



A STUDY TO EVALUATE THE EFFECTIVENESS OF POSTURAL DRAINAGE ON EXPECTORATION OF MUCUS FROM AIRWAY'S AMONG THE LOWER RESPIRATORY TRACT INFECTIOUS (DISEASED) PATIENTS IN NEURO FOUNDATION HOSPITAL AT SALEM.

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ABSTRACT:

A quantitative research approach with pre experimental research design was considered. The study was conducted at neuro foundation hospital in salem. After getting permission from concerned authority the researcher started data collection 40 samples were selected by adopting non probability purposive sampling and obtained written consent from each sample. On day – 1 pre test was conducted and next day give the intervention in neuro foundation hospital in salem. After care followed that doubts were clarified. The post test was conducted on day seven in same participants.

Keywords: Assess, Effectiveness, postural drainage, expectoration of mucus from airway's, lower respiratory tract infectious (diseased) patients.

INTRODUCTION:

The word breathing is derived from an ancient Greek word “Pneuma” which means “air in motion”. An international Association for Study of Lung Disorders defined breathing as an act of inhaling fresh oxygen needed by the body cells and exhaling waste carbon dioxide. It also helps to maintain the body temperature and eliminate the excess water from our body. The respiratory system is dependent on the proper functioning of the circulatory system as the oxygen and waste carbon di oxide are carried in the blood stream. **(Joyce & Jane, 2009)**

The Lower Respiratory tract diseases are the infectious diseases affecting the Lower Respiratory tract (LRT) which includes trachea, bronchi, bronchioles, alveolar ducts and alveolar sacs. Most of the acute and chronic diseases affecting these parts of the lungs induce lots of mucus to be secreted, which gets impacted within the lungs and unable to be expectorated, will lead to structural and physiological damage of the lungs. Among the LRTI's, the most common and important suppurative diseases are tuberculosis,

bronchiectasis, chronic bronchitis, lung abscess, and cystic fibrosis and others.

STATEMENT OF THE PROBLEM:

A study to evaluate the effectiveness of postural drainage on expectoration of mucus from airway's among the lower respiratory tract infectious (diseased) patients in Neuro Foundation hospital at Salem.

OBJECTIVES OF THE STUDY:

1. To assess the pre-test and post- test effects of postural drainage on expectoration of mucus from airways in patients suffering with Lower Respiratory tract diseases.
2. To evaluate effectiveness of postural drainage on expectoration of sputum from airways in Lower Respiratory tract diseased patients.
3. To find out association between postural drainage on expectoration of mucus from airway among Lower Respiratory tract diseased patient with selected demographical variables.

HYPOTHESIS:

H1: There is significant relationship between the postural drainage and expectoration of mucus from airway.

H2: There is significant difference between expectoration of mucus from airway before and after giving postural drainage in lower respiratory tract diseased patients.

REVIEW OF LITERATURE:

SECTION A: Literature Related to Lower Respiratory Tract Infections.

SECTION B: Literature Related to Pharmacological Management of Lower Respiratory Tract infection.

SECTION C: Literature Related To Non-Pharmacological Management Of Lower Respiratory Tract infection.

SECTION D: Literature Related To postural Drainage on Expectoration of Mucus from Airways In Lower Respiratory Tract Infections.

RESEARCH DESIGN:

The research design selected for the present study was pre-experimental with one group pretest and post test design, in which pre-test was conducted, following by postural drainage on expectoration of mucus from airways among the lower respiratory tract infectious patients and then conducted post-test for the same group.

TABLE 1: RESEARCH DESIGN

(n=40)

GROUP	PRE TEST (Day 1)	INTERVENTION (Day 2)	POST TEST (Day 7)
Experimental	O1	X	O2

O1 = Pre test to assess the effectiveness of postural drainage on expectoration of mucus from airway's among the lower respiratory tract infectious (diseased) patients in neuro foundation hospital at salem.

X = postural drainage on expectoration of mucus from airway's among the lower respiratory tract infectious (diseased) patients.

