

A Study to Assess the Effect of Planned Teaching on Knowledge and Performance Regarding Breathing Exercises among Patients with Chronic Obstructive Pulmonary Diseases in Selected Hospitals of Guwahati

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Abstract-

BACKGROUND: Ancient yogis were the first to realize the importance of ample oxygen supply to body parts. That was why they perfected the art of effective breathing techniques that tap in maximum oxygen. Breathing exercises are extremely relevant. Our brain craves for oxygen. That is the reason why we feel completely exhausted at the end of the working day. Not only does this lead to frustration but also affects our work quality and productivity. Low immunity is yet another after-effect making them easily prone to various diseases. We all know how to breathe, breathing being the very first thing we do as we come into this world. It might seem foolish even to think about teaching one to breathe properly. But our mode of breathing gets modified and restricted due to various reasons, both physical and environmental. Mental tensions also makes breathing pattern restricted. When confronted with a confused problem, we tend to lean forward with arms drawn together and head bent down. This posture actually reduces the lung capacity and a result, oxygen supply diminishes. Shallow and quick breathing style should also give way to deep and to deep and slow intake of fresh air. It is interesting to note that animals that have slow pace of breathing like the elephant lives the longest. "When you can't breathe, nothing else matters," is the mantra of the American lung Association. Obstructive pulmonary diseases, the most common chronic lung diseases, include diseases characterized by increased resistance to airflow as a result of airway obstruction or airway narrowing. Airway obstruction may result from accumulated secretions, edema and swelling of the inner lumen of airways, bronchospasm, or destruction of lung tissue. The world health organization estimates the chronic obstructive pulmonary diseases, as the single cause of death shares 4th & 5th places with HIV/AIDS (After coronary heart diseases and acute respiratory infections). WHO estimates that in 2000, 2.74 million people died of COPD worldwide. Although smoking is the primary cause of COPD, the WHO estimates that there are 400,000 death per year from exposure to biomass fuels. The patient with COPD develops an increased respiratory rate with a prolonged expiration to compensate for the obstruction to airflow resulting in dyspnea. In addition, the accessory muscles of breathing in the neck and upper part of the chest are used excessively to promote chest wall movement. These muscles are not designed for long-term use, and as a result the patient experiences increased fatigue. Breathing exercises is extremely prominent due to the plain fact it provides increased oxygen supply to our body parts. Oxygen is, by all means, the most important of all nutrients. A person might be able to starve for days, but certainly cannot survive without oxygen. Poor lifestyle reduces the supply of oxygen to our organs, especially the brain. A heart attack is actually the result of lack of enough oxygen due to an acute circulation blockage. If this occurs to brain, the outcome is a major stroke. Oxygen not only purifies the blood stream but also removes toxin particles from the system. The respirations of most people with COPD are shallow, rapid, and inefficient. This type of upper chest breathing can be changed to diaphragmatic breathing with practice. Training in diaphragmatic breathing reduces the respiratory rate, increases alveolar ventilation, and sometimes helps expel as much as possible during expiration. Respiratory functions can be facilitated by encouraging deep breathing exercises and coughing to remove secretions. Breathing exercises are frequently indicated for clients with restricted chest expansion, such as people with COPD or clients recovering from thoracic surgery. A commonly employed breathing exercise is abdominal (diaphragmatic) and pursed-lip breathing. Abdominal (diaphragmatic) breathing permits deep full breathe with little effort. Purse-lip breathing helps the client develop control over breathing. The purse lip create a resistance to the air flowing out of the lungs, thereby prolonging exhalation and preventing client purses the lips as if about to whistle and

breathes out slowly and gently, tightening the abdominal muscles to exhale more effectively. The client usually inhales to a count of 3 and exhales to a count of 3 and exhales to a count of 7. Pursed-lip breathing retraining helps to slow expiration, prevents collapse of small airways, and helps the patient to control the rate and depth of respiration. It also promotes relaxation. This enables the patient to control of dyspnea and feelings. Aim and Objectives: • To assess the knowledge of breathing exercises among patients with chronic obstructive pulmonary diseases before and after planned teaching. • To assess the performance of breathing exercises among patients with chronic obstructive pulmonary diseases after planned teaching. • To compare the knowledge and performance of breathing among the patients with chronic obstructive pulmonary Diseases before and after the planned teaching. • To correlate knowledge and performance with selected Variables such age, education, income, duration of illness.

METHODOLOGY: The research approach used in this study was a quantitative approach. Quasi experimental one group pretest- posttest design was used in the present study.

SIGNIFICANT FINDING: Knowledge level of majority of patient 27 (90%) are having adequate knowledge and only 2 (10%) have modetaely knowledge. The mean score of knowledge is 10.63 with standard deviation of 3.97 Correlation was tested by Pearson's correlation co- efficient. The 'r' value shows a positive correlation with value of 0.608 which clearly depicts that knowledge level increases the performance level.

