



# A Study To Assess The Effectiveness Of Respiratory Bundle Package On Biophysiological Parameters Among Patients With Chronic Obstructive Pulmonary Disease [COPD] In Selected Hospital At Cuddalore District

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## ABSTRACT:

**Introduction:** The Chronic respiratory disease is the most common non communicable disease in this society. Chronic Obstructive Pulmonary Disease is the third leading cause of death in worldwide. Respiratory rehabilitations long with medications are reduce the symptoms and improve the quality of life among patients with COPD. **Title:** Evaluate the Effectiveness of Respiratory Bundle Package on Bio physiological Parameters among patients with Chronic Obstructive Pulmonary Disease in a Selected Hospital at Chidambaram, Cuddalore District. **Objectives:** To compare the effectiveness of Respiratory Bundle Package on Bio physiological Parameters in Intervention group with Control group among patients with Chronic Obstructive Pulmonary Disease. **Hypothesis: H1-1** There is a significant difference in the post test level of Bio physiological Parameters among patients in Intervention and Control group. **Methodology:** Quasi experimental (pretest and posttest control group) research design was used. 40 subjects were selected by Non probability purposive sampling technique. The Intervention given for 10-15minutes and 3 times a day each to the counts of 10 for 4 weeks. **Results:** There was statistically significant improvement in Bio physiological Parameters Confirmed by Independent 't' test ( $t= 2.72$ ,  $p=0.01$ ). **Conclusion:** There was significant improvement in Bio physiological Parameters after the intervention at  $P<0.001$  showed that the intervention was effective.

**Key words:** COPD, Effectiveness, Respiratory Bundle Package, Bio physiological parameters.

**INTRODUCTION:**

The primary purpose of respiratory system is gas exchange which involves the transfer of oxygen and carbon dioxide between the atmosphere and blood. The exchange process occurs in the alveolar region of the lungs. Respiratory system enables us to produce energy by supply the body with a continuous supply of oxygen. It is also responsible for eliminating carbon dioxide, a by-product of cell metabolism, whereas oxygen is necessary for human respiration. Breathing gets altered by infectious & non-infectious diseases, age, hereditary, unhealthy diet, physical inactivity, smoking, indoor and outdoor pollution, allergens, and occupational agents. Chronic Obstructive Pulmonary Disease (COPD) most commonly occurs in 45to60 years of age group of people due to persistent inhalation of noxious particles, commonly from cigarette smoking. Chronic Obstructive Pulmonary Disease is the third leading cause of death worldwide. Health is a Fundamental Human right and health is central to the concept of quality of life. It is the responsibility of every individual to lead good quality of life.

**STATEMENT OF THE PROBLEM:**

A Study to Assess the Effectiveness of Respiratory Bundle Package on Bio physiological Parameters among patients with Chronic Obstructive Pulmonary Disease in Selected Hospital at Cuddalore District.

**OBJECTIVES:**

To compare the effectiveness of Respiratory Bundle Package on Bio physiological Parameters in Intervention group with Control group among patients with Chronic Obstructive Pulmonary Disease.

**HYPOTHESIS:**

**H1-1** There is a significant difference in the post test level of Bio physiological Parameters among patients in Intervention and Control group.

**RESEARCH METHODOLOGY:****RESEARCH APPROACH: QUANTITATIVE RESEARCH****RESEARCH DESIGN : QUASI EXPERIMENTAL DESIGN****SETTING OF THE STUDY****GOVERNMENT CUDDALORE MEDICAL COLLEGE AND HOSPITAL, CHIDAMBARAM****TARGET POPULATION**

Patient who is diagnosed as Chronic Obstructive Pulmonary Disease in Stage I&amp;II

**ACCESSIBLE POPULATION**

Patient who is diagnosed as Chronic Obstructive Pulmonary Disease in Stage I &amp; II and taking treatment in Government Cuddalore Medical College and Hospital, Chidambaram.

