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Effectiveness of Post- Operative Respiratory Exercise in Preventing Post-Operative Respiratory Complication among Patients Undergoing Major Surgeries.

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Abstract: ***The post-operative Exercise is mainly needed for major surgeries because, in major surgeries. The Anaesthesia will be powerful and it can lead to complications. By this study identified and assessed the effect of Respiratory exercises and the demographic variables are associated with the respiratory exercises. Quantitative, experimental research design was used to assess the effectiveness of post-operative respiratory exercises. The study was conducted among patients admitted in male & female surgical wards in Mahatma Gandhi Medical College & Hospital, Puducherry. The purposive sampling technique was used to select the sample and the data collected through structured questionnaire. The major findings shown, that 11(55%) patients had moderate effectiveness. 9(45%) patients had good effectiveness and 10 patients had missing effectiveness.***

Keywords: Respiratory Exercises, Major surgeries, Post-operative period, complications, effectiveness

1. Introduction

Post - operative pulmonary complications are defined as pulmonary or respiratory abnormalities that produce identifiable disease or dysfunction that is clinically significant and adversely effects the clinical course of the patients. Such complications include pneumonia, respiratory failure, atelectasis, and exacerbation of persisting chronic lung disease.

These complications can be prevented by certain postoperative strategies include some of the respiratory exercises such as deep breathing exercises and diaphragmatic breathing exercises. The respiratory complication mainly occurs due to anaesthesia and aspirations of contents to the lungs. The respiratory exercises will regain the normal function of lungs, the intercostal muscles, diaphragm and abdominal muscles.

Many anaesthesiologist hold the view that the neuraxial blockade improve respiratory function after abdominal and thoracic surgery. And also results in pulmonary or respiratory complications. Clinically important respiratory complications not only contribute to increased morbidity and mortality but also they are a major factors in driving up total medical expenditures especially in terms of intensive care unit utilization.

The respiratory complications occurs are an outlet of anaesthesia may be Atelectasis , Brancho pulmonary infections acute respiratory distress etc and these can lead even to the death of the patient. In order to overcome such complications is necessary to identify , teach and implement some of the respiratory exercise mainly purposed lip breathing , deep breathing exercise and diaphragmatic exercise to the patients and to identify the outcome how it got effective in preventing these complications

2. Literature Survey

J.A Windsor &G.I.Hill: Conducted a study in reducing the Post - operative pulmonary complications by deep breathing exercises at Stanford University Medical Centre in 2001. Post- operative patients were selected by random sampling. The results shows that among 50 samples 94% had the moderate effect on reducing the postoperative pulmonary complications by deep breathing exercises.

Jackie A Thomas & john M Mcintosh (2002): Conducted a study on are deep breathing exercises effective in the prevention of Post - operative pulmonary complications after upper abdominal surgery, at Ontario Canada and usesthe method of computerized searches of MEDLINE & the cumulative index of Nursing & Allied Health databases were performed for the year 2000. Deep breathing exercise appear to be moreeffective than no physical therapy intervention in the prevention of Post - operative pulmonary complications.

Ramona L Doyle (1999-2000): Conducted a study to assess the usefulness of deep breathing exercise too increase muscle strength to reduce the pulmonary complications at Saiseikai, Central Hospital, Tokyo, Japan and 50 patients undergoing thoracic surgery taken & measured the maximum expiratory & maximum inspiratory and came to a conclusion that the Post - operative respiratory exercise reduces the pulmonary complications.

3. Problem Statement

A study to assess the effectiveness of post operative respiratory exercise in preventing post operative respiratory complications among patients undergoing major surgeries at MGMC&RI, Puducherry.

4. Objectives of the Study

- To assess the effectiveness of postoperative respiratory exercise among patients undergoing major surgeries.
- To associate the demographic variables with post-operative respiratory exercises

5. Methodology

The researcher obtained permission from concerned authority. The investigator introduced herself to subject and explained the purpose of the study to the subject. Informed written consent was taken from each subject .Experimental design was used. 30 patients admitted in male and female surgical wards in Mahatma Gandhi Medical college and Research Institute hospital were selected by purposive Sampling Method. A structured questionnaire was organized into Section A: socio demographic variables of post operative patients ,Section B: Rating scale and multiple choice questions are made regarding respiratory exercise in preventing post operative respiratory complications . The collected data was analysed by using descriptive statistics and inferential statistics.

6. Results/Discussion

Table 1: Frequency and percentage distribution of daily Performance of Exercise by the postoperative Patients.

S.No	*Daily Exercise Performance*	*Frequency*	*Percentage*
1	Yes	20	66.7%
2	No	10	33.3%

Table 1 Depicts, among 30 postoperative patients 20(66.7%) are doing exercise regularly,10(33.3) does not care about such exercises.

