

Assess the Effectiveness of Deep breathing Exercise with Incentive Spirometer on Patients Who Undergone Cardio Thoracic and Vascular Surgery in Selected Hospital Chennai

Dinesh.M Nursing Tutor,
Shri Sathya Sai College of Nursing.(Sri Balaji Vidyapeeth)

Abstract:- Objectives: The main aim of the study was to assess the effectiveness of deep breathing exercise with incentive Spirometer on the respiratory status of patients who have undergone cardiothoracic and vascular surgery in selected hospitals of Chennai. **Methods** Research design used for the study was quasi experimental one group pre-test post-test design. The study was conducted on 30 patients who have undergone cardiothoracic and vascular surgery at Cardio Thoracic and Vascular wards of Bharathiraja multi-speciality hospital and Global hospital, Chennai. Stratified random sampling technique was used. Data collection tool consisted of demographic variables and assessment of respiratory status using Respiratory Rate, Modified Bory Dyspnea Scale Peak Flow Meter and Pulsoximeter. Data were collected by pre assessment questionnaire and observation method. The collected data was tabulated analyzed and interpreted by using descriptive and inferential statistics **Result:** The result showed that deep breathing exercise with incentive spirometer was highly effective among patients who have undergone cardio thoracic and vascular surgery. The obtained P-value 0.000 was highly significant at $p < 0.00795$ level. **Conclusion:** The respiratory complications are the major post-operative complications which reduce the projected outcome of most of the cardio thoracic and vascular surgeries. This study reveals that deep breathing exercise cardiothoracic vascular surgery to a great extent with incentive spirometer can improve the respiratory status of the patients who have undergone Cardio Thoracic vascular surgery to a great extent.

Keywords:- Deep Breathing Exercise, Incentive Spirometer, and Respiratory Status.

I. INTRODUCTION

Cardio thoracic and vascular surgeries are getting important for the management of many cardiac and pulmonary disorders. United Nations Demographic year book (2008) states that more than 4 million surgeries are done worldwide. Among that about 30% of them are cardio thoracic and vascular surgeries: The Annual Health Indices (2010) shows that about 0.5 million Cardio Thoracic and Vascular Surgeries are done yearly in India. Out of them 50% to 70% is Coronary Artery Bypass Grafting though most of these surgeries are successful some of them are not free of post-operative complications. One of the most occurred post-operative complication is pulmonary complication which can adversely affect the outcome Among the 0.5 million cardio vascular and thoracic surgery done in India one of the most worrisome complication is decline in pulmonary function. Such complications can be avoided with the administration of simple measures like deep breathing exercise along with incentive spirometry which can reduce the occurrence of pulmonary complications as well as improve the respiratory status of the patient³. Urell Cand et al (2007) conducted study at Denmark which tells that in addition to early mobilization, a variety of breathing exercises are used to prevent postoperative pulmonary complications after cardiac surgery.

II. OBJECTIVES

- To assess the respiratory status of patients who have undergone cardio thoracic and vascular surgery during pretest.
- To assess the effectiveness of deep breathing exercise with incentive spirometer on the respiratory status of patients who have undergone cardio thoracic and vascular surgery during post test.
- To find out the association between effectiveness of deep breathing exercise and incentive spirometer on respiratory status of patients who have undergone cardiothoracic and vascular Surgery and selected demographic variables.

III. RESEARCH METHODOLOGY

Quantitative Research approach was used & the research design for this study was Quasi experimental one-group pre-test and post-test design. The study was conducted in Cardio Thoracic and Vascular surgery wards of Bharathiraja multi-speciality hospital and Global hospital, Chennai. The target population of the present study was patients who have undergone for cardio thoracic and vascular surgery. The samples of the study were patients who have undergone for Cardio Thoracic and Vascular Surgery at Bharathiraja multi-speciality hospital and Global hospital, Chennai. 60 Sample were selected by stratified random sampling technique. The tool for data collection included Demographic variables & Assessment of respiratory status using Respiratory Rate, Modified Borg Dyspnea Scale, Peak Flow Meter and Pulseoxymeter.

