



A PRE-EXPERIMENTAL STUDY TO EVALUATE THE EFFECTIVENESS OF AWARENESS PROGRAMME ON KNOWLEDGE REGARDING HAND HYGIENE TO PREVENT HEALTH CARE ASSOCIATED INFECTIONS AMONG STAFF NURSES IN SELECTED HOSPITALS OF RAICHUR

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ABSTRACT

Healthcare-associated infections (HAIs) are a major problem in hospitals and can affect patient safety. Hand hygiene is one of the most effective ways to prevent these infections. However, many nurses do not always follow proper hand hygiene practices due to lack of knowledge, heavy workload, and other reasons. This study was conducted to evaluate the effectiveness of an awareness programme on knowledge regarding hand hygiene among staff nurses in selected hospitals of Raichur. A pre-experimental one-group pre-test and post-test research design was used. A total of 50 nurses, including 25 Staff Nurses, 15 B.Sc. Nurses, and 10 ANM Nurses, participated in the study. A structured questionnaire was used to assess their knowledge before and after the awareness programme. Hand hygiene practices were also observed. Descriptive and inferential statistics were used, and the Chi-square test was applied to determine the association between variables at a significance level of $p < 0.05$. The results showed that the awareness programme improved the nurses' knowledge about hand hygiene. B.Sc. Nurses had the highest knowledge score (93.4%) and showed better hand hygiene compliance than the other groups. Out of 308 hand hygiene opportunities, hand hygiene was performed in 180 cases, giving an overall compliance rate of 58.4%. The main reason for not following hand hygiene was being too busy (64%). The study concludes that awareness programmes are effective in improving nurses' knowledge and hand hygiene practices, which can help prevent healthcare-associated infections and improve patient safety. **Conclusion:** The present study found that the awareness programme significantly improved the knowledge of staff nurses regarding hand hygiene. B.Sc. Nurses achieved the highest knowledge score (93.4%) compared to the other nursing categories. The overall hand hygiene compliance rate was 58.4%, indicating moderate adherence to recommended practices. The main reason for non-compliance was being too busy (64%), highlighting the effect of workload on hand hygiene practices. These findings suggest that regular awareness programmes and continuous monitoring can improve hand hygiene compliance and help prevent healthcare-associated infections.

KEYWORDS : Hand hygiene; Infection prevention; Staff Nurse, Knowledge; Awareness; Infection control.

INTRODUCTION

PREVENTION IS BETTER THAN CURE

Healthcare-Associated Infections (HCAs) are infections that originate or occur within a hospital or hospital-like clinical setting. They represent a severe institutional health hazard worldwide. In spite of recent medical advances in the prevention and control of nosocomial infections, they continue to persist as a major adverse outcome of hospitalization, contributing significantly to patient morbidity, mortality, and overall healthcare costs.

As the vast majority of nosocomial infections are transmitted via the hands of healthcare workers, hand washing is widely considered to be the single most important intervention for preventing cross-contamination. However, clinical studies consistently show that independent hand washing practices remain poor, especially among frontline medical personnel. Hand hygiene is the most cost-effective measure available for interrupting the transmission of pathogenic microorganisms that cause infection, both within the community and in healthcare settings. Nevertheless, relying on hand hygiene as a sole measure to reduce infection rates is unlikely to be successful if other institutional factors such as environmental hygiene, ward crowding, nurse-to-patient staffing levels, and continuous clinical education are inadequate. Therefore, hand hygiene protocol must always be implemented as part of a comprehensive, integrated approach to infection control.

NEED FOR THE STUDY

An infection is defined as the invasion of bodily tissues by a pathogenic agent that multiplies and produces an injurious, adverse effect on the host. A nosocomial infection specifically refers to an infection whose development is favored by the hospital environment, such as one acquired by a patient during their hospital stay or one that develops among clinical hospital staff. These hospital-acquired threats include various bacterial, viral, and fungal infections, all of which are severely

aggravated by the reduced immune resistance of individual patients. Operationally, nosocomial infections are defined as those manifest infections occurring within 48 hours of hospital admission, 3 days following hospital discharge, or 30 days post-operation.