CONCLUSION: This chapter dealt with presentation of data in tables and figures, interpretation and discussion after the tables. Thus the analysis helped the investigator to gain an insight in to the impact of planned teaching on knowledge and performance regarding breathing exercises among patients with COPD. Interpretation of the statistical findings according to the objective of the study is also discussed. The analysis is done by using descriptive and inferential statistic. Thus after the planned teaching it can be said that it was effective and has positive correlation between knowledge and performance regarding the breathing exercises among patients with chronic obstructive pulmonary diseases.

Keywords: Planned Teaching, Regarding Breathing Exercises, Patients with Chronic Obstructive Pulmonary Diseases.

INTRODUCTION:

"A positive attitude is a powerful force for good, giving life to everything it touches."

"When you can't breathe, nothing else matters," is the mantra of the American lung Association. Obstructive pulmonary diseases, the most common lung diseases, included diseases characterized by increased resistance to airflow as a result of airway obstruction or airway narrowing. Airway obstruction may result from accumulated secretions, edema and swelling of the inner lumen of airway, bronchospasm or destruction of lung tissue. The world health organization estimates that Chronic obstructive pulmonary diseases, as the single cause of death shares 4 th and 5 th places with HIV/ AIDS (after coronary heart diseases , cerebrovascular dieases and acute respiratory infections).WHO estimates that in 2000,2.74 million people died of COPD worldwide. Although smoking is the primary cause of COPD, the WHO estimates that there are 400,000 deaths per year from exposure to biomass fuels. The patient with COPD develops an increased respiratory rate with a prolonged expiration to compensate for the obstruction to airflow resulting in dyspnea. In addition, the accessory muscles of breathing in the neck and upper part of the chest are used excessively to promote chest wall movement. These muscles are not designed for long –term use, and as a result the patient experiences increased fatigue. "When you can't breathe, nothing else matters," is the mantra of the American lung Association. Obstructive pulmonary diseases, the most common lung diseases, included diseases characterized by increased resistance to airflow as a result of airway obstruction or airway narrowing. Airway obstruction may result from accumulated secretions, edema and swelling of the inner lumen of airway, bronchospasm or destruction of lung tissue. The world health organization estimates that Chronic obstructive pulmonary diseases, as the single cause of death shares 4 th and 5 th places with HIV/ AIDS (after coronary heart diseases, cerebrovascular diseases and acute respiratory infections).WHO estimates that in 2000,2.74 million people died of COPD worldwide. Although smoking is the primary cause of COPD, the WHO estimates that there are 400,000 deaths per year from exposure to biomass fuels. The patient with COPD develops an increased respiratory rate with a prolonged expiration to compensate for the obstruction to airflow resulting in dyspnea. In addition, the accessory mascles of breathing in the neck and upper part of the chest are used excessively to promote chest wall movement. These muscles are not designed for long –term use, and as a result the patient experiences increased fatigue.

STATEMENT OF THE PROBLEM:

"A study to assess the effect of planned teaching on knowledge and performance regarding breathing exercises among patients with chronic obstructive pulmonary diseases in selected hospitals at Guwahati."

OBJECTIVES:

- To assess the knowledge of breathing exercises among patients with chronic obstructive pulmonary diseases before and after planned teaching.
- To assess the performance of breathing exercises among patients with chronic obstructive pulmonary diseases after planned teaching.
- To compare the knowledge and performance of breathing Among the patients with chronic obstructive pulmonary Diseases before and after the planned teaching.
- To correlate knowledge and performance with selected Variables such age, education, income, duration of Illness.

RESEARCH METHODOLOGY:

The investigator conducted a study to assess the effect of planned teaching regarding breathing exercises among patients with chronic obstructive pulmonary diseases. Roy's adaptation theory was adopted for the conceptual framework. Quasi experimental design (one group pre-test post-test design) was selected for this study. The tools used for the study were structured questionnaire to assess the knowledge level and observation checklist for assessing skills in performing breathing exercises among patients with COPD. The content validity and reliability of the tools were tested and feasibility and appropriateness of the tool were confirmed by pilot study. Pilot study was conducted for two weeks .The main study was conducted from a sample of 30 patients. Samples were selected by using convenience sampling techniques. Written consent was taken from samples and the pre-test was conducted by using structured questionnaire. Planned teaching was given by the investigator on the breathing exercises among patients with COPD. The investigator applied the descriptive and inferential statistics to analyse the collected data regarding demographic variable and effectiveness of planned teaching as well as to correlate the demographic variable with knowledge and performance.

CRITERIA FOR SAMPLE SELECTION:**INCLUSION CRITERIA**

Patient who were

- 1) Willing to participate in the study.
- 2) Able to read and write Assamese, Hindi, Bengali & English.
- 3) Patients who are diagnosed with chronic obstructive pulmonary disease in selected hospitals of Guwahati.

EXCLUSION CRITERIA:

- 1) Patient who were critically ill
- 2) Patient who are mentally challenged and cannot follow instructions.

DEVELOPMENT AND DESCRIPTION OF THE TOOL

A structured questionnaire was used for data collection. The tool was constructed after extensive review of literature and after consulting Medical and Nursing Experts in the field of Medical-Surgical Nursing and also experts from physiotherapy department.

The instrument consisted of two parts.

PART-I : Demographic variables of the patient

A personal data sheet was used to collect the information on age, gender, religion, educational status, monthly income in rupees, occupation, types of house, fuels used for cooking, smoking history and medical data on diagnosis, duration of illness, associated illness, medication & number of hospitalization.