PART B: Assessment of respiratory status using Respiratory Rate, Modified Borg Dyspnea Scale, Peak Flow Meter and Pulseoxymeter

A. Respiratory Rate

- <12 breaths/minute-bradypnea
- 12-22 breaths/minute-normal
- >22 breaths/minute- tachypnea

B. Modified Borg Dyspnea Scale

- Grade I- slight breathlessness
- Grade II-moderate breathlessness
- Grade III-severe breathlessness
- Grade IV-maximum breathlessness

C. Peak Flow Meter

- 81-100%- free of symptoms
- 51-80%- caution
- <50%- danger

D. Pulse Oximeter

- 91-100% oxygen saturation- normal
- 81-90% oxygen saturation-desaturated
- <80% oxygen saturation-hypoxic

IV. RESULT

The mean difference was 0.60 between pretest mean score (1.63) and post test mean score (1.03). The table shows that there was decrease in standard deviation values from protest to post test. The obtained paired 't' value was 6.595 and P-value was 0.000*** It was highly significant at p<0.001 level. It was inferred that deep breathing exercise with incentive spirometer is effective in improving the respiratory status of the patients who have under gone cardio thoracic and vascular surgery.

Group	Mean	Mean difference	N	SD	't' value (df)	P value
Pre test	1.63	0.60	30	0.490	6.595 (29)	0.000***
Post test	1.03		30	0.183		

***Highly significant at p<0.001

Table 1

V. DISCUSSION

The study finding showed that mean difference was 0.60 between pretest! mean score (1.63) and post test mean score (1.03). The table shows that there was decrease in standard deviation values from pretest to post test.

The obtained paired 't' value was 6.595 and P-value was 0.000*** It was highly significant at p<0.001 level. It was inferred that deep breathing exercise with incentive spirometer is effective in improving the respiratory status of the patients who have under gone cardio thoracic and vascular surgery.

With regard to the effectiveness odeep breathing exercise with incentivespirometer on respiratory status of patients who have undergone cardio thoracic and vascular surgery, the result shows that deep breathing exercise with incentive spirometerwas highly effective among patients who have undergone cardio thoracic and vascular surgery. The obtained P-value 0.000 was H01 was rejected.

Regarding the association between the effectiveness of deep breathing exercise with incentive spirometer on the respiratory status of patients who have undergone cardio thoracic and vascular surgery and demographic variables, the result revealed that there was no significant association. Hence H02 was rejected.

VI. CONCLUSION

The respiratory complications are the major post-operative complications which reduce the projected outcome of most of the cardio thoracic and vascular surgeries. This study reveals that deep breathing exercise along with incentive spirometer can improve the respiratory status of the patients who have undergone cardio thoracic vascular surgery to a great extent. Many of the respiratory complications can be avoided with proper respiratory management. With little effort it can be implemented on all the post operative patients for better respiratory status and for the prevention of respiratory complications.

REFERENCES

- [1]. Black M J, Hawks. Medical-Surgical Nursing: Clinical management for positive outcomes.7th ed. New Delhi: Elsevier; 2004.
- [2]. Boon M. Davidson. Principles and Practice of Medicine. 20th ed. Philadelphia: FA Davis Company;2006.
- [3]. Burns Nancy Understanding Nursing Research. 3rd ed. London: WB Saunders Company; 1999.
- [4]. Burns N & Grove SK. The practice of Nursing Research, Conduct, Critique, and Utilization .8th edition. Missouri:Elsevier; 2005.
- [5]. Glenora Barbara Kozier. Fundamentals of Nursing.7th ed. New Delhi: Pearson Education; 2004.
- [6]. Kumar V, Abbas AK., Fausto N. Robbins and Cotran Pathologic basis of disease. 7th ed. New Delhi: Elsevier; 2004
- [7]. Andrew "evaluate the prevention of respiratory complications by comparing a global policy of incentive spirometer with a regimen consisting of deep breathing exercises for low risk patients and incentive spirometer plus physiotherapy for high risk patients