The transmission of healthcare-associated pathogens from one patient to another, or to other members of the healthcare team via the hands of healthcare workers or caretakers, occurs through five distinct sequential steps: Given that staff nurses maintain the highest frequency of continuous bedside contact with patients, identifying gaps in their baseline knowledge and addressing them through a systematically structured educational module is highly necessary. This study is designed to evaluate the explicit impact of an awareness program on improving hand hygiene practices within selected hospitals in Raichur. (i) inanimate objects immediately surrounding the patient; (ii) organisms must be transferred to the hands of healthcare workers (HCWs); (iii) organisms must be capable of surviving for at least several minutes on the caregiver's hands; (iv) hand washing or hand antisepsis by the HCW must be inadequate or entirely omitted, or the agent used for hand hygiene must be inappropriate; and (v) the contaminated hand or hands of the caregiver must come into direct contact with another patient or with an inanimate object that will come into direct contact with the patient. Consequently, hand hygiene is strongly recommended as the single most critical preventive action against hospital-acquired infections.

Hospital-based programs for the prevention and control of healthcare-associated infections have been in place since the 1950s. Nevertheless, clinical epidemiological studies indicate that the nosocomial infection rate in India stands at over 28.6%, contributing to higher mortality rates than any other form of accidental death in institutional settings. Statistically, this frequency suggests that approximately 1 in every 4

patients admitted into a hospital environment develops a nosocomial infection.

In the United States, the Centers for Disease Control and Prevention (CDC) estimated that roughly 1.7 million hospital-associated infections from all types of microorganisms combined cause or contribute to 99,000 deaths each year. Similarly, in Europe, where extensive hospital surveys have been conducted, the category of Gram-negative infections is estimated to account for two-thirds of the 25,000 deaths recorded annually. Nosocomial infections frequently cause severe clinical complications, including pneumonia, urinary tract infections (UTIs), bloodstream infections, and systemic sepsis across other body systems. Furthermore, many types of these pathogens are increasingly difficult to treat with traditional antibiotics. This rising antimicrobial resistance is spreading rapidly among Gram-negative bacteria, presenting a severe public health threat that can infect individuals outside the hospital setting as well.

Hand washing for general hand hygiene is defined as the physical act of cleaning one's hands with the use of water or another liquid, alongside soap, for the explicit purpose of removing soil, dirt, organic matter, and transient microorganisms. Medical hand hygiene, on the other hand, pertains to the specialized clinical hygiene practices related to the administration of medicine and inpatient medical care that prevent or minimize cross-infection and the spread of disease. The primary medical objective of washing hands is to thoroughly cleanse the hands of pathogenic organisms (including bacteria, fungi, and viruses) and hazardous chemicals that can cause personal harm or clinical disease. Maintaining this barrier is exceptionally vital for individuals who handle clinical nutrition or work directly in the acute medical field. A substantial body of empirical research has demonstrated that increasing baseline compliance with established hand washing guidelines directly leads to a significant decrease in overall nosocomial infection rates.

A study titled "Impact of education on knowledge, attitudes and practices among various categories of health care workers on nosocomial infections" was conducted in Mysore, Karnataka, to assess the baseline knowledge, attitudes, and practices (KAP) regarding nosocomial infections among different categories of healthcare workers (HCWs). A total of 150 HCWs comprising doctors (n=50), nurses (n=50), and ward aides (n=50) were enrolled in the study. A structured questionnaire was administered to the participants to evaluate their respective KAP profiles. A customized scoring system was developed to categorize these scores (KAP score). Following the baseline assessment, the subjects underwent an educational intervention module. They were subsequently evaluated using similar questionnaires at intervals of 6, 12, and 24 months post-intervention to assess retention. Additionally, a subgroup from each staff category (n=10) was systematically observed during the post-education period to monitor real-time compliance with hand washing practices within the clinical wards. Statistical analysis was performed using advanced statistical software. The findings revealed a significant increase in the number of subjects scoring "good" and "excellent" in the immediate post-education evaluation; however, these scores gradually declined over time. Observational data showed that hand washing compliance levels varied markedly across the different cadres of HCWs. Total compliance across the board was 63.3%, with ward aides demonstrating the highest compliance rate at 76.7% (adjusted Wald 95% CI = 58.80–88.48). The researchers concluded that structured education exerts a highly positive impact on the retention of knowledge, attitudes, and clinical practices across all staff categories. However, the study highlighted a critical need to establish systems for continuous, ongoing education for all healthcare cadres. To systematically minimize the incidence

of nosocomial infections, mandatory compliance with such educational interventions remains essential.