O2 = Post test to assess the effectiveness of postural drainage on expectoration of mucus from airway's among the lower respiratory tract infectious (diseased) patients in neuro foundation hospital at salem.

DEVELOPMENT AND DESCRIPTION THE TOOL:

Part-A:

DEMOGRAPHIC VARIABLES:

Demographic variables included age, sex, educational status, income.

Part-B:

OBSERVATIONS:

I. Change in sputum production:

Sputum production in an optimally hydrated patient with more than 25 ml/day when compared with base line sputum production after postural drainage therapy.

TABLE 2: Scoring card for the sputum collection (applicable in both pre and post test collection of sputum):-

(n=40)

Amount of sputum collected	Points
Up to 0 to 50 ml	1
50 ml to 100 ml	2
100 ml to 150 ml	3
150 ml to 200 ml	4
More than 200 ml	5

II. PEFr (Peak Expiratory flow rate):

The patient was asked to sit and take a deep breath and advised to blow forcefully through the mouth piece of peak flow meter at least for 3 times with an interval of 30 seconds. The best of the three readings was taken and measure was recorded.

TABLE 3: Scoring cord for the PEFR (applicable in both pre and post test collection of sputum):-

(n=40)

Amount of sputum collected	Points
Up to 150 ml	1
150 – 250	2
250 – 350	3
350 – 450	4
More than 450	5

OBSERVATION CHECK LIST FOR THE PATIENT SELECTION:

Various observation check lists have been developed as there is no availability of standard check lists.

These check lists are helpful to observe how correctly the procedure has being conducted, how the patient is following the instructions. Through the observation check list, if the patient can be able to perform the procedure as per the steps, then the values obtained from the procedure can be accepted.

TABLE 4: TABLE SHOWING THE BOTH AVARAGES OF PRE&POST TEST SPUTUM COLLECTION IN THIER ACTUAL VALUES AND THIER SCORES ALONG WITH PAIRED ‘T’ TEST VALUES.

(n=40)

SPUTUM COLLECTION (ml)						
Variable	Pre test (ml)	Post test (ml)	Difference (pre – post) test (ml)	Pre test score	Post test score	Difference (pre – post) test score
MEAN	73.333	241.083	167.75	1.870	4.580	2.450
SD	34.722	62.24	57.153	0.724	0.591	0.594
SE	4.48	8.03	7.37	0.076	0.077	0.007
Pair ‘t’ test value	-----	-----	22.746 highly significant P<0.001	-----	-----	31.59 highly significant P<0.001

Test the significance difference between pre and post sputum collection values and their scores using paired “t” test.

FIG 1: FIGURE SHOWING AVERAGE SPUTUM COLLECTION OF SAMPLES AND SCORES OF THE SAMPLES HAS BEEN REPRESENTED.

(n=40)

