



## A PRE-EXPERIMENTAL STUDY TO ASSESS THE EFFECTIVENESS OF PLANNED TEACHING PROGRAMME ON KNOWLEDGE AND PRACTICE REGARDING THE USE OF INCENTIVE SPIROMETRY AMONG POST OPERATIVE CARDIAC SURGERY PATIENTS IN SELECTED HOSPITAL AT DELHI/NCR.

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### ABSTRACT:

**Background:** Cardiovascular disease is the leading cause of death worldwide, responsible for 17.5 million deaths every year, of which 80% occur in low- and middle-income countries. Some 75% of the world does not have access to cardiac surgery when needed because of lack of infrastructure, human resources, and financial coverage.

**Aim:** The objective of the study is to assess the knowledge and practice regarding use of incentive spirometry among postoperative cardiac surgery patients in selected hospital at Delhi/NCR.

**Materials and methods:** This study was conducted on 30 postoperative cardiac surgery patients in Max hospital Shalimar bagh at Delhi NCR. Pre- experimental research design was adopted and purposive sampling technique was used to select the sample. A structured knowledge questionnaire of 21 questions and practice checklist of 10 items were prepared to assess the knowledge and practice of the postoperative cardiac surgery patients. On Day 1, self introduction was given and rapport was established, introduction to the nature of the study was given and informed and signed consent was taken. On the day 1 of the surgery data collection was done and pretest was taken and teaching was given to the patients. On day 8th post -test was done with the same tool. Data was analyzed by using descriptive and inferential statistics in terms of frequency, percentages, Mean, S.D.

**Result:** In Pre-test, maximum number of postoperative cardiac surgery patients i.e., 19 (63.33%) were having very good knowledge, 11 (36.6%) were having good knowledge, regarding the use of incentive spirometry among postoperative cardiac surgery patients. In Post -test, most of the samples i.e., 30 (100%) were having excellent knowledge regarding the use of incentive spirometry among postoperative cardiac surgery patients which shows increase in the knowledge score. In Pre-test practice Scores, maximum number of postoperative cardiac surgery patients i.e., 21(70%) were having good practice, 4 (13.3%) were having poor practice whereas 5(16.66%) were having very good practice regarding the use of incentive spirometry among postoperative cardiac surgery patients. Whereas in post-test practice scores, maximum number of postoperative cardiac surgery patients i.e.28 (93.33%) were having very good practice and 2 (6.66%) is having good practice regarding the use of incentive spirometry among postoperative cardiac surgery patients shows increase in practice score. The mean Post test knowledge score of postoperative cardiac surgery patients is (19.67) which is higher than mean Pretest knowledge score (11.2), with the mean difference of 8.47. The obtained mean difference was found to be statistically significant. The calculated "t" value is 21.6 which is greater than the table value at 0.05 level of significance at df (29). Hence, it is concluded that the planned teaching program was effective in increasing the knowledge regarding the use of incentive spirometry among postoperative cardiac surgery patients. The mean Posttest practice score of postoperative cardiac surgery patients is (26.43) higher than the mean Pretest practice (15.67), with the mean difference of 10.76. The calculated "t" value is 13.30 which are greater than the table value at 0.05 level of significance at df (29).

**Conclusion:** it is concluded that the planned teaching program was effective in increasing the practice regarding the use of incentive spirometry among postoperative cardiac surgery patients. Hence the study revealed that planned teaching programme was effective and improving the knowledge and practice among postoperative cardiac surgery patients.

### KEYWORDS:

PLANNED TEACHING PROGRAMME, KNOWLEDGE, PRACTICE.

### INTRODUCTION

"Good health and good sense are two great blessings." —  
Latin Proverb".<sup>1</sup>

According to the Centers for Disease Control and

Prevention (CDC), heart disease is the leading cause of death in the United States. Around 1 in 4 deaths in the U.S. occur due to heart disease, and it affects all genders as well as all racial and ethnic groups. in different ways.