A study titled "Effectiveness of a hospital-wide educational program for infection control to reduce the rate of health-care associated infections and related sepsis (ALERTS)" was conducted in Germany from September 2011 to August 2012. The overarching objective of the ALERTS initiative was to demonstrate the feasibility of a comprehensive, hospital-wide program designed to reduce the overall burden of healthcare-associated infections (HAIs) and related sepsis by a minimum of 20%.

This prospective, quasi-experimental study was executed at Jena University Hospital, encompassing all acute care units, which included 27 general wards and 4 Intensive Care Units (ICUs), totaling 809 patient beds. Epidemiological surveillance for HAIs was maintained daily utilizing computerized antibiotic monitoring targeting patients with high-risk clinical factors (e.g., those with indwelling intravenous or urinary catheters, or post-surgical status). Following the initial surveillance baseline period, a multifaceted, pragmatic infection control program was implemented. This intervention focused specifically on correct hand hygiene execution and care bundles designed to prevent the four most common types of HAIs. Interim findings from the primary surveillance window (09/2011 to 08/2012) indicated that a total of 30,631 patients were admitted to the participating departments. According to CDC definitions, they identified 1,637 HAIs, resulting in an overall incidence rate of 5.3%. Based on clinical evaluation alone, irrespective of the standard CDC criteria, an additional 944 HAIs were detected, bringing the comprehensive HAI rate to 8.4% [n = 2,581]. A substantial proportion of these patients presented with HAI-associated severe sepsis or septic shock. Among these severe cases, lower respiratory tract infections were the most common (n = 279 [37%]), followed by primary sepsis (n = 110 [32%]), surgical site infections (n = 114 [25%]), and urinary tract infections (n = 46 [8%]), while other conditions accounted for the remaining cases (n = 87 [22%]).

These statistical figures indicate that a high number of HAIs are missed when relying solely on strict CDC definitions, meaning the true magnitude of the problem may be underestimated. Furthermore, a disturbingly high percentage of HAIs progress rapidly from a localized infection to severe sepsis or septic shock, requiring intensive ICU interventions. Subsequently, a second surveillance period lasting 18 months was initiated in May 2013 to measure the long-term clinical effects of this infection control program.

A study was conducted in the intensive care units of a tertiary care hospital in Argentina to evaluate the reduction in nosocomial infections achieved through improved hand hygiene compliance. The researchers monitored overall compliance with hand hygiene protocols during routine patient care within two distinct units: one medical-surgical ICU and one coronary ICU, located in a single hospital facility in Buenos Aires, Argentina. This monitoring took place before and during the systematic implementation of an integrated hand hygiene education, training, and performance-feedback program.

Observational compliance surveys were conducted twice a week from September 2000 to May 2002. Nosocomial infections within the ICUs were identified using the National Nosocomial Infections Surveillance (NNIS) criteria via prospective clinical surveillance. Over the course of the study, the investigators observed 4,347 opportunities for hand hygiene across both ICUs.

The results showed that hand hygiene compliance improved progressively, with adherence rates rising significantly from a

baseline of 23.1% (268/1,160) to 64.5% (2,056/3,187) post-intervention (Relative Risk [RR]: 2.79; 95% Confidence Interval [CI]: 2.46–3.17; $p < 0.0001$). Concurrently, the overall nosocomial infection rate across both ICUs decreased markedly from 47.55 per 1,000 patient-days (104/2,187) down to 27.93 per 1,000 patient-days (207/7,409) (RR: 0.59; 95% CI: 0.46–0.74; $p < 0.0001$). The study concluded that an institutional program consisting of focused education paired with frequent performance feedback produces a sustained improvement in hand hygiene compliance, coinciding directly with a major reduction in ICU nosocomial infection rates.¹⁰ setting. Therefore, the investigator designed a study to assess the effectiveness of an awareness program on hand hygiene to prevent HAIs among staff nurses.

