

# Breaking the Chain of the Infection by the Power Knowledge

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**Abstract:** ***Introduction:** Nosocomial infection (NI) or Health - care - associated infection (HCAI) refers to infection that is acquired during the process of care and not manifested at the time of admission to a hospital or other health - care facility. It has been estimated that the risk of health care - associated infection is 2 to 20 times higher in developing countries compared to developed countries and 5% - 10% of patients admitted to hospitals in developed countries acquire these infections (WHO, 2020). HAIs is common adverse events during healthcare delivery and a major public health issue affecting morbidity, mortality and quality of life. At any time, up to 7% of patients in developed and 10% in developing countries will acquire at least one HAI, causing a considerable and economic burden to the society. **Methods:** Quantitative descriptive research approach with Pre experimental one group pre test & post test design was adopted. The sample size 135 was selected by using purposive sampling technique. Data were collected from staff nurses and students by means of structured knowledge questionnaire. **Results and Discussion:** The findings of the study revealed that most of the study samples 66 (49%) were between 20 - 30 years of age group and with regard to Gender, female was 112 (89%) and male were 23 (17%) respectively. Post - test mean knowledge score was 13+ 4.08 higher than the pre - test score. Thus, the difference in the level of knowledge were found to be significant at  $p < 0.001$  level. The study concluded that the STP was effective to improve the knowledge regarding infection control and prevention among staff nurses and students.*

**Keywords:** Structured Teaching Programme, Health Care Facility (HCF), Hospital Acquired Infection (HAI), Antimicrobial Resistance (AMR), Infection Control and Prevention (ICP).

## 1. Introduction

Effective infection prevention and control is central core to provide high quality health care for patients and a safe working environment for those that work in healthcare settings. It is important to minimize the risk of spread of infection to patients and staff in hospital by implementing good infection control programme.

Infection prevention and control is a scientific approach with practical solutions designed to prevent harm, caused by infections, to patients and health care workers grounded in principles of infectious disease, epidemiology, social science and health system strengthening, and rooted in patient safety and health service quality. Out of every 100 patients in acute - care hospitals, seven patients in high - income countries and 15 patients in low - and middle - income countries will acquire at least one health care - associated infection (HAI) during their hospital stay. On average, 1 in every 10 affected patients will die from their HAI. (WHO, 2022). Over 24% of patients affected by health care - associated sepsis and 52.3% of those patients treated in an intensive care unit die each year. Deaths are increased two to threefold when infections are resistant to antimicrobials.

Nationally, among acute care hospitals, the 2021 annual highlights in this report include: Overall, 7% increase in CLABSI between 2020 and 2021. Largest increase in ICUs (10%). Overall, 5% increase in CAUTI between 2020 and 2021. Largest increase in ICUs (9%). Overall, there was a

12% increase in VAE between 2020 and 2021. Observed a 12% increase in ICUs. Observed a 16% increase in non - ICUs. Overall, there were no significant changes in SSI related to the 10 select procedures tracked in the report between 2020 and 2021.

### Statement of the problem

A study to assess the Effectiveness of Structured Teaching Programme on level of knowledge regarding Infection Control and Prevention among nursing students and staff nurses, at selected health care Institution, Coimbatore.

### Objectives

- 1) To assess the pre and post - test level of knowledge regarding Infection Control and Prevention among nursing students and staff nurses
- 2) To evaluate the Effectiveness of Structured Teaching Programme on level of knowledge score regarding Infection Control and Prevention among Nursing students and staff Nurses.

### Hypotheses

**H<sub>1</sub>:** There will be significant difference in pretest and post - test level of knowledge regarding Infection Control Practices among Nursing students and staff Nurses.

## 2. Research Design

Quantitative descriptive research approach was used in the study. The research design adopted for this study was Pre -

experimental One group pre - test post - test design. Totally 135 research participants were selected by using purposive sampling technique.