India has one of the highest burdens of **cardiovascular disease (CVD) worldwide**. The annual number of deaths from **CVD in India** is projected to rise from 2.26 million (1990) to 4.77 million (2020). There are various types of heart diseases: Coronary artery disease, Congenital heart defects, Arrhythmia, Dilated cardiomyopathy, Myocardial infarction, Heart failure, Hypertrophic cardiomyopathy, Mitral valve regurgitation, Mitral valve prolapsed, Aortic stenosis<sup>2</sup>

### NEED FOR STUDY

Cardiovascular surgery, also referred to as cardiac surgery or heart surgery, describes any surgical procedure that involves the heart, or the blood vessels that carry blood to and from the heart. These procedures are common with patients who have heart disease or have had a heart attack, stroke or blood clot—as well as individuals who are at high risk for developing these problems.

While cardiovascular surgery isn't always necessary to treat heart problems, doctors may recommend it for a variety of reasons, including treating or preventing heart attacks and blood clots, addressing irregular heartbeats, opening blocked or narrowed arteries, repairing congenital heart problems, and fixing damaged or diseased heart valves. Some cardiovascular conditions require open surgery, but many are treated with less invasive techniques that use catheters and robotics.

### PROBLEM STATEMENT

**A study to assess the effectiveness of planned teaching programme on knowledge and practice regarding the use of incentive spirometry among postoperative cardiac surgery patients in selected hospital at Delhi/NCR.**

### OBJECTIVES

- To assess the knowledge and practice regarding use of incentive spirometry among postoperative cardiac surgery patients in selected hospital at Delhi/NCR.
- To evaluate the effectiveness of planned teaching programme on use of incentive spirometry among postoperative cardiac surgery patients in selected hospital at Delhi/NCR.
- To find out the association between post-test knowledge score with selected demographic variables of patients among postoperative cardiac surgery patients in selected hospital at Delhi/NCR.
- To find out the association between post-test practice score of postoperative cardiac surgery patients with selected demographic variables.

### HYPOTHESIS

- **H1-** There will be a significant difference between mean pre-test knowledge score and mean post-test knowledge score regarding the use of incentive spirometry among postoperative cardiac surgery patients as evidence by structured

questionnaire at 0.05 level of significance.

- **H2-** There will be a significant difference between mean pre-test practice score and mean post-test practice score regarding the use of incentive spirometry among postoperative cardiac surgery patients as evidence by observation checklist at 0.05 level of significance.
- **H3-** There will be a significant association between mean post-test knowledge score regarding the use of incentive spirometry among postoperative cardiac surgery patients who attended the planned teaching programme with selected demographic variable at 0.05 level of significance.
- **H4-** There will be a significant association between mean post-test practice score regarding the use of incentive spirometry among postoperative cardiac surgery patients who attended the planned teaching programme with selected demographic variable at 0.05 level of significance.

### METHODOLOGY

**RESEARCH APPROACH-** Quantitative Research Approach

**RESEARCH DESIGN-** pre experimental One group pretest and post test research design.

### VARIABLE

Independent Variables- planned teaching programme

Dependent Variables- knowledge and practice of postoperative cardiac surgery patients.

**SAMPLE AND SAMPLE SIZE -** Total 30

**EXPERIMENTAL-** 30

**CONTROL-** 30

**POPULATION-** postoperative cardiac surgery patients

**SETTING OF THE STUDY-** Selected Hospital In Delhi NCR

**SAMPLING TECHNIQUE-** Purposive Sample Technique

### DATA COLLECTION TOOL AND TECHNIQUE

- Demographic variables
- Structured knowledge questionnaire
- Observation checklist

### CRITERIA FOR SAMPLE SELECTION

#### INCLUSION CRITERIA

- Postoperative cardiac surgery patients only.
- Patients who will be available during the time of data collection.
- Patients who are willing to participate in the study.

#### EXCLUSION CRITERIA

- The patients who will not be available at the time of data collection.

- The patients who are not willing to participate in the study.
- Patients excluded at zero day of surgery .

**DESCRIPTION OF TOOL:**

**TOOL - 1: DEMOGRAPHIC DATA**

It consists of age, gender, marital status, education level, religion, occupation, monthly income in rupees, area of admission, any previous experience of using incentive spirometry.

**TOOL 2- CONSIST OF 21 SET OF KNOWLEDGE QUESTIONNAIRE.**

**Polit & Hungler (1999)** stated that the questionnaire is a relatively simple method for obtaining data and least time consuming the structured items are efficient easy to administer and analyze

It was developed to assess the knowledge and practice regarding the use of incentive spirometry among postoperative cardiac surgery patients after discussion with experts. Objective type items were prepared.

