



Effectiveness of Incentive Spirometry on respiratory status among post operative patients subjected to major abdominal surgery –a true experiment study

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ABSTRACT:

The respiratory system is crucial to every human being. Respiration is an important task, since it costs life. Incentive spirometers also known as sustained maximal inspiration devices, are used to promote deep breathing. This present study analyzed the effectiveness of Incentive Spirometry on respiratory status among post operative patients subjected to major abdominal surgery. The objective of the study was 1.To assess the pre test respiratory status of the post operative patients. 2.To assess the post test respiratory status of the post operative patients. 3. To evaluate the effectiveness of Incentive Spirometry on respiratory status on post operative patients. 3.To find out the association between respiratory status and their demographic variables. True experimental design was adopted & 60 samples were selected by simple random technique at Billroth Hospitals. The level of respiratory status was assessed by using incentive spirometry among abdominal post operative patients at ICU & Post Operative Wards. The major findings of the study shows that, the post test level of respiratory status was maximum of 73.33% had good score and 26.67% had excellent score in experimental group. The study concluded that the incentive spirometry was found to be effective & there was a significant difference in the respiratory status among post operative patients. There was no significant relationship found between the post test respiratory status with selected demographic variables.

KEY WORDS

Respiratory status, incentive spirometry, post operative patients.

INTRODUCTION

Respiration is an important task in human, since it costs life. Deep breathing exercise helps in expanding the lungs and forces better distribution of the air into all sections of the lung. Deep breathing exercises are done several times each day for short periods in order to prevent post operative pulmonary complication. The incentive spirometry intervention increases respiratory parameters which may be more helpful for those patients who need improvement in respiration post operatively. Surgery is a branch of medicine which treats diseases, injuries and deformities by instruments or operative methods. It is mainly curative in function. The term abdominal surgery broadly covers surgical procedures that involve opening the abdomen. Asurgery may produce adverse effect or produce new health problems by itself as a result of complication.

PROBLEM STATEMENT

An experimental study to assess the effectiveness of Incentive Spirometry on respiratory status among post operative patients subjected to major abdominal surgery in Billroth Hospitals, Chennai.

Objectives:

1. To assess the pre test respiratory status of the post operative patients.
2. To assess the post test respiratory status of the post operative patients.
3. To evaluate the effectiveness of Incentive Spirometry on respiratory status on post operative patients.
4. To find out the association between respiratory status and their demographic variables

RESEARCH DESIGN:

A true experimental research design

GROUP	PRE-TEST	INTERVENTION	POST-TEST
EXPERIMENTAL	O1	X	O2
CONTROL	O1	-	O2

RESEARCH APPROACH

Quantitative approach

VARIABLES

Independent variable: Incentive spirometry

Dependent variable: Respiratory status

SETTING OF THE STUDY

The study was conducted in the Intensive Care Unit and Post Operative Wards of Billroth Hospitals, Chennai

POPULATION OF THE STUDY

Patient who underwent major abdominal surgery were the population of the study.

SAMPLING TECHNIQUE

Simple Random Sampling Technique

SAMPLE

Patients who underwent major abdominal surgery under the age group of 20-55 years and who met the inclusion criteria.

SAMPLE SIZE

Sample size consisted of 60 patients who underwent major abdominal surgery.

30 in control and 30 in experimental group

CRITERIA FOR SAMPLE SELECTION

Inclusion criteria:

Patients in the age group of 20 to 55 years.
Patients who underwent major abdominal surgery
Both male and female patients

Exclusion criteria:

Patients with life threatening complication
Patients who can understand Tamil and English and perform breathing exercise

DESCRIPTION OF THE TOOL:

Section-1: Demographic Variables

Deals with the demographic characteristics such as age, gender, monthly income etc.

Section-2: Tools for assessment of Respiratory Status

Deals with the semi structured questionnaire prepared by the investigator to assess the respiratory status after obtaining content validity from departmental and technical experts.

PILOT STUDY:

Pilot study was conducted with 10 % of the samples and feasibility was assessed to proceed with the main study after incorporating corrections from the pilot study

DATA COLLECTION PROCEDURE

The investigators obtained formal permission from the Principal, College of Nursing, Institutional Review Board College of Nursing to conduct the study. And also setting permission obtained from Billroth Hospitals. The period of data collection was four weeks. 60 samples were selected by simple random sampling technique. The purpose of the study was explained and got consent from samples. All ethical principles were followed.

PLAN FOR DATA ANALYSIS

DESCRIPTIVE STATISTICS:

Frequency and percentage distribution will be used to analyze the demographic variables of the clients .

Mean and standard deviation will be used to analyze the pre and post test respiratory status of the post operative patients .

Inferential statistics:

Paired "t" test to compare the pre and post test respiratory status of the post operative patients.

Chi -square test (χ^2) to associate the mean difference of post test respiratory status of the post operative patients with selected demographic variables of samples in study .

MAJOR FINDINGS OF THE STUDY

The pre test level of respiratory status was maximum of 73.33% had average score and 26.67% had poor in experimental group and in control group maximum of 60% had average score and 4% had poor score. In the post test level of respiratory status maximum of 73.33% had good score and 26.67% had excellent score in experimental group and in control group maximum of 53.33% had average score and 46.67% had good score.

TABLE 1: Mean and standard deviation of pre test and post test respiratory status after incentive Spirometry exercise among post operative patients subjected to major abdominal surgery in Billroth Hospital.

