

# **Assess the effectiveness of planned teaching programme on knowledge and practice regarding infection control measures for post operative cardiac patients**

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## **I. Back Ground Of The Study**

Infection is the invasion of susceptible host by microorganisms and pathogens that will result in infectious diseases to the patients. There is an important difference present between infection and colonization. Colonization means the growth of microorganisms within the host without tissue invasion or damage (Tweeten 2009).

### **STATEMENT OF THE PROBLEM**

An experimental study to assess the effectiveness of planned teaching programme on knowledge and practice regarding infection control measures for post operative cardiac patients among staff nurses at selected hospital in Chennai.

### **OBJECTIVE OF THE STUDY**

1. To assess the pre and post test level of knowledge and practice of infection control measures among staff nurses.
2. To correlate the level of knowledge and practice of staff nurses regarding infection control measures.
3. To assess the effectiveness of planned teaching programme on knowledge and practice of staff nurses regarding infection control measures.
4. To associate the mean differed level of knowledge and practice regarding infection control measures with selected demographic variables of staff nurses.

## **II. Operational Definition**

### **Effectiveness**

It refers to the extent to which the planned teaching programme on infection control measures for post operative cardiac patients has brought changes in the level of knowledge and practice of staff nurses which was elicited by Self administered questionnaire and Nurses Performance Observational check list.

### **Planned Teaching Programme**

It is an educational package which was designed by the investigator to enhance the knowledge and practice of staff nurses regarding infection control measures which included hand hygienic practices, personal protective equipments, care of invasive lines, prevention of ventilator associated pneumonia, surgical site infection, catheter associated urinary tract infection and biomedical waste management by using various methods of teaching such as lecture, demonstration and exhibition.

### **Knowledge**

It refers to awareness and understanding of staff nurses regarding infection control measures of post operative patients which was measured by using self administered questionnaire.

### **Practice**

It refers to the skills of the staff nurses in performing the routine activities and standard precautions to prevent and control the infection of the post operative cardiac patients which will be assessed by nurse's performance observational check list.

### **Infection Control Measures**

The routine activities and procedures to be carried out by the staff nurses to prevent the infection among post operative cardiac patients which included hand hygienic practice, personal protective equipments, care of invasive lines, prevention of ventilator associated pneumonia, surgical site infection, catheter associated urinary tract infection and biomedical waste management

### **Post operative cardiac patients**

Post operative cardiac patients who have undergone cardiac surgeries at Madras Medical Mission Hospital.

### **Staff Nurses**

A registered nurse with diploma, degree or PG qualifications working in the post operative cardiac care unit with less than 1 year of experience.

### **HYPOTHESES**

**NH<sub>1</sub>**- There is no significant difference between pre and post level of knowledge and practice regarding infection control measures among staff nurses.

**NH<sub>2</sub>**- There is no significant relationship between post test knowledge and practice on infection control measures among staff nurses.

**NH<sub>3</sub>**- There is no significant association of mean differed knowledge and practice with selected demographic variables of staff nurses.

### **ASSUMPTION**

1. Post operative cardiac patients are prone to get infection.
2. Staff nurses are with the patients round the clock and they need to be updated with continuous education and practical skills on infection control measures.

### **DELIMITATION**

This study was delimited to the period of 4 weeks

### **RESEARCH METHODOLOGY**

This chapter deals with the methodology adopted for the study. It includes design, setting, population, sample, sampling technique, and criteria for sample collection, tools and techniques for data collection, content validity of the tools, pilot study, and plan for data analysis.

### **RESEARCH APPROACH**

The research approach used for the study was quantitative research approach

### **RESEARCH DESIGN**

The research design used for the study was pre-experimental one group pre test and post test design.

| Day 1          | Day 1        | Day 7          |
|----------------|--------------|----------------|
| O <sub>1</sub> | x            | O <sub>2</sub> |
| Pre-test       | Intervention | Post-test      |

### **VARIABLES OF THE STUDY**

#### **Independent Variables**

Planned teaching programme on infection control measures.

#### **Dependent Variables**

Knowledge and practices regarding infection control measures.

#### **Demographic Variables**

Age, gender, education, duration of work experience, attendance of training programmes about infection control.