PART-II :

A structured questionnaire was used to assess knowledge on chronic obstructive pulmonary disease and breathing exercises. The questions were organized under the following headings

1. Meaning of COPD - 4 items
2. Causes of COPD - 6 items
3. Clinical manifestation - 1 item
4. Risk reduction - 1 item
5. Pulmonary rehabilitation - 4 items
6. Meaning and steps of breathing exercises - 9 items

TOTAL - 25 items

SCORING KEY:

The structured questionnaire consisted of 25 questions totally, each question had only one correct response.

For every correct response a score of '1' mark was given and for every incorrect response a score of '0' mark was given. Hence the minimum score was 0 and maximum score was 25.

The level of knowledge was categorized as follows

Adequate - $\geq 75\%$

Moderate - $\geq 51-74\%$

Inadequate - $\leq 50\%$

PART – III :

An observation checklist was used to assess the performance of breathing

Exercises on two aspects i.e, pursed-lip breathing and diaphragmatic breathing. The observation checklist consisted of 6 steps for the pursed-lip breathing and 7 steps for the diaphragmatic breathing.

SCORING KEY:

For every correct step a score of '1' mark was given and for every incorrect step a score 13.

To interpret the level of performance on breathing exercises the scores were converted to percentage and were classified as follows:

Excellent - $> 71\%$

Good - 61-70 %

Fair - 41- 60 %

Poor - $\leq 40\%$

PART – IV:

Planned teaching comprises of video clips, lecture, and demonstration on steps of breathing exercises.

DATA COLLECTION PROCESS:

The period of data collection was from 14.06.10 to 19.06.10 and 12.07.10 to 31.07.10 a brief introduction about self and the purpose of the study was explained to the patient. Informed consent was obtained for their willingness in their study. At first the structured questionnaire was administered to assess the pre-test knowledge on chronic obstructive pulmonary diseases and then the performance of the steps on breathing exercises was observed by using observation checklist. It took around 40-45 minutes for each data collection. After the pre-test data collection, planned teaching was conducted by using lecture method, demonstration and video clips on breathing exercises. The post-test on knowledge and performance of the steps on breathing exercises was conducted after one week using the same structured questionnaire and observation checklist.

ANALYSIS AND INTERPRETATION:

This chapter deals with the statistical analysis and interpretation of the collected data. The data collected from the patients were analysed using descriptive statistical methods like frequency, percentage, mean and standard deviation (SD) and inferential statistics like paired 't' test. The data were presented in tables and illustrated as diagrams. The obtained data were classified into section and interpreted as follows :

Section I : Frequency and percentage distribution of demographic variables.

Section II : Frequency and percentage distribution of pre-test knowledge regarding breathing exercises among patients with chronic obstructive pulmonary diseases.

Section III : Frequency and percentage distribution of post test knowledge regarding breathing exercises among patients with chronic obstructive pulmonary diseases.

Section IV : Frequency and percentage distribution of pre-test performance regarding breathing exercises among patients with chronic obstructive pulmonary diseases.

Section V : Frequency and percentage distribution of post-test performance regarding breathing exercises among patients with chronic obstructive pulmonary diseases.

Section VI : Comparison of knowledge regarding breathing exercises among patients With COPD between pre-test and post-test.

Section VII : Comparison of performance regarding breathing exercises among Patients with COPD between pre-test and post-test.

Section VIII : Correlation between post-test knowledge and performance with selected demographic variables regarding breathing exercises

SECTION- I

TABLE – I

FREQUENCY AND PERCENTAGE DISTRIBUTION OF DEMOGRAPHIC VARIABLES

N = 30

S.NO.	Demographic Variables	Frequency (Numbers)	Percentage
1.	Age in years		
	a. 30-40 yrs.	1	3.33%
	b. 41-50 yrs.	11	13.25%
	c. 51-60 yrs.	12	40%
	d. 61-70 yrs.	6	20%
2.	Gender		
	a. Male	22	73.3%
	b. Female	8	26.6%

Table I shows the distribution of demographic characteristics of the patients. Out of 30 patients, 1 (3.33%) patient belong to 41 -50yrs, 11 (13.25%) patients belongs to 51- 60yrs, 12 (40%) patients belongs to 61-70yrs and 6 (20%) patients belongs above 71yrs. Majority of the patients 22 (73.3%) were male and 8 (26.6%) were female.