**SAMPLE SIZE : 40****SAMPLING TECHNIQUE**

Non probability purposive sampling technique

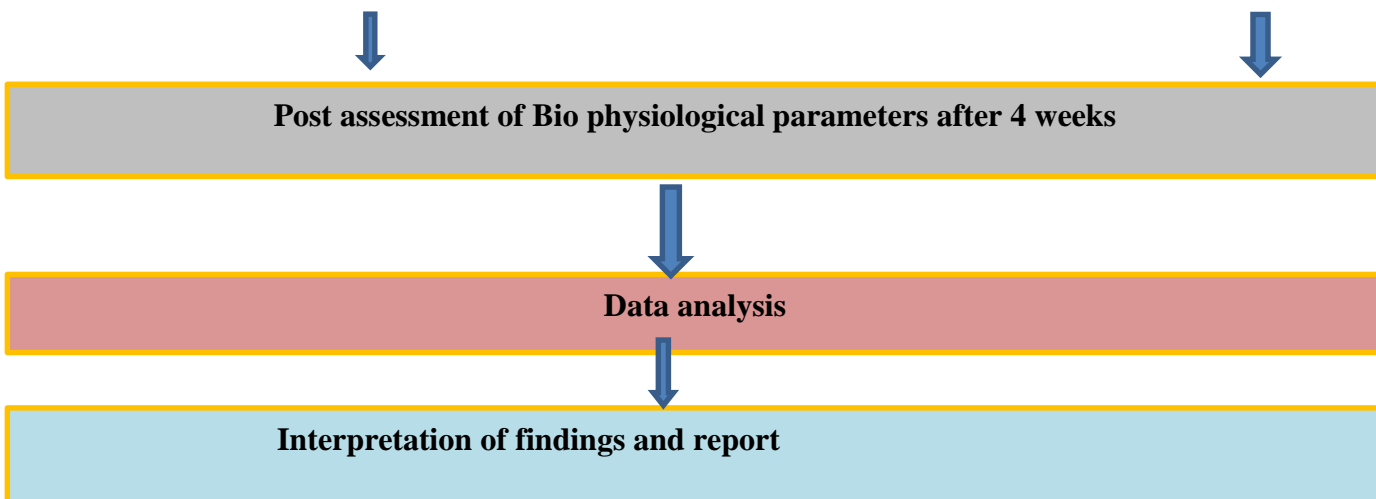
**INTERVENTION GROUP:20****CONTROL GROUP 20****Pre test –first visit****Data collection instrument**

- Socio demographic variables
- Clinical variables
- Medical Research Council Dyspnea Scale (Standard scale )
- Bio physiological parameters assessment scale

**Respiratory Bundle Package for 4 weeks for 3 times a day  
(6am,12noon. 4pm) for 5-10 minutes for 10 counts.**

**(Incentive spirometry, breathing exercise, includes deep breathing  
exercise and pursed lip breathing exercise)**

**Routine care**



### CRITERIA FOR SAMPLE SELECTION:

#### Inclusion criteria:

#### Patients with Chronic Obstructive Pulmonary Disease stage- I, stage - II

- On regular treatment.
- Between the age group of 31 yrs to 50 yrs.
- Available at the time of data collection.
- Willing to participate in the research study.
- Who can study in Tamil or English.
- With co-morbid DM, HTN, in stable condition.
- Both sex (male and female)

#### Exclusion criteria:

#### Patients with Chronic Obstructive Pulmonary Disease stage- I, stage - II

- With unstable and uncontrolled co-morbid condition. (DM, HTN, BA, CKD etc.)
- Performing regular breathing exercise, yoga.
- Participated pulmonary rehabilitation programme within 6 months.
- Psychological illness and pregnancy

**DESCRIPTION OF TOOL:**

Section	Tool	No of items	Method of data collection	Period of data collection	Type of tool.
I	Socio demographic Variables	14	Self-administered questionnaire	First visit	Developed By researcher
II	Clinical variables	9	Self-administered questionnaire	First visit	Developed by researcher
III	MRC Dyspnea Scale	5	Self-administered questionnaire	First visit	Standard scale
IV	Bio physiological Parameters assessment scale	12	Physical examination by researcher	First visit & II Visit at the end of 4 weeks	Developed by researcher

