

A study to assess the Effectiveness of an Interventional Package on Pulmonary Functional Parameters among patients with Chronic Obstructive Pulmonary Disease admitted in CSI Mission Hospital at Kanyakumari district Tamil Nadu India

M.Anitha^[1], T.V. Rema^[2], A. Achsha Shiny^[3], Dr. Anilet Anandhy^[4]

^[1] Assistant Professor, Bethlahem College of Nursing,

^[2] Professor, Bethlahem College of Nursing,

^[3] Professor, Joy University, ^[4] Professor, Joy University

Abstract: Chronic Obstructive Pulmonary Disease is very common in general population. It is a slowly progressing disease involving the airways or pulmonary parenchyma resulting in airflow obstruction. The most common factor leading to COPD is cigarette smoking, exposure to occupational dust and chemicals. The symptom of COPD ranges from dyspnoea, chronic cough with or without sputum production. An Interventional package containing education and deep breathing exercises improved the health status and increased the exercise tolerance of patients with COPD.

Methodology: The research design adopted was quasi experimental with two group pre test post test design. Purposive sampling technique was followed to obtain a sample of 60 COPD patients (30 COPD patients in experimental groups and 30 COPD patients in control groups) Pre test and post test assessment was done by using pulmonary functional parameters. An Interventional package containing educational phase was provided for 15-20 minutes daily and deep breathing exercises were administered 2 cycles per day for 7 days to the experimental group whereas control group was not given any intervention. Post test was conducted after intervention both experimental and control group.

Result: Breath holding time Posttest $t=1.16, DF=56, p=0.250$. Data were presented as absolute numbers and percentages. Values of continuous variables are expressed as a mean \pm standard deviation (SD) and the values were compared using two sample T test. Categorical variables are represented as frequency distributions and single percentages. Categorical variables were compared by chi-square test and Fisher's exact test Where appropriate. Results were considered statistically significant at a level of P less than 0.05.

Conclusion: The findings of the study enlightening the fact that an interventional package can be used as a cost effective nursing intervention in reducing the dyspnoea. The results showed that there is an association.

Keywords: Interventional package, Pulmonary functional parameters, COPD patients.

INTRODUCTION

Chronic Obstructive pulmonary Disease is a progressive respiratory disease of which air flow obstruction occurs involving air ways and pulmonary parenchyma. It is a major cause of ill health globally. Chronic Obstructive pulmonary Disease is found to be one of the most distressful conditions badly affecting human life. Chronic Obstructive pulmonary Disease is the fourth leading cause of death in the United States. Chronic Obstructive pulmonary Disease is a disease characterized by airflow limitation that is not fully reversible. The airflow limitation is usually progressive and associated with an abnormal inflammatory response of the lung to noxious particles or gases, resulting in narrowing of airways, hyper secretion of mucus, and changes in the pulmonary vasculature. Other diseases such as cystic fibrosis, bronchiectasis, and asthma that were previously classified as types of Chronic Obstructive pulmonary Disease are now classified as chronic pulmonary disorders, although symptoms may overlap with those of Chronic Obstructive pulmonary Disease

The study's aims and goals

1. To assess the pulmonary functional parameters among patients in experimental and control group before implementing the interventional package.
2. To assess the pulmonary functional parameters among patients in and Experimental control group after implementing the interventional package.

3. To determine the effectiveness of an interventional package on pulmonary functional parameters.
4. To find out the association between the pulmonary functional parameters and the selected demographic variables of patients with Chronic Obstructive Pulmonary Disease.

conducted after intervention both experimental and control group.

Research tool and technique

Part A: Demographic variables such as age, gender, educational status, occupation, income, marital status, type of family, house, history of smoking and family history.

Part B: This section deals with Modified Dyspnoea Borg scale which is used to assess the level of dyspnoea among COPD patients. Total score is 8.

Part C: Pre- test was conducted to both experimental group and control group by using these assessment tools. Educational phase was provided for 15 – 20 minutes daily and deep breathing exercises were administered 2 cycles per day for 7 days for the experimental group whereas control group was not given any intervention. Post test was conducted after intervention both experimental and control group on day 7

METHODOLOGY

The research design adopted was quasi experimental with two group pre test post test design. Purposive sampling technique was followed to obtain a sample of 60 COPD patients (30 COPD patients in experimental groups and 30 COPD patients in control groups) Pre test and post test assessment was done by using pulmonary functional parameters. An Interventional package containing educational phase was provided for 15-20 minutes daily and deep breathing exercises were administered 2 cycles per day for 7 days to the experimental group whereas control group was not given any intervention. Post test was