FIG .3

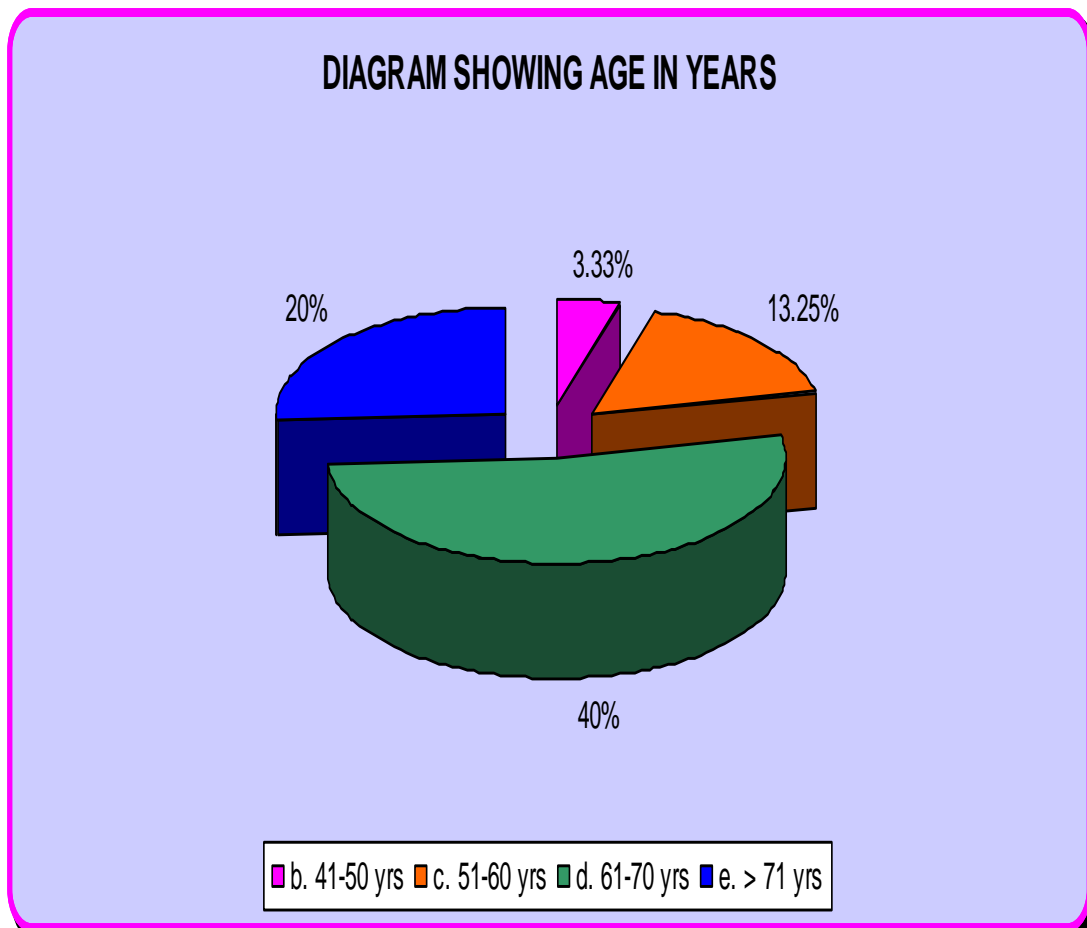


TABLE – I
FREQUENCY AND PERCENTAGE DISTRIBUTION OF DEMOGRAPHIC VARIABLES

SL.NO.	Demographic variables	Frequency (Numbers)	Percentage
1.	Educational status		
	a. Illiterate	12	40%
	b. Primary school	4	13.3%
	c. High school	8	26.6%
	d. Higher secondary	6	20%
	e. Graduate and above		
2.	Monthly income in Rs.		
	a. <5000	12	40%
	b. 5001 – 8000	10	33.3%
	c. 8001 – 10,000	6	20%
	d. > 10,000	2	6%

Most of the patients 12 (40%) educational status is up to primary school. 4 (13.3%) of them had their education up to high school, 8 (26.6%) of them had their education up to higher secondary and 6 (20%) of them were graduate and above. Regarding monthly income most of the patients 12 (40%) had their monthly income below Rs.5000, 10 (33.3%) were between Rs.5001 – 8000, 6 (20%) were between Rs.8001 – 10,000 and 2 (6%) were above Rs.10,