**TOOL 3- CHECK LIST HAVING 10 STATEMENTS REGARDING THE USE OF INCENTIVE SPIROMETRY AMONG POSTOPERATIVE CARDIAC SURGERY PATIENTS.**

**ETHICAL CLEARANCE:** Ethical clearance was obtained from Nightingale Institute of Nursing, Noida, UP, India.

**PLAN FOR DATA ANALYSIS**

The data obtained will be analyzing as per the objectives of the study and is organized under the following headings: -

❖ **DESCRIPTIVE STATISTICS**

- Frequency and percentage distribution will be used to analyze the demographic data.
- Mean, median, mean difference, standard deviation is used for assessing the Knowledge score.

❖ **INFERENCE STATISTICS**

- Paired T- test will be used to find out the effectiveness of planned teaching programme on knowledge and practice.
- Fisher’s exact P test is used to find out the association between the knowledge and practice with selected demographic variables among postoperative cardiac surgery patients.

**RESULT & DISCUSSION**

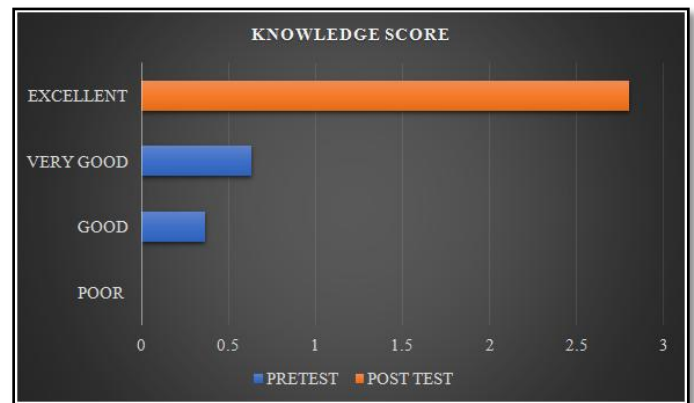
**SECTION I- FREQUENCY AND PERCENTAGE DISTRIBUTION OF POSTOPERATIVE CARDIAC SURGERY PATIENTS IN TERMS OF DEMOGRAPHIC DATA**

- Highest percentage of postoperative cardiac surgery patients is i.e., 19 (63.37%) were under the age group of 61 and above years, least

percentage i.e., 11(36.67%) were in age group 41-60years.

- Regarding the gender, majority postoperative cardiac surgery patients i.e., 17 (56.6%) were Male and least i.e., 9(30%) were female.
- Majority of the postoperative cardiac surgery patients i.e.20(66.67%) were married and 10 (33.33%) were unmarried .
- Maximum number of postoperative cardiac surgery patients i.e., 22(73.33%) were uneducated, 8 (26.6%) was having middle school education.
- Majority of postoperative cardiac surgery patients i.e., 21 (70%) were Hindu, 6 (20%) were Muslim and 3 (10%) was Christian.
- Majority of the postoperative cardiac surgery patients i.e., 20(66.67%) were having other occupation, 6(20%) were house wife and 4 (13.33%) were having private job.
- Majority of the postoperative cardiac surgery patients i.e. 27(90%) were having monthly income above 30,000 and 3(30%) were having monthly income 30,000.
- Majority of the postoperative cardiac surgery patients i.e. 20(66.67%) were admitted in CCU and 10(33.33%) were admitted in ICU.
- Mostly postoperative cardiac surgery patients i.e. 19(63.37%) were having previous experience regarding the use of incentive spirometry and 11(36.67%) were having no previous experience.

**SECTION II- FREQUENCY AND PERCENTAGE DISTRIBUTION OF PRE-TEST AND POSTTEST KNOWLEDGE SCORE REGARDING THE USE OF INCENTIVE SPIROMETRY AMONG POSTOPERATIVE CARDIAC SURGERY PATIENTS IN SELECTED HOSPITAL AT DELHI/NCR.**



**FIGURE 10 -BAR DIAGRAM SHOWING FREQUENCY AND PERCENTAGE DISTRIBUTION OF PRE-TEST AND POST-TEST KNOWLEDGE SCORE REGARDING THE USE OF INCENTIVE SPIROMETRY AMONG POSTOPERATIVE CARDIAC SURGERY PATIENTS.**

- In Pre-test, maximum number of postoperative cardiac surgery patients i.e., 19 (63.33%) were having very good knowledge, 11 (36.6%) were having good knowledge, regarding the use of incentive spirometry among postoperative cardiac surgery patients.
- In Post -test, most of the samples i.e., 30 (100%) were having excellent knowledge regarding the use of incentive spirometry among postoperative cardiac surgery patients Hence the intervention (acupressure) was effective in reducing pain during needle insertion in arteriovenous fistula among hemodialysis patients.