### **RESEARCH SETTINGS**

The study was conducted at Madras Medical Mission Hospital Mogappair Chennai, which is a Cardiac speciality hospital with 281 beds and 25 post operative cardiac care beds to provide intensive care to patients after surgery. The study was conducted in post operative Cardiac care unit of MMM hospital.

#### **Target Population**

Staff nurses working in cardiac post operative intensive care units of Tamilnadu were the target population.

#### **Accessible Population**

Staff nurses working in post operative cardiac care unit of MMM.

#### **SAMPLE**

Staff nurses who fulfilled the sample selection criteria.

#### **SAMPLE SIZE**

Sample size of the study was 40

#### **SAMPLING TECHNIQUE**

Sampling technique used by the investigator was non probability convenience sampling technique

### **CRITERIA FOR SAMPLE SELECTION**

#### **Inclusion Criteria**

Nurses who were having less than 1 year of experience.

**Exclusion Criteria**

Nurses who have undergone intensive training on infection control measures.

**SCHEMATIC REPRESENTATION OF DATA COLLECTION PROCEDURE**

| Phases of Data Collection                 | Activity Done   | Time and Duration  |
|---|---|--|
| <b>Phase I</b><br>Pre- test assessment    | Pre-test knowledge of staff nurses was assessed by self administered questionnaire includes general information on infection, hand washing, personal protective equipments, care of invasive lines, prevention of ventilator associated pneumonia, prevention of surgical site infection, prevention of urinary catheter infection, disinfection and sterilization, biomedical waste management | It took 30 minutes to complete pretest assessment of knowledge<br>One full day observation was done for pre-test assessment of practices.  |
| <b>Phase II</b><br>Intervention phase     | Infection control training programme was administered through Information Transfer, demonstration and exhibition.   | Each group took 1 hours and 15 minutes to complete 3 sessions<br>1 <sup>st</sup> Session-Information transfer which lasted for 30 minutes.<br>2 <sup>nd</sup> Session–demonstration on hand washing techniques and use of personal protective equipments for 30 minutes<br>3 <sup>rd</sup> Session – exhibition on personal protective equipments and biomedical waste management. |
| <b>Phase III</b><br>Post Assessment phase | Post test was conducted after 1 week of planned teaching programme on infection control measures<br>After 1 week of the intervention post test assessment of knowledge and practice were done.  | It took 30 minutes to complete post-test assessment of knowledge and One full day observation was done for post-test assessment of Practice.   |

**Fig: 3.1: Schematic representation of data collection procedure.**

**III. Data Analysis Procedures**

**Descriptive Statistics**

1. Frequency and percentage distribution were used to analyse the demographic variables.
2. Frequency, percentage, Mean and standard deviation were used to assess the pre and post test level of knowledge and practices on infection control measures.

**Inferential Statistics**

1. Correlation and coefficient were used to find out the relationship between knowledge and practice among staff nurses.
2. Paired t-test was used to compare the pre and post-test level of knowledge and practice among staff nurses.
3. Chi-square was used to associate the mean differed knowledge and practice score with selected demographic variables of staff nurses.

**IV. Summary**

**The major findings of the study were:**

- The findings related to demographic variables revealed that majority of the samples were young female nurses with B.Sc. nursing qualification and they had nearly 6 months to 1 year of experience and many of them had not attended any class on infection control previously.
- The overall pre-test level of knowledge revealed that 12(30%) had inadequate knowledge and 23(57.5%) had moderately adequate knowledge regarding infection control, and none of the samples falls under the category of adequate knowledge.
- The overall post-test level of knowledge revealed that majority 40(100%) had adequate knowledge regarding infection control.
- The overall pre-test level of practice revealed that 36(90%) had inadequate practice and 4(10%) had moderately adequate practice and none of the samples had adequate practice regarding infection control.
- The overall post-test level of practice revealed that 11(27.5%) had moderately adequate practice regarding infection control and 29(72.5%) had adequate practice regarding infection control.
- The findings also revealed that the pre-test mean score of knowledge was 16.47 with S.D of 4.57 whereas in the post test the mean score of knowledge was 29.92 with S.D of 0.26. The calculated paired 't' test value  $t = 18.463$  which was found to be statistically significant at  $p < 0.001$ .

