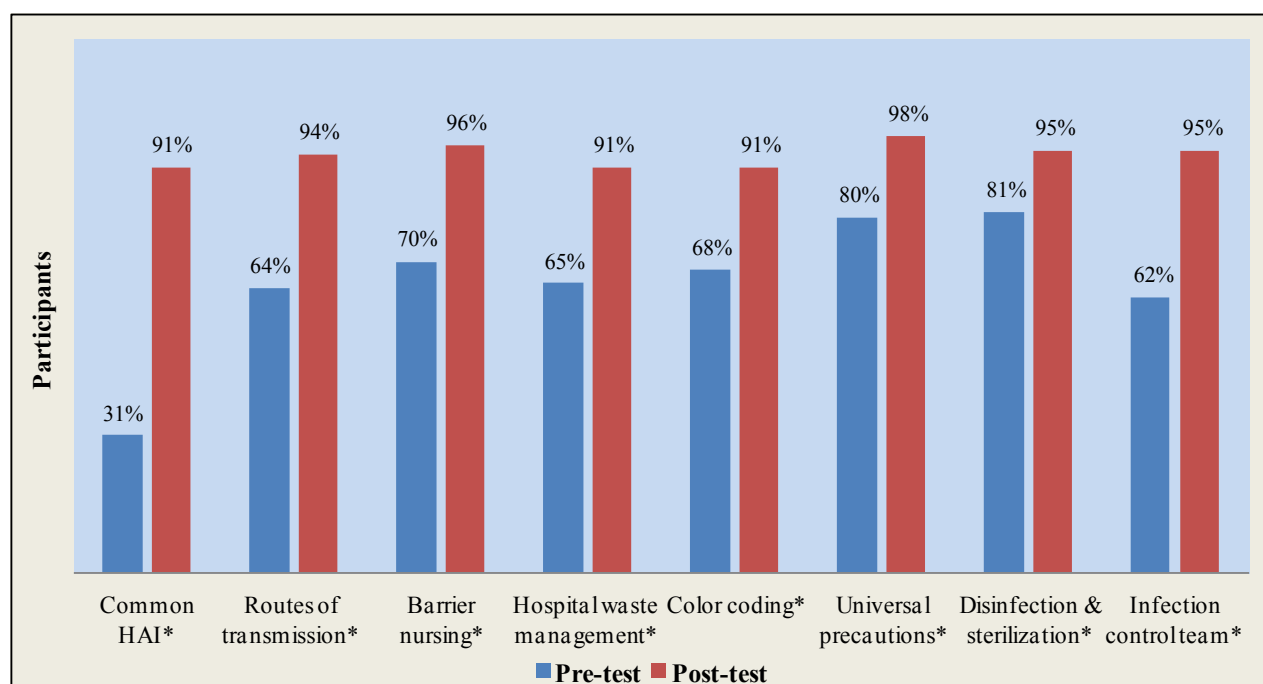


Fig 1: Knowledge and awareness of participants on HAI before and after the workshop

*Values are significant at $p < 0.05$.

the role of hospital waste management in the prevention of HAI. Similar to our study, another study also mentioned the significant improvement in knowledge regarding hospital waste management after the training of health workers.⁷ An infection control team plays a vital role in the prevention of HAI in the healthcare setting. Among the healthcare workers, nurses have a critical role to play in the prevention measures and infection control and they should have opportunity for continuous professional development. Suchitra *et al.*¹² emphasized that educational intervention on HAI had positive impact on knowledge and awareness of nursing staff.

Conclusion

Knowledge about various aspects of HAI among nurses in the teaching hospital was significantly improved after they attended a training workshop. Renewed effort geared towards education in terms of training and re-training of healthcare workers about HAI as it is shown that standard infection control measures can reduce the extent of risks of HAI in healthcare settings.

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