FIG 4

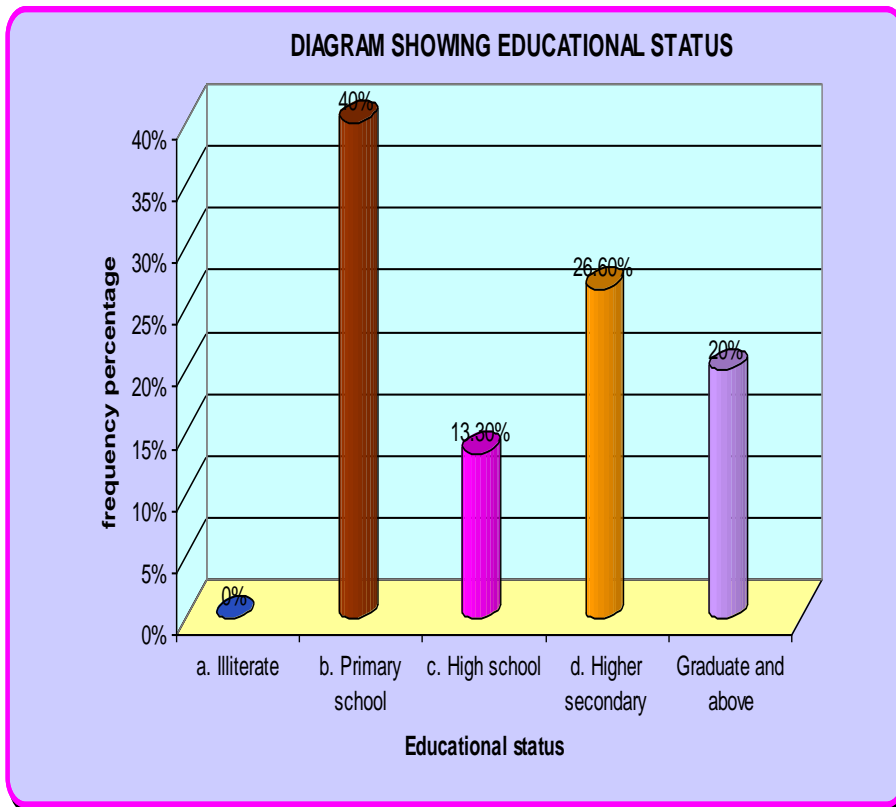


FIG 5

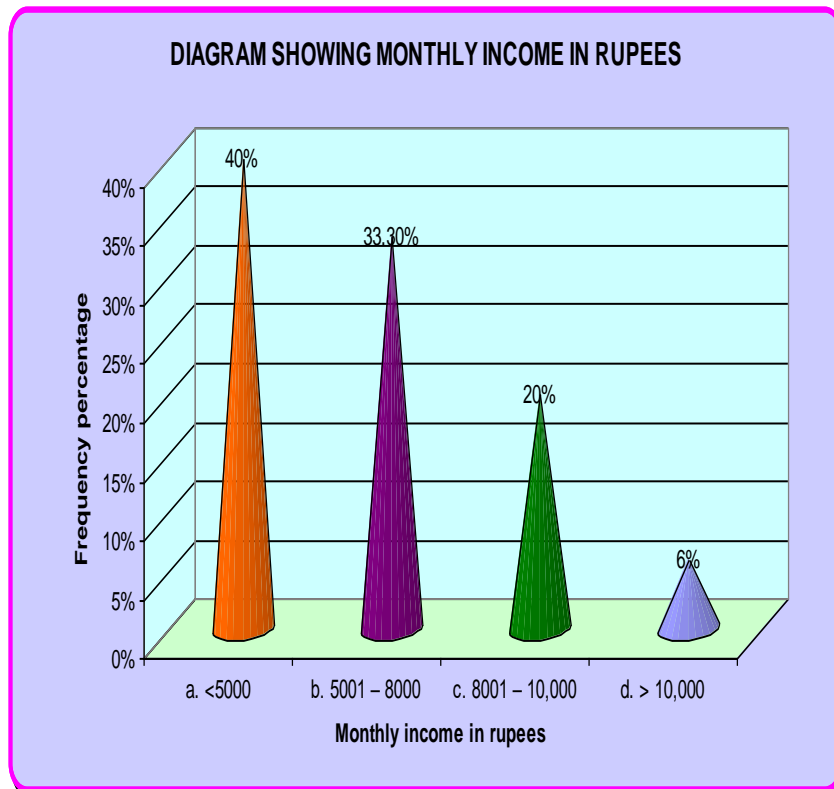


TABLE – II
FREQUENCY AND PERCENTAGE DISTRIBUTION OF DEMOGRAPHIC VARIABLES

SL.NO	Demographic variables	Frequency (Numbers)	percentage
1.	Occupation		
	a. Business	10	33.3%
	b. Housewife	4	13.3%
	c. Professionals (Doctors, Engineers, Lawyers etc.)	4	13.3%
	d. Daily wage earners	4	13.3%
	e. Farmers	2	6.66%
	f. Retired	6	20%
	g. Any others		
2.	Types of house		
	a. kuccha	4	13.3%
	b. pucca	17	56.6%
	c. Mixed	9	30%

Majority of the patients 10 (33.3%) occupation was business, 4 (13.3%) were housewives, 4 (13.3%) were professionals, 4 (13.3%) were daily wage earners, 2 (6.66%) were farmers and 6 (20%) were retired.

Regarding the types of houses, majority of the patients 17 (56.6%) had pucca houses, 4 (13.3%) of them had kuccha houses and 9 (30%) had mixed houses.