- The findings revealed that the pre-test mean score of practice was 12.75 with S.D of 2.59 whereas in the post test the mean score of practice was 30.70 with S.D 4.13. The calculated paired 't' test value  $t = 23.76$  which was found to be statistically significant at  $p < 0.001$ .
- The findings revealed that the post-test mean knowledge score was 29.92 with the S.D of 0.26 and post-test mean practice score was 30.70 with the S.D of 4.13. The calculated 'r' test value  $r = 0.351$  showed a moderate positive correlation between post-test knowledge and practice score which was found to be statistically significant at  $p < 0.001$ .
- The findings revealed that there was no statistically significant association was found with other demographic variables such as age, gender, educational level, duration of work experience and attendance at any class on infection control measures.
- The findings revealed that there was no statistically significant association found between the mean differed level of practice and demographic variables such as age, gender, educational level, duration of work experience and attendance at any class on infection control measures.

### **NURSING IMPLICATION**

The implications of the study can be seen in the area of nursing practice, nursing service and nursing research.

#### **Nursing Practice**

- Staff nurses must be competent and could earn points towards their Clinical Practice Developmental Program thereby professional development.
- The nursing manager or unit educator could be responsible for updating the policy.

#### **Nursing Education**

- Nurse educators should incorporate the importance of infection control in the curriculum from first year nursing program.
- Nurse educators should develop the skill among nursing students on preventing infection.
- Nurse educator should encourage the students to organize educational programs to emphasize the importance of infection control.

### **RECOMMENDATION**

Based on the study findings, the following recommendations were made

1. A similar study could be done with other teaching strategies to identify the differences in their knowledge and practice of infection control.
2. Compare classroom & online methods for teaching nurses and nursing students on basics of infection control measures.
3. The nurse researcher recommends the department of cardiology and nursing service of Madras Medical Mission hospital to utilize this study as a model and to conduct periodic in-service education programme on infection control.

### **REFERENCES**

#### **BOOKS:**

- [1]. Artene, N. Polaski & Suzanne Tatro. (1996). *Medical Surgical Nursing*. Philadelphia: WB Saunders Company.
- [2]. Basavanthappa, B.T. (2003). *Medical Surgical Nursing* (1<sup>st</sup>ed.). New Delhi: Jaypee Brothers Medical Publishers.
- [3]. Carol Taylor. (2008). *Fundamentals of nursing*. 6<sup>th</sup> edition. Philadelphia Wolters publications.
- [4]. Chris Brooker, Maggie Nicol. (2006). *Alexander's Nursing Practice*. 4<sup>th</sup> edition. Elsevier publications
- [5]. Christopher Sudhaker, Dr. Sugandhi Rao. (2008). *Manipal Training Manual of Infection Control*. 1<sup>st</sup> edition. CBS publishers.

#### **JOURNALS:**

- [6]. Abd Elaziz, K.M., Bakr, I.M. (2009). A study to assess the knowledge, attitude and practice of hand washing among health care workers in Ain shams university hospital. *Journal of preventive medicine hygiene*, 19-25.
- [7]. Acharya, A.S. (2013). Knowledge and practice of standard precautions on infection control among nurses in a tertiary care hospital. *Nursing journal of India* 257-259
- [8]. Adriane Kamulegeyal. (2013). Assess the infection control knowledge and practices. *Journal of infection dev tries*. 7(10): 726-733.
- [9]. Aiello, A.E. (2009). A study to assess the influence of knowledge, perceptions and belief on hand hygiene practices in nursing homes. *Journal of infection control*. 164-167.
- [10]. Akyol, A.D. (2007). A study to assess practice and knowledge of hand hygiene. *Journal of clinical nursing*. 431-437.
- [11]. Allegranzi, B. (2013). A quasi-experimental study to assess the global implementation of WHO's multimodal strategy for improvement of hand hygiene. *Journal of lancet infectious disease*. 843-51.
- [12]. Anargh, V., Singh H, Kulkarni, A., Kotwal, A. (2012). Hand hygiene practices among health care workers in a tertiary care facility in Pune. *Medical journal armed forces of India*, 69(1): 54-6.