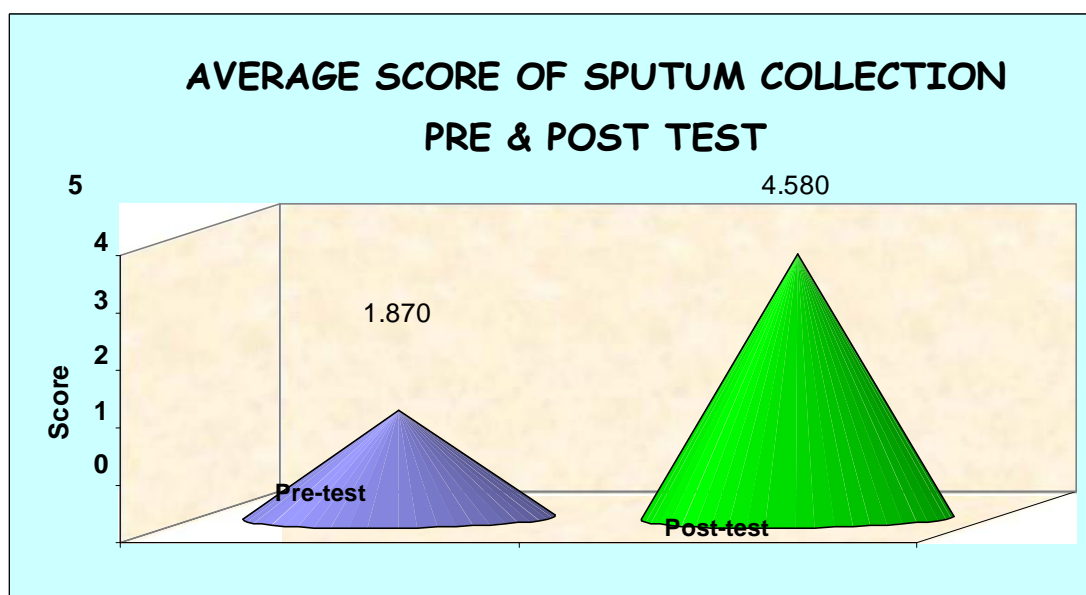


TABLE 5: TABLE SHOWING THE BOTH AVARAGES OF PRE&POST TEST PEFR COLLECTION IN THIER ACTUAL VALUES (LTS/MIN) AND THIER SCORES ALONG WITH PAIRED ‘t’ TEST VALUES.

(n=40)

PEFR COLLECTION (Lt/Min)						
Variable	Pre test (lts / min)	Post test (lts / min)	Difference (pre – post) test (lts / min)	Pre test score	Post test score	Difference (pre – post) test score
MEAN	205.917	436.833	230.917	2.017	4.467	2.450
SD	72.536	69.927	61.778	0.770	0.623	0.594
SE	9.359	9.023	7.971	0.099	0.08	0.077
Pair ‘t’ test value	-----	-----	28.97 highly significant P<0.001	-----	-----	31.82 highly significant P<0.001

Test the significance difference between pre and post PEFR collection values and their scores using paired “t” test.

FIG 2: FIGURE SHOWING AVERAGE PEFR OF SAMPLES AND THEIR ACTUAL VALUES HAVE BEEN REPRESENTED IN LTS/MINUTE.

(n=40)

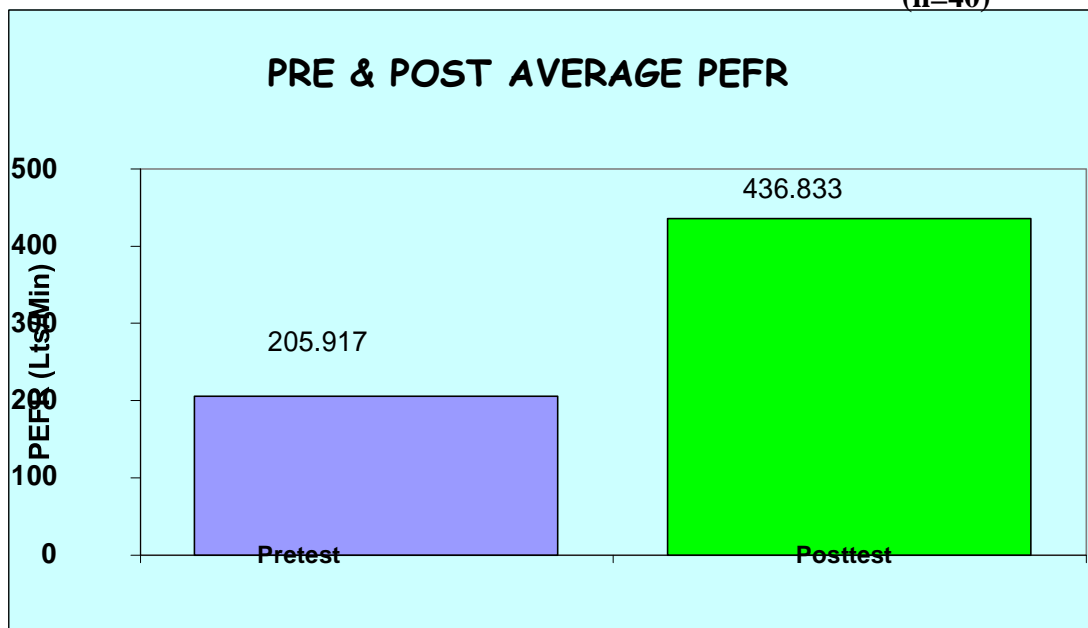


TABLE NO 6: ASSOCIATION BETWEEN SPUTUM SAMPLE SCORINGS AND DEMOGRAPHIC VARIABLES

(n=40)