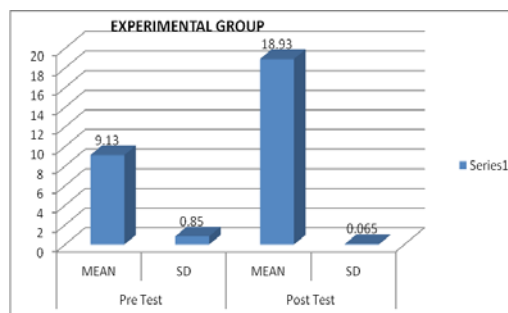
VARIABLES	PRE TEST		POST TEST		PAIRED "t" Test
	MEAN	SD	MEAN	SD	
Experimental Group	9.13	0.85	18.93	0.065	1.799 S
Control Group	9.73	0.94	14.6	1.58	0.600 NS

*P<0.05

S- Significant NS- not significant.

TABLE 1 indicates that. in the pre test, the overall mean of experimental group was 9.13 with the SD of 0.85. In the post test, the overall mean of experimental group was 18.93 with the SD of 0.065. The paired "t" test value is significant at P<0.05 level.

FIGURE 1: Mean and standard deviation of pre-test and post test level of respiratory status among post operative patients subjected to major abdominal surgery at Billroth Hospital, Chennai.



RESULTS:

Analysis revealed the following. In the pre test, the overall mean of respiratory status was 9.73 with the SD of 0.94 in the control group and the overall mean of respiratory status was 9.13 with the SD of 0.85 in the experimental group. In the post test, the overall mean of respiratory status was 14.6 with the SD of 1.58 in the control group and the overall mean of respiratory status was 18.93 with the SD of 0.065 in the experimental group. The paired "t" test value is significant in experimental group at P<0.05 level and non significant in control group at P>0.065 level.

The paired "t" test was highly significant in experimental group at P < 0.05. This shows that the level of respiratory status has significantly improved after incentive spirometry intervention. Thus, there is a significant difference in the level of respiratory status before and after the incentive spirometry exercise among the experimental group of post operative patients. The study also revealed that there is no significant association between the level of respiratory status with their demographic variables like age , gender , educational qualification.

The first objective of the study was to assess the pre test respiratory status of the post operative patients who has undergone major abdominal surgeries :

In the pre test, in terms of respiratory status, maximum of 9 Samples (60%) had an average respiratory status and 6 samples (40%) had a poor respiratory status in the control group. Whereas in the Experimental group, maximum of 11 samples (73.33%) had a average respiratory status and 4 samples (26.67%) had a poor respiratory status.

The second objective of the study was to assess the post test respiratory status of the post operative patients who has undergone major abdominal surgeries:

In the post test, in terms of respiratory status, maximum of 8 Samples (53.33%) had a average respirator status and 7 samples (46.67%) had an good respiratory status in the control group. Whereas in the Experimental group, maximum of 11 samples (73.33%) had a good respiratory status and 4 samples (26.67%) had a excellent respiratory status.

The third objective of the study was to evaluate the effectiveness of Incentive Spirometry on respiratory status on post operative patients:

In the pre test, the overall mean of respiratory status was 9.73 with the SD of 0.94 in the control group and the overall mean of respiratory status was 9.13 with the SD of 0.85 in

the experimental group. In the post test, the overall mean of respiratory status was 14.6 with the SD of 1.58 in the control group and the overall mean of respiratory status was 18.93 with the SD of 0.065 in the experimental group. The paired "t" test value is significant in experimental group at $P < 0.05$ level and non significant in control group at $P > 0.065$ level.

The fourth objective of the study was to find out the association between respiratory status and their demographic variables:

The results shows that there is no significant association between the level of respiratory status with their demographic variables like age , gender , educational qualification and so on.

IMPLICATION:

The implication of the findings has been discussed in relation to Nursing practice ,Nursing education ,Nursing administration and Nursing research .

IMPLICATION FOR NURSING SERVICE

The nurse must develop the self instructional module aimed at imparting knowledge on incentive spirometry among patients who have undergone major abdominal surgery. The nurse should create awareness among patients regarding incentive spirometry to improve the respiratory status and to avoid respiratory complications. The results of the study will help the nurses to enlighten on importance of incentive spirometry.

IMPLICATION FOR NURSING EDUCATION

The nursing student will be able to understand the level of respiratory status before and after the administration of incentive spirometry among post operative patient who had undergone major abdominal surgery from the study findings. It helps them to know that incentive spirometry can drastically improve the respiratory status among post operative patients who had undergone major abdominal surgery. Thus the nursing students will develop necessary knowledge and skill in improving the respiratory status of the post operative patients.

IMPLICATION FOR NURSING ADMINISTRATION.

Nursing administration can formulate policies which will include all nursing staff actively involved in improving the respiratory status especially through nursing care in hospital. The study can create awareness regarding the level of respiratory status and importance of incentive spirometry to improve the respiratory status of post operative patients.

IMPLICATION FOR NURSING RESEARCH:

This study can be used as an access to further studies as one of the aims of nursing research is to expand and broaden the scope on nursing and providing evidence based practice in health settings. It can also be used for future as review of literature and this study can be replicated in several areas.

RECOMMENDATIONS

Based on the findings of the study the investigator proposes the following recommendation.

The study can be replicated on larger samples in different settings to validate and generalize the results.

Using different methods or strategies can carry out a similar study.

A follow up study may be conducted to evaluate the effectiveness of incentive spirometry on post operative patients to improve the respiratory status .

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