TABLE – II
FREQUENCY AND PERCENTAGE DISTRIBUTION OF DEMOGRAPHIC VARIABLES

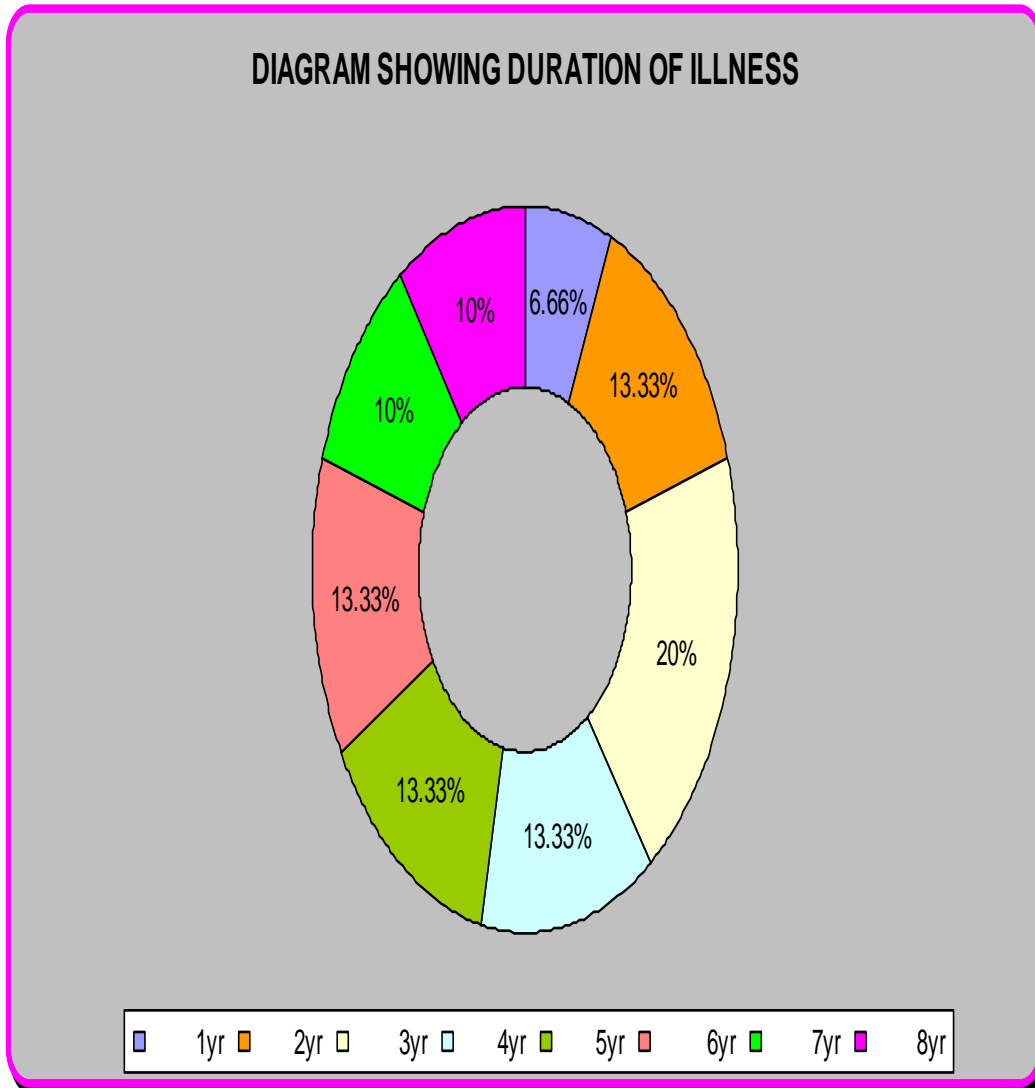
SL.NO	Demographic variables	Frequency (Numbers)	percentage
1.	Fuels used for cooking		
	a. Wood	5	16.6%
	b. Fossils	3	10%
	c. Kerosene	4	13.3%
	d. LPG	18	60%
2.	Smoking History		
	a. Yes	21	70%
	b. No	6	20%
	c. Used to smoke but presently Left.		
	If yes, how long		
	- < 3yrs	3	10%
	- 4-7 yrs.		
	- > 8yrs		
3.	Duration of illness		
	a. 1yr	2	6.66%
	b. 2yr	4	13.33%
	c. 3yr	6	20%
	d. 4yr	4	13.33%
	e. 5yr	4	13.33%
	f. 6yr	4	13.33%
	g. 7yr	3	10%
	h. 8yr	3	10%

The majority of the patients 18 (60%) used LPG as a fuel for cooking, 5 (16.6%) of them used woods as fuel for cooking, 4 (13.3%) of them used kerosene and 3 (10%) of them used fossils for the cooking purpose.

With regards to smoking history, 21(70%) patients had a history of smoking, 6 (20%) of them don't have any history of smoking and 3(10%) of them had a history of smoking less than 3yrs but presently left.

Discussing about the duration of illness, 6 (20%) patients are suffering for 3yrs, 4 (13.33%) of them are suffering for 6yrs, 4 (13.33%) of them are suffering for 5yrs, 4 (13.33%) of them are suffering for 4yrs and 4 (13.33%) of them are suffering for 2yrs. 3 (10%) of them suffers for 8yrs and 3 (10%) suffers for 7yrs.