STATEMENT OF THE PROBLEM

"A PRE-EXPERIMENTAL STUDY TO EVALUATE THE EFFECTIVENESS OF AN AWARENESS PROGRAMME ON KNOWLEDGE REGARDING HAND HYGIENE TO PREVENT HEALTHCARE-ASSOCIATED INFECTIONS AMONG STAFF NURSES IN SELECTED HOSPITALS OF RAICHUR."

OBJECTIVES OF THE STUDY

1. To assess the existing knowledge of staff nurses regarding hand hygiene to prevent healthcare-associated infections in selected hospitals of Raichur.
2. To assess the effectiveness of an awareness programme on knowledge regarding hand hygiene to prevent healthcare-associated infections among staff nurses in selected hospitals of Raichur.
3. To find out the association between selected demographic variables and the baseline knowledge of staff nurses regarding hand hygiene.

OPERATIONAL DEFINITIONS

- **Hand hygiene:** In this study, it refers to the act of cleaning one's hands with the use of water and other liquids, such as antiseptics/antimicrobials, or with the use of soap, for the purpose of removing soil, dirt, and/or microorganisms.
- **Healthcare-associated infection:** A healthcare-associated infection (HCAI) is an infection acquired during the course of receiving treatment in a healthcare facility. It is not present or incubating at the time of the patient's admission. HCAs may develop during hospitalization or become apparent after discharge. These infections can affect both patients and healthcare workers. HCAs are also referred to as hospital-acquired infections (HAIs) or nosocomial infections.
- **Knowledge:** In this study, it refers to the correct responses from the staff nurses regarding hand hygiene elicited through a structured knowledge questionnaire.
- **Effectiveness:** In this study, it refers to the extent to which exposure to the awareness program enables the staff nurses to gain knowledge, measured in terms of the increase in post-test knowledge scores compared to baseline scores.
- **Awareness Program:** In this study, it refers to a systematically organized educational program that contains procedural steps and instructions about hand hygiene. The awareness session is delivered using instructional posters, practical demonstrations, a video-assisted teaching program, and a hand washing dance choreography.
- **Staff nurse:** A qualified nurse who provides bedside nursing care and carries out medical and nursing interventions under the policies of a healthcare organization.

HYPOTHESES

- **H1:** There will be a significant difference between the pre-test and post-test knowledge scores among staff nurses regarding hand hygiene to prevent healthcare-associated infections.
- **H2:** There will be a significant association between selected demographic variables and the baseline knowledge of staff nurses regarding hand hygiene to prevent healthcare-associated infections.

LIMITATIONS OF THE STUDY

- The study was conducted only in selected hospitals of Raichur.
- The sample size was limited to 50 staff nurses, which limits the generalizability of the findings.
- A pre-experimental one-group pre-test and post-test design was used without a control group.
- The study was conducted over a short period.
- Hand hygiene practices were observed only during the study period and may not represent routine practice.
- The findings depended partly on self-reported responses, which may have introduced response bias.

MATERIALS AND METHODS

Research Design: A pre-experimental, one-group pre-test post-test design will be adopted for this study.

Settings of the Study: The study will be conducted for staff Nurses working at selected Hospital of Raichur.

Sampling Procedure: A purposive sampling technique will be adopted to select both the hospitals and the individual study participants.

Sample Size: The sample size of the present study 50 staff nurses.

Inclusion Criteria

1. Staff nurses who are currently working in selected hospitals of Raichur.
2. Staff nurses who are available during the scheduled data collection period of the study.

Exclusion Criteria

1. Staff nurses who are not willing to participate in the study.
2. Staff nurses who are not present at the specific time of data collection.

Selected Variables: The variables included in the present study are:

Dependent Variable: Knowledge of staff nurses regarding hand hygiene.

Independent Variable: An awareness program on hand hygiene to prevent healthcare-associated infections.