Scoring		1		2		3		4		5		X2	Significance
		N	%	N	%	N	%	N	%	N	%		
Age	15 – 30 yrs	6	30	6	30	8	40	0	0	0	0	2.5 P>0.05	Not significant at 5% L.O.S
	30 – 45 yrs	8	53	7	47	0	0	0	0	0	0		
	45 – 55 yrs	7	28	13	52	5	20	0	0	0	0		
Sex	Male	12	30	16	40	12	30	0	0	0	0	6.66 P<0.01	significant at 1% L.O.S
	Female	8	40	12	60	0	0	0	0	0	0		
Educational status	Illiterate	12	40	10	33.4	8	26.6	0	0	0	0	7.50 P<0.05	significant at 2.5% L.O.S
	Up to secondary school	5	20	15	60	5	20	0	0	0	0		
	Graduates	2	40	1	20	2	40	0	0	0	0		
In come group	<3000	9	30	13	43	8	27	0	0	0	0	10 P>0.01	significant at 1 % L.O.S
	3000 – 5000	6	30	12	60	2	10	0	0	0	0		
	>5000	5	50	3	30	2	20	0	0	0	0		

ASSOCIATION BETWEEN PRE-TEST SPUTUM SCORES AND DEMOGRAPHICAL VARIABLES:

Regarding Sex, in males, under score 1 is 12 (30%) members, under score 2 is 16(40%) members, under score 3 is 12 (30%)members, Females under score 1 is 8(40%) members, under score 2 is12 (60%) members. Test the significance based on a demographic variable sex using chi-square test. The test statistics chi-square is 6.66.The tab chi-square at 1% l.o.s with 1 d.f is 6.63. There is a significance difference between sexes. $P < 0.01$.

Regarding Educational status, Illiterates under score 1 is 12 (40%) members, under score 2 is 10 (33.4%) members, under score 3 is 8 (26.6%) members. Up to secondary school, under score 1 is 5 (20%) members, under score 2 is15 (60%) members, under score 3 is 5 (20%) members. Graduates under score 1 is 2 (40%) members, under score 2 is 1 (20%) members, under score 3 is 2 (40%) members. Tested the significance based on a demographic variable educational status using chi-square test. Test statistics chi-square is 7.50. The tab chi-square at 2.5% l.o.s with 2 d.f is 7.38. There is a significance difference between educational statuses. $P < 0.01$.

Regarding Income, under Rs <3000 score 1, is 9 (30%) members, under score 2 is 13 (43%) members, under score 3 is 8 (27%) members, and between 3000-5000, under score 1 is 6 (30%) members, under score 2 is12 (60%) members, under score 3 is 2(10%) member and above Rs. >5000 under score 1 is 5 (50%) members, under score 2 is 3 (30%) members, under score 3 is 2(20%) members. Tested the significance based on a demographic variable income status using chi-square test. Test statistics chi-square is 10. The tab chi-square at 1% l.o.s. with 2 d.f is 9.21. There is a significance difference between Income statuses $P < 0.01$.

RESULTS AND DISCUSSION:

The over all mean pre test and post test score on postural drainage paired test 't' value was PERF values $t = 31.82$ which was highly significant at $p < 0.01$ level. The over all mean pre test and post test score on postural drainage paired test 't' value was sputum collection values $t = 31.59$ which was highly significant at $p < 0.01$ level.

CONCLUSION:

The study concluded that the postural drainage had significant effect on expectoration of mucus from airway's among the lower respiratory tract infectious patients in neuro foundation hospital at salem. As by concluding that, the stated research hypothesis was accepted.

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