FIG 6



SECTION - II

TABLE – II

FREQUENCY AND PERCENTAGE DISTRIBUTION OF PRETEST AND POSTTEST KNOWLEDGE ON BREATHING EXERCISES AMONG PATIENTS WITH COPD

Sl. No.	Knowledge Score	Pre-test		Post test	
		Frequency	Percentage	Frequency	Percentage
1	<50%	27	90 %	3	10%
2	50-75%	3	10 %	8	26.7%
3	>75%	0	0 %	19	63.33%

Knowledge score

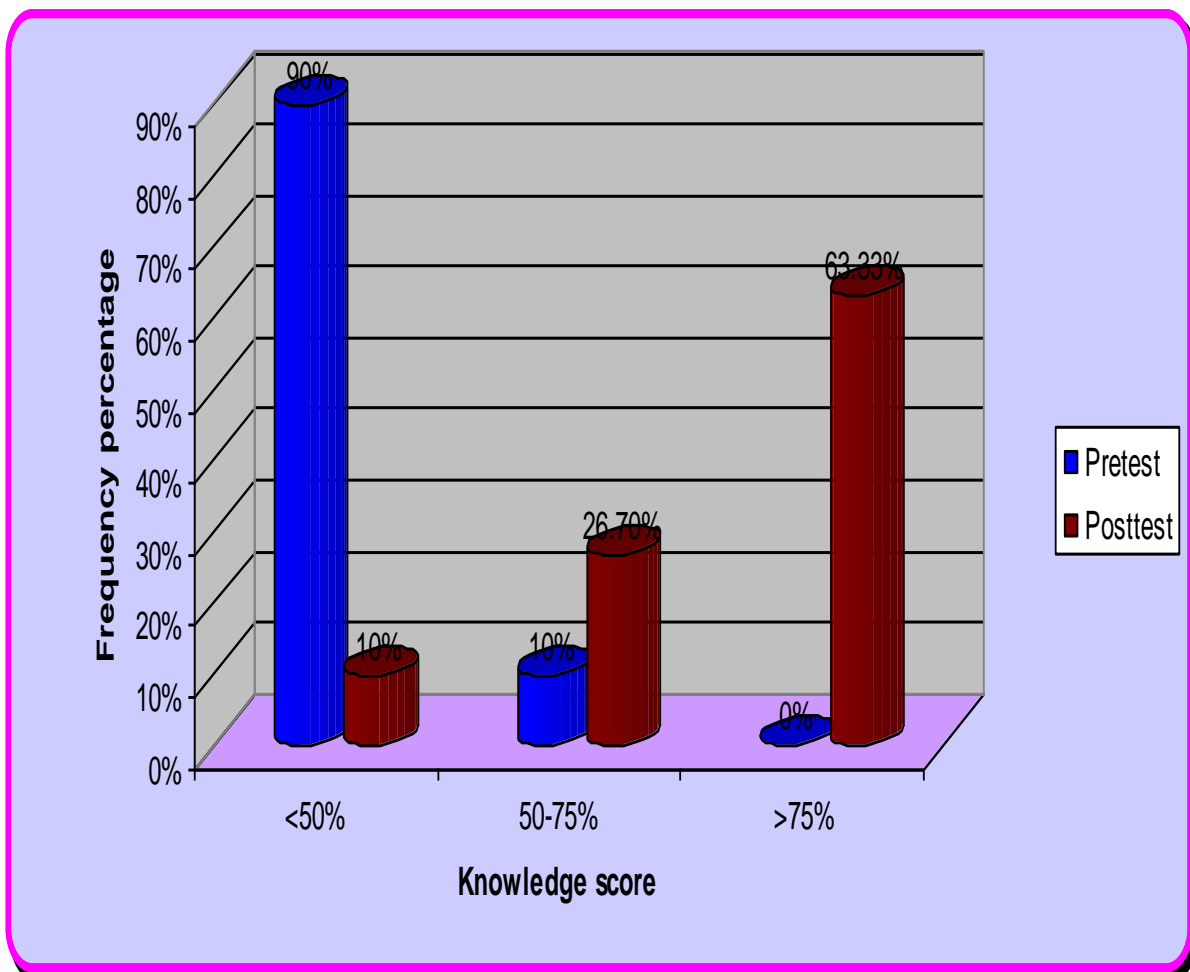
<50% = Inadequate knowledge

50-75% = moderately adequate knowledge

>75% = Adequate knowledge

Table II shows that in pre-test out of 30 patients 27(90 %) had inadequate knowledge, 3 (10 %) had moderately adequate knowledge and none had adequate knowledge. In post-test 3 (10%) had inadequate knowledge, about 8 (26.67%) had moderately adequate knowledge and 19 (63.33%) had adequate knowledge. It shows that the patient those who attended teaching programme improve their knowledge in post-test when compared to pre-test score.