Distribution of Selected Demographic Variables

N = 30

SL.N O	DEMOGRAPHIC VARIABLES	Experimental group (n=30)		Control group (n=30)		P value
		f	%	f	%	
1	Age					0.000
	34 – 45 Years	10	33.3	1	3.3	
	46 – 55 Years	14	46.7	4	13.3	
	56 – 65 Years	6	20.0	16	53.3	
	66 – 75 Years	0	0.00	9	30.0	
2	Sex	11	36.67	14	46.67	0.432
	Female	19	63.33	16	53.33	
	Male					
3	Educational Status	6	20.00	6	20.00	0.068
	SSLC	8	26.67	12	40.00	
	Middle	6	20.0	10	33.33	
	Primary	10	33.33	2	6.67	
	Higher secondary					
4	Occupation	14	46.67	16	53.33	0.606
	Non-Sedentary	16	53.33	14	46.67	
5	Income	0	0.00	0	0.00	0.03
	Below 500	20	66.7	12	40.0	
	8000 15000	10	33.3	18	60.0	
6	Marital status	30	100.00	30	100.00	-
	Married					

7	Type of family					
	Joint family	10	33.33	11	36.67	0.787
	Nuclear family	20	66.67	19	63.33	
8	Type of house					0.194
	Concrete	4	13.3	3	10.00	
	Pucca	15	50.00	10	33.33	
	Thatched	4	13.33	2	6.67	
	Tiled	7	23.33	15	50.00	
9	History of Smoking					0.197
	No	8	26.6773	4	13.33	
	Yes	22	.33	26	86.67	
10	Active Smoker					0.297
	No	11	36.67	15	50.00	
	Yes	19	63.33	15	50.00	
11	Passive Smoker					-
	a) No	30	100.000	30	100.00	
	b) Yes	0	.00	0	0.00	
12	Family history (Allergy)					0.004
	No	9	30.00	20	66.67	
	Yes	21	70.00	10	33.33	
13	Family history (Lung disease)					0.001
	No	25	83.33	12	40.00	
	Yes	5	6.67	18	60.00	
14	Family history (Heart disease)					0.228
	No	25	83.33	28	93.33	
	Yes	5	16.67	2	6.67	

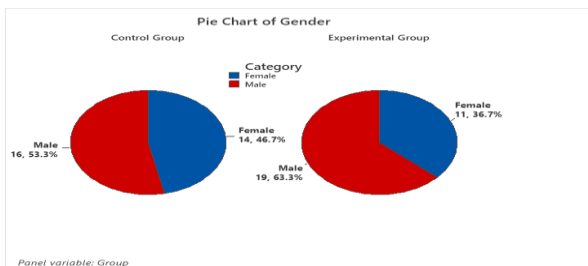


Figure 3 a: Frequency and percentage distribution of COPD among patients according to their gender

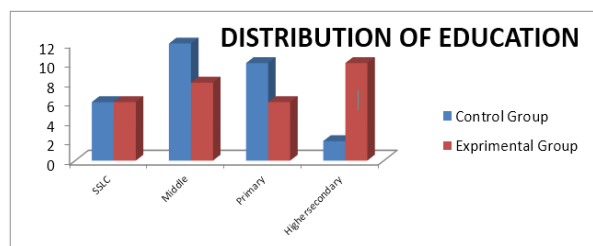


Figure 3c: Frequency and percentage distribution of COPD among patients according to their education

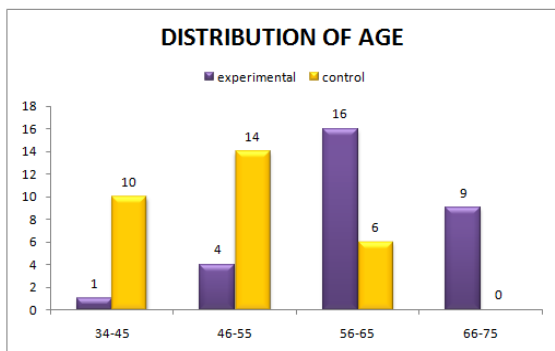


Figure 3b: Frequency and percentage distribution of COPD among patients according to their age group

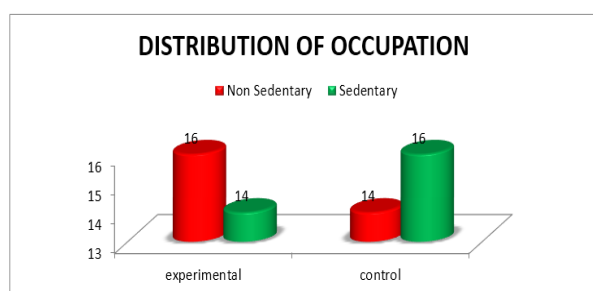


Figure 3d: Frequency and percentage distribution of COPD among patients according to their occupation