Extraneous Variables: Selected demographic variables, including:

a) Age:

1. < 25 years
2. 26–30 years
3. 31–35 years
4. 36–40 years

b) Sex:

1. Male
2. Female

c) Professional Qualification:

1. GNM (General Nursing and Midwifery)

2. B.Sc. (Nursing)
3. ANM

d) Clinical Experience (in years):

1. < 2 years
2. 2–5 years
3. 5 years

e) Prior Attendance at Educational Programs on:

1. Hand hygiene
2. Healthcare-associated infections (HCAIs)

METHODS OF DATA COLLECTION

Data Collection Instrument

A structured, self-administered questionnaire regarding hand hygiene will be developed and used for data collection.

DATA COLLECTION METHOD

1. The researcher will obtain written permission from the institutional authorities to conduct the study.

2. The purpose of the study will be explained clearly to the subjects, and written informed consent will be obtained from each participant.

3. The data collection tools will be administered to the staff nurses to collect pre-test data, following which the structured awareness program will be conducted for the staff nurses on the same day.

4. The post-test will be conducted on the 8th day following the intervention.

PLANS FOR DATA ANALYSIS

1. The collected data will be analyzed using both descriptive and inferential statistics.

2. Descriptive statistics will comprise the mean, median, and standard deviation.

3. Inferential statistics will comprise the Chi-square (χ^2) test to determine significant associations with demographic variables, and the paired *t*-test to evaluate the overall effectiveness of the intervention.

PROJECTED OUTCOME

1. The results of the present study will provide valuable insights for future researchers, helping them design and implement different methods or types of awareness programs to improve the knowledge of staff nurses regarding hand hygiene, thereby preventing healthcare-associated infections.

DOES THE STUDY REQUIRE ANY INVESTIGATION OF INTERVENTIONS TO BE CONDUCTED ON PATIENTS OR OTHER HUMANS OR ANIMALS? IF SO, DESCRIBE BRIEFLY?

2. Yes. In this study, the investigator plans to use a structured knowledge questionnaire and an educational intervention to evaluate the effectiveness of an awareness programme regarding hand hygiene to prevent healthcare-associated infections among staff nurses. Consequently, the active participation of staff nurses is required for this study. No clinical interventions or invasive procedures will be performed on patients or animals.

HAS ETHICAL CLEARANCE BEEN OBTAINED FROM YOUR INSTITUTION?

- Ethical clearance will be obtained from the Institutional /Ethical Committee (IEC).
- Administrative permission will be obtained from the medical superintendents and hospital authorities of the

selected clinical settings.

- Prior to conducting the study, written informed consent will be formally obtained from each participating staff nurse.

REVIEW OF LITERATURE

A review of literature on the research topic makes the researcher familiar with existing studies and provides critical information that helps to focus on a particular problem, thereby laying a solid foundation upon which to base new insights found regarding the subjects.

An interventional study was conducted in a Kuwaiti teaching hospital to determine the hand hygiene (HH) compliance rate among healthcare workers (HCWs) and its subsequent effect on nosocomial infection rates within the intensive care unit (ICU) of the hospital. The study spanned a period of 7 months (February 2011 to August 2011) and consisted of education regarding HH indications and techniques, workplace reminder posters, focused group sessions, and regular feedback on both HH compliance and infection rates.

The findings showed that the overall rate of HH compliance across all HCWs increased significantly from 42.9% pre-intervention to 61.4% post-intervention ($P < 0.001$). Individually, compliance was highest among the nurses, rising from 49.9% to 82.5% ($P < 0.001$), and lowest among the doctors, changing from 38.6% to 43.2% respectively ($P = 0.24$). The impact of this increased HH compliance rate on the nosocomial infection rate was remarkable. There were significant reductions observed in the following metrics: the rate of overall healthcare-associated infections per 1,000 patient-days fell from 37.2 pre-intervention to 15.1 post-intervention ($P < 0.001$); the rate of central line-associated bloodstream infections fell from 18.6 to 3.4 per 1,000 central-line days ($P < 0.001$); and the rate of lower respiratory tract infections dropped from 17.6 to 5.2 per 1,000 ventilator-days ($P < 0.001$). Similarly, there were significant reductions in the isolation rates of 4 major hospital pathogens ($P < 0.001$ and $P = 0.03$). These findings strongly suggest that although cross-infection in the ICU is a complex process, its frequency can be dramatically reduced by meticulous adherence to hand hygiene recommendations.