**FIGURE 11 -PIE DIAGRAM SHOWING FREQUENCY AND PERCENTAGE DISTRIBUTION OF PRE-TEST AND POST-TEST PRACTICE CHECK LIST SCORE REGARDING THE USE OF INCENTIVE SPIROMETRY AMONG POSTOPERATIVE CARDIAC SURGERY PATIENTS.**

1. In Pre-test practice Scores, maximum number of postoperative cardiac surgery patients i.e., 21(70%) were having good practice, 4 (13.3%) were having poor practice whereas 5(16.66%) were having very good practice regarding the use of incentive spirometry among postoperative cardiac surgery patients.
2. Whereas in post-test practice scores, maximum number of postoperative cardiac surgery patients i.e.28 (93.33%) were having very good practice and 2 (6.66%) is having good practice regarding the use of incentive spirometry among postoperative cardiac surgery patients.

**Section III- Mean, mean difference, standard deviation and “t” value of knowledge regarding the use of incentive spirometry among postoperative cardiac surgery patients in selected hospital at Delhi/NCR.**

N=30

S.NO	MEAN	MEAN DIFFERENCE	MEDIAN	Z	‘t’ VALUE
Pre-test	11.2	8.47	12	2.10	21.6
Post-test	19.67		20	1.007	

df

- The mean Post test knowledge score of postoperative cardiac surgery patients is (19.67) which is higher than mean Pre-test knowledge score (11.2), with the mean difference of 8.47. The obtained mean difference was found to be statistically significant.
- The calculated “t” value is 21.6 which is greater than the table value at 0.05 level of significance at df (29). Hence, it is concluded that the planned teaching program was effective in increasing the knowledge regarding the use of incentive spirometry among postoperative cardiac surgery patients. Therefore, null hypothesis (H<sub>0</sub>) is rejected, and research hypothesis (H<sub>1</sub>) is accepted.

**Mean, mean difference, standard deviation and “t” value of practice regarding the use of incentive spirometry among postoperative cardiac surgery patients.**

H<sub>02</sub>- there is no significant difference between mean pre-test practice score and mean post-test practice score regarding the use of incentive spirometry among postoperative cardiac surgery patients at 0.05 level of significant.

N=30

S.NO	MEAN	MEAN DIFFERENCE	MEDIAN	SD	‘t’ VALUE
Pre test	15.67	10.76	16	4.34	13.30
Post test	26.43		28	2.96	

df (29)= 1.699 at 0.05 level of significance

The Data presented in table 5 shows that

The mean Post-test practice score of postoperative cardiac surgery patients is (26.43) which is higher than the mean Pre-test practice (15.67), with the mean difference of 10.76. The obtained mean difference was found to be statistically significant.

1. The calculated “t” value is13.30 which are greater than the table value at 0.05 level of significance at df (29). Hence, it is concluded that the planned teaching program was effective in increasing the practice regarding the use of incentive spirometry among postoperative cardiac surgery patients .Therefore, null hypothesis is rejected, and research hypothesis is accepted.

**SECTION IV:**

**Findings related to fisher’s exact “p” test was used to describe the association between the post-test knowledge score of selected demographic variables**

The data shows that fisher ‘s exact test value obtained to find out the association between post test knowledge score with demographic variables. On computation it was found that there was significant association between post test score of postoperative cardiac surgery patients using

incentive spirometry with demographic variables i.e. Age , religion, education and occupation as P value obtained is less than at 0.05 level of significant. Hence, research hypothesis is partially accepted for the demographic variables.

Whereas it was found that demographic variables gender, marital status, monthly income, area of admission and any previous experience of using incentive spirometry were found non- significant which shows there is no significant association between post test score with these variables as the 'P' value obtained is greater than 0.05.