Table 2: Frequency and percentage distribution of time period (duration) taken for performing exercise by the Postoperative patients.

S. No	*Duration of Exercise*	*Frequency*	*Percentage%*
1	10-15 mins	9	30.3
2	15-20 mins	8	26.7
3	20-25 mins	5	16.7
4	30 mins	1	3.3
5	Missing	7	23.3

The table 2 Depicts, that among 30 patients 9(30.3 %) are doing exercise for 10-15 minutes, 8(26.7%) are doing exercises 15-20 minutes 5(16.7%) for 20-25 minutes 1(3.3%) for 30 minutes and 7(23.3%) are missing.

The findings of the study are based on the following objectives;

1. To assess the effectiveness of Post -Operative respiratory exercise among patients undergoing major surgeries.
2. To associate the demographic variables with respiratory exercise.

The study was conducted in males & female surgical wards at MGMC& RI**. The findings denote that;**

- 11(55%)of patients as moderately respiratory effectiveness
- 9(45%) of patients has severe respiratory effectiveness.

The major objective was to associate for demographic variables with respiratory exercises and we came to a conclusion that there is no significant association with the post - operative respiratory exercises to the demographic variables.

The major findings of the study

- With regard to the age6(20%) of patients belong to the age group of <20 Yrs and 12(40%) belongs to the age group of 20-30 Yrs and 12 (40%) belongs to the age group of >30 yrs.
- With regards to the sex among 30 patients 17(56.7%) of them were male and 13(43.3%) were females.
- With regards to the education among the 30 patients 89(26.7%) have primary qualification, 7(23.3%) have high school qualification 3(10.0%) have degree qualification.
- With regards to the occupation among 30 patients 8(26.7%) were private workers, 10(33.3%) government, 8(26.7%) business, and the least are unemployed.
- With regards to the religion among the 30 patients 16(53.3%) were Hindu, 66(20.0%) Muslim, 8(26.7%) Christian and others 0%.
- With regards to the type of the family among 30 patients are from joint family & 18(60%) are from nuclear family
- With regards to the economic status among 330 patients 9(30%) are high level and 4(13%) are low level.
- With regards to the monthly income among 30patients 11(36.7%) have <Rs.3000, 13(43.3%) have Rs.3000 – Rs.5000 and 5(16.7%) have > Rs.5000
- With regard to any family history of any sort of diseases among 30 patients 3(10.0%) have asthma and respiratory infection, 16 (53.3%) have diabetes mellitus, 4(13.3%) have hypertension, 4(13.3%) have other disease/infection and 3(10%) are missing.
- With regard of previous history of surgery patient's underwent among 30 patients 16(53.3%) have previous history of surgery, 14(46.7%) did not have previous history of surgery.
- With regard to the type of surgery patients underwent among 30 patients 11(33.7%) have abdominal, 2(6.7%) have thoracic, 0% have cardiac, 6(20%) have other surgeries and 11(36.7%) are missing.
- With regard to the availability of substanders of patients among 30 patients 12(40%) are husband/wife, 17(56.7%) are father/mother and 1(3.3%) are relatives.
- With regard to the daily performance of exercise among 30 patients 20(66.7%) are doing exercise regularly, 10(33.3%) does not care about such exercises.
- With regard to time when exercise is performed by the patients, 30 patients 10(33.3%) are doing exercise at early morning, 5(16.7%) are doing exercise at evening 2(6.7%) are doing exercise before going to bed, 6(20%) are doling exercise at any other time and 7 (23.3%) are missing.
- With regard to frequency of exercise performed by the patient among 30 patients 9(30%) are do it once, 8(26.7%) do it twice and thrice by 5 (16.7%) and the rest 1 (3.3%) more than thrice.
- With regard to duration among 30 patients 9(30.3%) are doing exercise for10-15 mins, 8 (26.7%) are doing

exercise 15-20 mins 5(16.7%) for 20-25 mins 1(3.3%) for 30 min and 7 (23.3%) are missing.

- With regard for any discomfort while doing exercise among 30 patients 10 (33.3%) felt discomfort, 13(43.3%) did not felt any discomfort and 7(23.3%) are missing.

7. Recommendations

- A similar study can be conducted with a large sample to generalize the findings.
- A comparative study can be done between different hospitals.
- A study can be done to assess the knowledge regarding prevention of respiratory complication.

8. Conclusion

The study shows that the post - operative respiratory exercises have a moderate effectiveness on preventing the post-operative respiratory complications and there is no significant association of these exercises to the selected demographic variables. From our study findings we propose that more awareness regarding prevention of respiratory complication has been created among the patients. Both medical professionals and mass media can help to bring about a big change in this scenario.

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