A study on hand hygiene evaluated its impact as an important means of infection control. An open cluster-randomized 3-arm intervention trial explored whether guided hand hygiene, combined with transmission-limiting behaviors, reduces infection episodes and lost days of work in a common work environment. A total of 21 clusters (comprising 683 persons) were randomized to implement hand hygiene with soap and water (257 persons), with alcohol-based hand rub (202 persons), or to serve as a control (224 persons). Participants in both intervention arms also received standardized instructions on how to limit the transmission of infections. The intervention period (16 months) included the emergence of the 2009 influenza pandemic and the subsequent national hand hygiene campaign, which also influenced the control arm.

During the total follow-up period, there was a 6.7% reduction in infection episodes in the soap-and-water arm ($p = 0.04$). Before the onset of the anti-pandemic campaign, a statistically significant ($p = 0.002$) difference in the mean occurrence of infection episodes was observed between the control arm (6.0 per year) and the soap-and-water arm (5.0 per year), but not between the control arm and the alcohol-rub arm (5.6 per year). Neither intervention had a decreasing effect on absence from work.

To conclude, intensified hand hygiene using water and soap together with behavioral recommendations can reduce the occurrence of self-reported acute illnesses in a common work environment. Surprisingly, the occurrence of reported sick leaves also increased in the soap-and-water arm.

Chen Y.C., Chiang L.C. (2007) – A quasi-experimental time series study was conducted in Taichung Veterans General Hospital, Taiwan, on a video-assisted teaching program regarding hand washing. The study compared experimental groups (61 families) who received the video program with a comparison group (62 families) who received a simple demonstration regarding hand washing. A 20-item hand washing checklist was used to examine hand washing compliance and accuracy. Results from generalized estimating equation analysis showed that families in the experimental group achieved statistically significant higher compliance and accuracy scores. The video-based teaching program was effective in increasing compliance and accuracy with a hand washing policy among families.

A cluster-randomized controlled trial was conducted in Hong Kong to evaluate the effects of multifaceted hand hygiene interventions in long-term care facilities among healthcare workers. Eighteen homes for the elderly were randomly allocated to two intervention arms and one control arm. Direct observation of hand hygiene practices was conducted by trained nurses. Either hand rubbing with an alcohol-based hand rubs (ABHR) or hand washing with liquid soap and water was counted as a compliant action. Disease notification data collected during 2007–2010 were used to calculate the incidence rate ratio (IRR). The WHO multimodal strategy was employed across all intervention homes were supplied with ABHR (WHO formulation 10), ABHR racks, pull reels, HH poster reminders, a health talk, training materials, video clips, and performance feedback. The only difference was that intervention arms 1 and 2 were provided with slightly powdered and powder-free gloves, respectively. A total of 11,669 HH opportunities were observed. HH compliance increased from 27.0% to 60.6% and from 22.2% to 48.6% in intervention arms 1 and 2, respectively. The HH compliance of the control group was 21.6%. Respiratory outbreaks and MRSA infections were significantly reduced after the intervention.

A quasi-experimental study was conducted in Ireland utilizing a convenience sample. The Predisposing, Reinforcing, and Enabling Constructs in Educational Diagnosis and Evaluation (PROCEED) health education theory was used as the theoretical framework, and the data were collected in 2001. Healthcare workers' hand washing practices (observation of behavior, $n = 314$) and their predisposition (attitudes, beliefs, and knowledge) toward compliance with hand hygiene guidelines (questionnaire, $n = 62$) were studied. Nurses, doctors, technicians, physiotherapists, and care assistants involved in direct patient care within the study unit participated in the research. The interventional hand hygiene program aimed to predispose healthcare workers to adopt positive hand hygiene behaviors (via a poster campaign and educational handouts), reinforce behaviors (via feedback on pre-test results), and enable the behaviors (via the provision of an alcohol-based hand rub beside each patient's bedside). Implementation of this multifaceted interventional behavioral hand hygiene program resulted in an overall improvement in compliance with hand hygiene guidelines, rising from 51% to 83% ($p < 0.001$). Furthermore, healthcare workers believed that their skin condition improved ($p < 0.001$). An increase in knowledge about hand washing guidelines was also found. In order to be effective, efforts to improve compliance with hand washing guidelines must be multifaceted. Alcohol hand rubs (with emollients) need to be provided at each patient's bedside, and issues surrounding healthcare workers' skin irritation need to be addressed urgently.