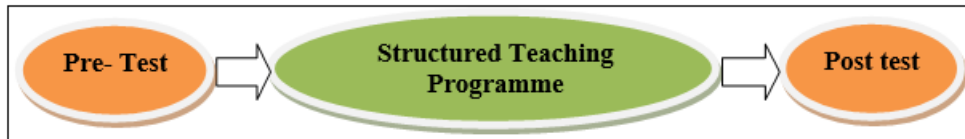


Figure 1: Pre experimental one group pre test & post test design.

**Setting and Sampling Technique of the Study**

The study was conducted at PSG College of Nursing, Coimbatore, 135 research participants were selected by using non probability purposive sampling technique.

**Inclusion Criteria**

The nurses working in the ICU, Emergency department, Medical wards, and Surgical wards, pediatric, neonatal, and operation wards, hospitals with full time employment and under graduate Nursing students.

**Exclusion Criteria:**

Those who were not willing

**Tool of the Study:**

For data collection a structured knowledge questionnaire was developed by researcher and used to assess level of knowledge. The staff nurses and nursing student’s knowledge were assessed by structured knowledge questionnaire.

**Intervention**

After obtaining informed consent, demographic variables were collected, pretest was conducted by using structured knowledge questionnaire. The structured teaching programme was provided on various aspect of Infection Control and Prevention. Such as basics in organisms causing HAI, an epidemiology of community infectious diseases, health care associated infection: the impact & its significance, nurses role in facing challenges and opportunities, quality care and patient safety, high risk areas and procedures related infections, technological advancements in prevention of health care associated infection bundles used in prevention of HAI, protection of health care workers from infection and surveillance. After the teaching, post test was collected.

**Ethical Consideration**

Anonymity was maintained by getting informed consent from the participants. The collected information’s were kept confidential.

**3. Results & Discussion**

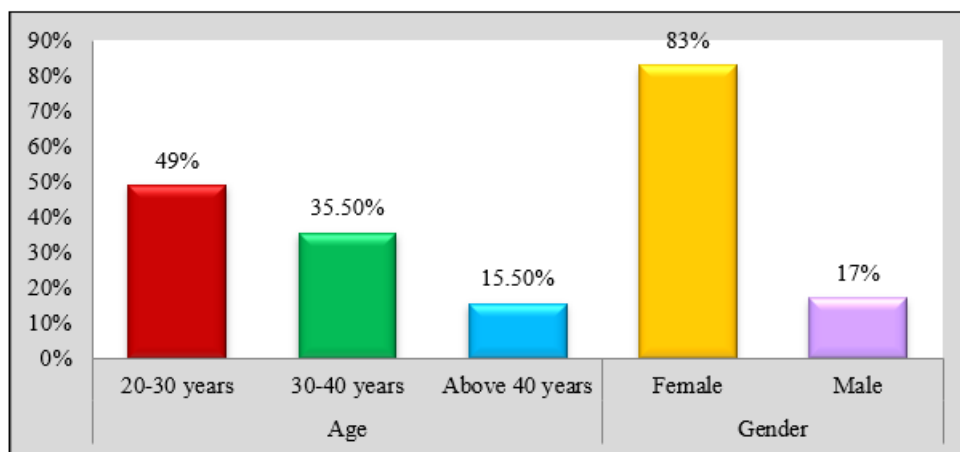


Figure 2: Distribution of demographic variables among study subjects, N=135

Fig 2 demonstrates the distribution of demographic variables among study subjects. The most of the study samples 66 (49%) were between 20 - 30 years, 48 (35.50%) were between 30 - 40 years of age group and 21 (15.50%) were between Above 40 years. With regard to Gender, female was 112 (89%) and male were 23 (17%) respectively.