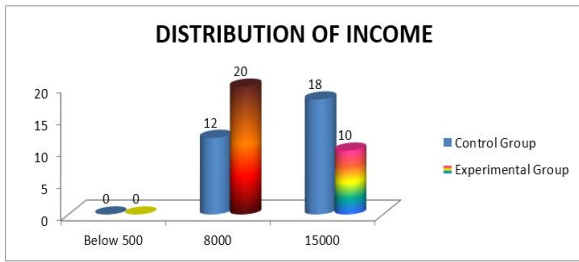


Figure 3 e: Frequency and percentage distribution of COPD among patients according to their income

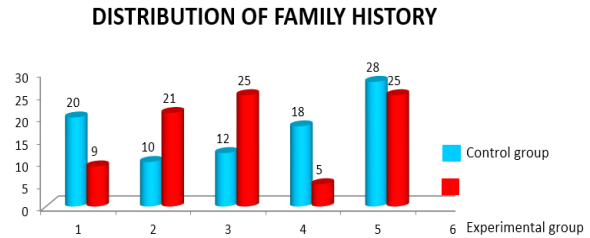


Figure 3g: Frequency and percentage distribution of COPD among patients according to their family history

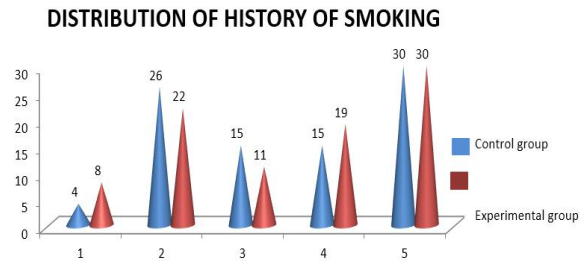


Figure 3f: Frequency and percentage distribution of COPD among patients according to their history of smoking

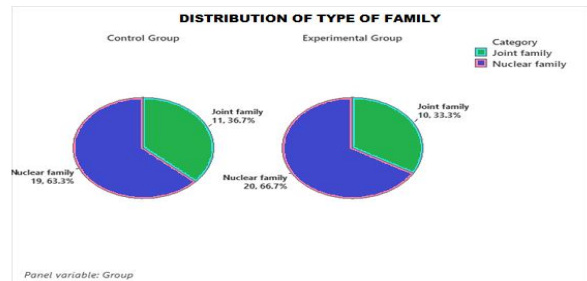


Figure 3 h: Frequency and percentage distribution of COPD among patients according to their type of family

Table: Pre and posttest means of spirometry values between control and experimental group.

Spirometry	Group	Mean	SD	t value	df	P value
Pre-test	Control (n=30)	3.00	3.05	1.69	50	0.097
	Experimental (n=30)	1.87	2.03			
Post -test	Control (n=30)	2.333	0.758	- 1.90	42	0.064
	Experimental (n=30)	2.93	1.55			

The spirometry values were measured pre-test and post-test between the control and experimental groups (table 2). Means of spirometry values were measured between the groups, by two – sample- T test and CI. The means of spirometry values pre-test in control group was 3.00 and in experimental group 1.87 SD in control group 3.05 and experimental 2.03. Spirometry values in post-test in control group was 2.33 and in experimental group it was 2.93 SD of control group 0.758 and of experimental group 1.55. T value of spirometry pre test 1.69 Df = 50 P value 0.097 the posttest T value – 1.90, Df = 42, P value 0.064 (table 2, Figure 9 & 10).

CONCLUSION

The findings of the study enlightening the fact that interventional package can be used as a cost effective nursing intervention in reducing the dyspnoea. The results showed that there is an association.

BIBLIOGRAPHY

- [1] Basavanthappa, B. T. (2006). Nursing Research. 2nd edition. New Delhi: Jaypee Brothers Medical Publishers. Page No: 72 –78.
- [2] Black MJ. Hawks jh. Keen AM. Medical Surgical Nursing clinical management for positive outcomes 9th edition: WB Saunders Company, Philadelphia.
- [3] Brunner and Suddarth (2009).Text Book of Medical and Surgical Nursing. Vol- 7th edition: Published by Wolters Kluwer Pvt.Ltd. Page no. 1235
- [4] Brunner and suddarth’s.Text book of medical surgical nursing,11th edition, Lippincott publishers. Philadelphia
- [5] Lewis. S.M;et .al: (2007) Medical Surgical Nursing, Philadelphia,Mosby company.

- [6] Mahajan B. K. (2010). Methods in Biostatistics. 7th edition. Philadelphia: Jaypee Brothers Medical Publishers. RamakrishnanP. (2005). Biostatistics. 1st edition. Nagercoil: Saras Publications. Page No102 - 107.
- [7] Phipps Cassmeyer (1993). Text Book of Medical and Surgical Nursing. 3rd edition. Mosbey Publication. Page no-675.
- [8] Polit D. F and Hungler, B. P. (1999). Nursing Research Principles and methods. 6th edition. Philadelphia: Lippincott. Page No: 48– 52.