**SECTION: III MEDICAL RESEARCH COUNCIL DYSPNEA SCALE- Medical Research Council Committee 1986**

GRADE	DESCRIPTION	MRC SEVERITY GROUPING
1 .	Breathless with strenuous exercise.	Mild (1)
2.	Short of breath when hurrying on the level or walking up a stair case.	Moderate(2 & 3)
3.	Walk slower than people of the same age on the level of stops for the breath while walking at own pace on the level.	
4.	Stop for breath after walking 100 m	Severe (4 & 5)
5.	Too breathless to leave the house or breathless When dressing or undressing.	

**SECTION-IV BIOPHYSIOLOGICAL PARAMETERS ASSESSMENT SCALE**

s.no	Features observed	Score		
		Score – 0	Score –1	Score - 2
1	Respiratory Rate	25 to 30/m	31to 40/m	> 40/min
2	Pulse rate	80 to 100/m	101 to120/m	> 120/min
3	Heart rate	60-100/m	101-120/m	>120/min
4	Nasal flaring	Nil	Unilateral	Bilateral
5	Body temperature	37.c	37.c to 39.c	>39.c
6	Chest retraction	None	Just Visible	Marked
7	Use of accessory Muscles	None	Moderate	Maximum
8	Cough	None	Non productive	Productive
9	Air Entry	Bilateral	Unilateral	Diminished Bilaterally
10	Breathing sound	Normal	Occasional	Crepitating
11	Dyspnea	Nil	In activity	At rest
12	O2 Saturation	98% to 100%	95% to 97 %	<95%

**SCORING INTERPRETATION:-**

- 0 - Normal breathing pattern.
- 1 – 8 - Mild respiratory problem.
- 9– 16 - Moderate respiratory problem.
- 17 – 24 - Severe respiratory problem.

**PROCEDURE FOR DATA COLLECTION:-**

Through Probability purposive - sampling technique 20 patients were selected for intervention group and 20 patients were selected for control group. Demographic and clinical variables were collected by using self-administered questionnaire and their pre-test, post-test Bio physiological parameters were assessed by Medical Research Council Dyspnea Scale and Bio physiological Parameters assessment scale. In Intervention group researcher used Respiratory Bundle Package and for Control group received routine hospital treatment. The collected data were analysed based on the above mentioned objectives using the descriptive and inferential statistics.

**RESULTS AND DISCUSSION:****Table.1: Distribution of level of dyspnea among patients with COPD in Intervention and Control group at pretest (N=40)**

Level of Dyspnea	Intervention group		Control group	
	No.	%	No.	%
Mild	10	50%	10	50%
Moderate	10	50%	10	50%
Severe	-	-	-	-

Distribution of level of dyspnea among patients with COPD in Intervention and Control group at pretest, 10(50%) of them in Intervention group, 10 (50%) of them in Control group had mild level of dyspnea and 10 (50%) of them in Intervention group, 10(50%) of them in Control group had moderate level of dyspnea and none of them in both groups had severe level of dyspnea.

**Table.2: Comparison of Mean and SD of Bio physiological parameters score among patients with COPD in Intervention and Control group at post test**

N=40

Group	Mean	SD	Independent t-test value	d.f.	P-value
Intervention group	4.00	5.10	2.72	38	P=0.01**(S)
Control group	8.05	4.23	-	-	

P<0.01 \*\*(S)- Highly significant.

The comparison of Mean and SD of Bio physiological parameters score among patients with COPD in Intervention and Control group at post test, for the Intervention group the mean score was 4.00 with SD of 5.10, whereas control group the mean score was 8.05 with SD of 4.23. The independent t-test was applied to compare the two mean values. The significant 'p' values (p<0.01) indicated that there was significant improvement in Bio physiological Parameters after the Respiratory Bundle Package. This proved the Respiratory Bundle Package was effective among patients with COPD. Thus the hypothesis 1 was accepted.

**CONCLUSION:**

The study concludes that the Respiratory Bundle Package had significant effect on improving Bio physiological Parameters in Intervention group than the Control group.

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