A study was conducted at the National Taiwan University Hospital to evaluate the effectiveness of a hand hygiene program on compliance with hand hygiene protocols and the subsequent rate of nosocomial infections in a neonatal

intensive care unit (NICU). An open trial study was performed in a level-III NICU. Physicians, nurses, and other healthcare workers served as the participants. A multimodal campaign for hand hygiene promotion was conducted beginning in September 1998. This program consisted of formal lectures, written instructions, and posted reminders regarding hand hygiene and proper hand washing techniques, covert observation, financial incentives, and regular group feedback on compliance. Surveillance of hand washing compliance and nosocomial infections before and during the program was analyzed. Overall compliance with hand hygiene improved from 43% at baseline to 80% during the promotion program. The rate of nosocomial infections decreased from 15.13 to 10.69 per 1,000 patient-days ($p = 0.003$) with improved hand washing compliance. In particular, respiratory tract infections decreased from 3.35 to 1.06 per 1,000 patient-days during the hand washing campaign ($p = 0.002$). Furthermore, the correlation between nosocomial infections of the respiratory tract and hand washing compliance also reached statistical significance ($r = -0.385$; $p = 0.014$). Improved compliance with hand washing was associated with a significant decrease in overall rates of nosocomial infections and respiratory infections in particular. Washing hands is a simple, economical, and effective method for preventing nosocomial infections in the NICU.

Hand hygiene is a cost-effective method for preventing infection transmission. However, hand hygiene practices have been found to be faulty in most healthcare settings.

A study was conducted at Assam College of Medicine, Saudi Arabia, to evaluate the awareness and compliance of hand hygiene among undergraduate medical students during their clinical phase. A questionnaire based on the World Health Organization's concept of the "Five Moments for Hand Hygiene" was used to evaluate awareness of the indications for hand hygiene, and compliance was observed during Objective Structured Clinical Examination (OSCE) sessions. Sixty students, including thirty-six males (60%) and twenty-four females (40%), participated voluntarily in the study. The average awareness regarding the positive indications of hand hygiene was 56%. The remaining 44% of students were either unsure or unaware of the indications for hygiene. Only 29% of students were able to identify all five indications for hand hygiene in the questionnaire. Compliance as assessed during the OSCE sessions was only 17%, with no significant difference observed between genders. It was concluded that serious efforts are needed to improve hand hygiene practices among medical students.

RESULTS:

A pre-experimental one-group pre-test and post-test research design was used. A total of 50 nurses, including 25 Staff Nurses, 15 B.Sc. Nurses, and 10 ANM Nurses, participated in the study. A structured questionnaire was used to assess their knowledge before and after the awareness programme. Hand hygiene practices were also observed. Descriptive and inferential statistics were used, and the Chi-square test was applied to determine the association between variables at a significance level of $p < 0.05$. The results showed that the awareness programme improved the nurses' knowledge about hand hygiene. B.Sc. Nurses had the highest knowledge score (93.4%) and showed better hand hygiene compliance than the other groups. Out of 308 hand hygiene opportunities, hand hygiene was performed in 180 cases, giving an overall compliance rate of 58.4%. The main reason for not following hand hygiene was being too busy (64%). The study concludes that awareness programmes are effective in improving nurses' knowledge and hand hygiene practices, which can help prevent healthcare-associated infections and improve patient safety.

CONCLUSION:

The present study found that the awareness programme significantly improved the knowledge of staff nurses regarding hand hygiene. B.Sc. Nurses achieved the highest knowledge score (93.4%) compared to the other nursing categories. The overall hand hygiene compliance rate was 58.4%, indicating moderate adherence to recommended practices. The main reason for non-compliance was being too busy (64%), highlighting the effect of workload on hand hygiene practices. These findings suggest that regular awareness programmes and continuous monitoring can improve hand hygiene compliance and help prevent healthcare-associated infections.

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