#### **Findings related to fisher's exact "p" test was used to describe the association between the post-test practice score of selected demographic variables**

1. The data shows that fisher 's exact test value obtained to find out the association between post test practice score with demographic variables. On computation it was found that there was significant association between post test practice score of postoperative cardiac surgery patients using incentive spirometry with demographic variables i.e. educational level and previous experience of using incentive spirometry as P value obtained is less than at 0.05 level of significant. Hence, research hypothesis is partially accepted for the demographic variables.
2. Whereas it was found that demographic variables age, gender, marital status, religion ,occupation ,monthly income, area of admission were found non- significant which shows there is no significant association between post test score with these variables as the 'P' value obtained is greater than 0.05.

#### **NURSING IMPLICATION**

The result of the study stresses the concern on evidence-based practice and qualities during providing care. The present study has following implication relating to nursing practice, nursing education, nursing administration and nursing research.

#### **IMPLICATIONS FOR NURSING PRACTICE**

1. In this study it means to assess the knowledge and practice regarding the use of incentive spirometry among postoperative cardiac surgery patients in selected hospital at Delhi/NCR."
2. Administration is the help needed in this study it means to administer planned teaching program among postoperative cardiac surgery patients to improve knowledge and practice regarding the use of incentive spirometry among postoperative cardiac surgery patients.
3. Validation of the action which is taken to help the postoperative cardiac surgery patients to have better outcomes. In this study, it means to determine the effectiveness of planned teaching program.

4. These study findings will help the patients, patients family members, nursing students, and other health personnel to understand the factors that influence the patient's knowledge and practice towards the use of incentive spirometry.
5. It also helps in developing desirable health care practices.

#### **IMPLICATIONS FOR NURSING EDUCATION**

- Nurse educator and student nurse must have awareness about the use of incentive spirometry among postoperative cardiac surgery patients.
- The goal is the desired outcome that the nurse wishes to accomplish the soul of this study is the use of planned teaching program regarding the use of incentive spirometry among postoperative cardiac surgery patients in selected hospital.
- The student's interest in nursing should be emphasized to upgrade them in their knowledge and practice in nursing profession.
- Through in-service education, nurses can become better equipped to understand and assist the critically ill patient in attaining their optimal level of emotional and physical health.
- Teach the nurses about the advantages of use of incentive spirometry.

#### **IMPLICATION FOR NURSING ADMINISTRATION**

- a) The nurse administrator should take active part in arranging classes for nurse to teach about use of incentive spirometry, thereby improving the standard of nursing and research based clinical practice
- b) Nurse should be encouraged to participate in such program by the nurse administrator to be a part of such health awareness and smooth functioning of management by saving time, money, material and energy.
- c) Nurse administrator should conduct planned teaching program, develop teaching material self-instructional module regarding the use of incentive spirometry among postoperative cardiac surgery patients in selected hospital .
- d) Nurse administer can motivate to repeat the study on large sample.
- e) Teaching the nurses about effectiveness of incentive spirometry.

#### **IMPLICATION FOR NURSING RESEARCH**

- The study will be reference for research scholars to conduct studies on longer scale.
- The study provides base line data for conducting other research studies.
- The study will be motivation for budding researcher to conduct a same study on larger scale.

- Adequate knowledge, motivation and encouragement by the management and authorities of the organization can enable various research activities.
- This could be the question of many novice nurses, when motivated to indulge in research activity could improve the body of knowledge of the profession.
- The findings of the study help the professional nurses to develop enquiring by providing a base.
- This study helps the nurse's researcher to develop insight into development of teaching module and material towards the promotion of health.

#### LIMITATION OF THE STUDY

- The study is limited to 30 patients only.
- Patients who are not willing to participate in the study
- Patients who are not available at the time of data collection.
- Patients who are not well to do the incentive spirometry exercises.

#### RECOMMENDATION

- A similar study can be conducted with the larger sample size
- A similar study can be conducted in cardiac and pulmonary hospital.
- A similar study can be conducted on upper thoracic and upper abdominal surgery patients to see the effectiveness of incentive spirometry.
- Comparative study can be done.
- Another methodology can be used to conduct the study.
- A similar study can be done any patients who are having risk to develop pulmonary infection or pneumonia to see the effectiveness of use of incentive spirometry.

#### SUMMARY

This chapter dealt with discussion, summary, conclusion, implication, limitation and recommendation.

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