**Table 1:** Mean, Standard Deviation and Paired T test value on level of knowledge regarding Infection Control and Prevention. N=135

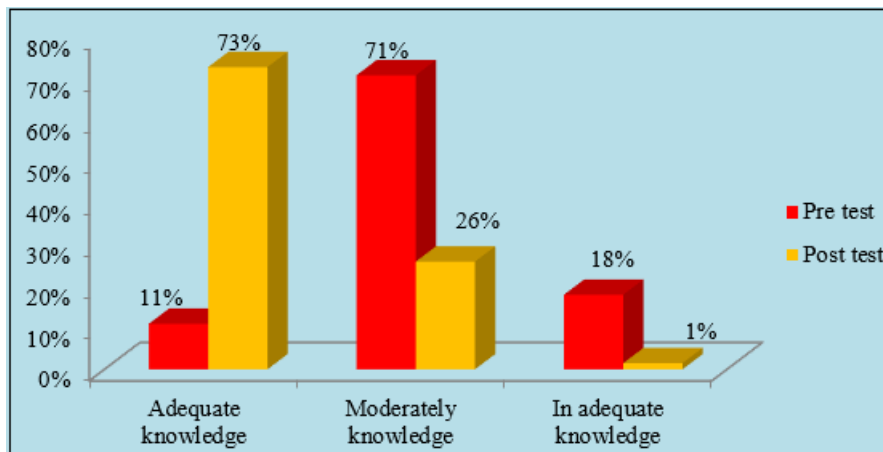
	Max Score	Mean +SD	Percentage of Knowledge score	Calculated ‘t’ value	Table value
Pre test	30	13+ 4.08	36.67	**13.00	3.88
Post test	30	19+ 3.40	63.33		

\*\*\* Significance at the level of p≤0.001.

Table No 1 portrays that the mean and standard deviation of knowledge scores in pretest and post test was 13+ 4.08 and 19+ 3.40 respectively. The calculated t value was \*\*13 which in greater than the table value 3.88, which was highly

significant at the level of  $p \leq 0.001$ . This showed that the level of knowledge had improved regarding infection control

and prevention among nursing students & staff nurse.



**Figure 3:** Comparison of pretest and post test level of knowledge score on infection control and prevention among nursing students and nurses, N=135

Fig 3 shows that among 135 research participants, 24 (18%) of them had inadequate knowledge in pretest. Only 96 (71%) had moderate level of knowledge of pretest. In post test assessment of knowledge after the session, majority of 98 (73%) research participants gained adequate knowledge and 35 (26%) of them gained moderately adequate knowledge regarding Infection Control Practices.

#### 4. Results and Discussion

The study was conducted to assess the Effectiveness of Structured Teaching Programme on level of knowledge regarding Infection Control and Prevention among nursing students and staff nurses. Anonymity was maintained by getting informed consent from the participants. In demographic Variables it includes Age and Gender. Majority of the samples 66 (49%) belongs to the age group of 20 - 30, 49 (35.5%) were under the age group of 30 - 40 years and 21 (15.5%) belongs to the age group of above 40 years. In Gender, majority of the samples 112 (83%) were females and 23 (17%) were males.

Knowledge scores of pretest and post test was  $13 + 4.08$  and  $19 + 3.40$  respectively. The calculated t value =13 (table value 3.88) which was significant at the level of  $p \leq 0.001$ . This shows that the increase level of knowledge regarding Infection Control and Prevention among nursing students & staff nurse after the structured teaching program. Therefore, research hypothesis  $H_1$  was accepted, hence null hypothesis was rejected. The study proved that knowledge of the staff nurses and students significantly affects their practices for infection control, it becomes imperative for the hospitals to ensure that the nurses have a good level of knowledge and positive attitude for infection control

**Conflict of the Interest:** None to be declared.

#### 5. Conclusion

According to the findings, the Structured Teaching Programme was successful in bringing about the anticipated changes in staff nurses, nursing students on Infection

Control and Practices. As a result, it can be used as an effective teaching approach to communicate health messages among nursing students and staffs.

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