FIG. 7



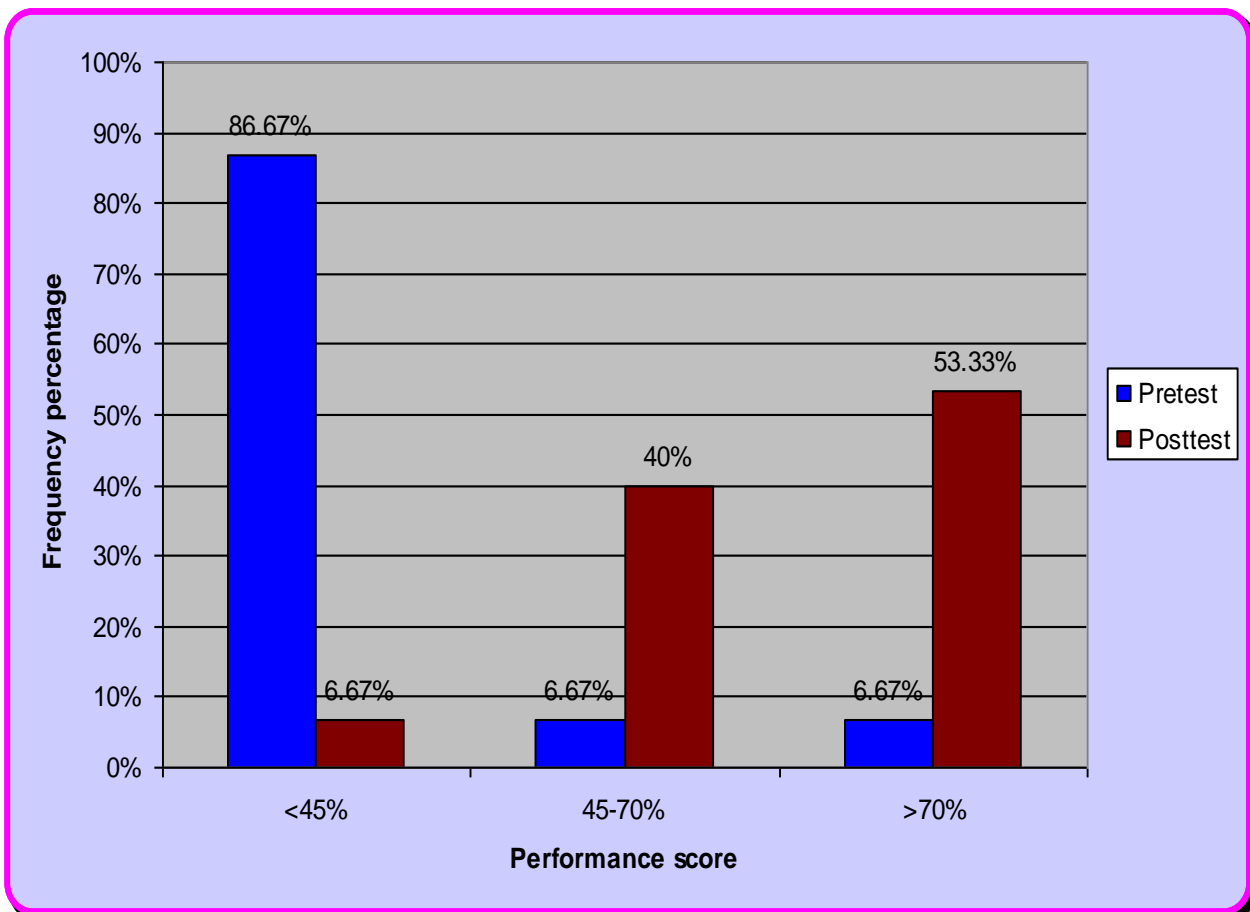
SECTION III
TABLE - III
FREQUENCY AND PERCENTAGE DISTRIBUTION OF
PRETEST AND POSTTEST PERFORMANCE ON BREATHING EXERCISES AMONG PATIENTS WITH
COPD

Sl. No.	Performance Score	Pre-test		Post test	
		Frequency	Percentage	Frequency	Percentage
1	<45%	26	86.67%	2	6.67%
2	45-70%	2	6.67 %	12	40%
3	>71%	2	6.67 %	16	53.33%

Performance score
 <45% = Inadequate performance
 45-70% = moderately adequate performance
 >71% = Adequate knowledge performance

Table III shows that majority of the patient 26 (86.67%) had inadequate performance and 2 (6.67%) had moderately adequate performance and 2 (6.67%) patient had adequate performance. After the planned teaching majority of the patient performed breathing exercises adequately 16 (53.33%) while 12 (40%) of them had moderately adequate performance and only 2 (6.67%) of them performed breathing exercises adequately.

FIG. 8



SECTION IV

TABLE— IV

COMPARISON OF KNOWLEDGE ON BREATHING EXERCISES AMONG THE PATIENT WITH COPD BETWEEN PRETEST AND POSTTEST

Before calculating the 't' value, alternative hypothesis (H1) was stated.

H1: There will be significance difference between means of pre-test knowledge score and post-test knowledge score regarding breathing exercises among the patient with COPD

Variables	Mean	SD	Paired 't' test value
Pre-test	10.63	3.97	11.85
Post-test	21.83	3.32	

$$t(29,0.05) = 1.699$$

Table IV shows that the mean knowledge in pre-test was 10.63 with a standard deviation 3.97. In post-test, the mean score was 21.83 with a standard deviation 3.32.

The improvement was statistically tested by paired 't' test and the result were found to be significant ($t = 11.85$, $p < 0.05$), Hence H1 was accepted, and the first hypothesis that "There will be significant difference between means of pre-test knowledge score and post-test knowledge score regarding breathing exercises among the patients with COPD was supported".

TABLE -V

COMPARISON OF PERFORMANCE ON BREATHING EXERCISES AMONG THE PATIENTS WITH COPD BETWEEN PRETEST AND POSTTEST.

Before calculating the 't' value, alternative hypothesis (H2) was stated.

H2: There will be significant difference between mean of pre-test performance score and post-test performance score regarding breathing exercises among the patient with COPD

Variables	Mean	SD	Paired 't' test value
Pre-test	4.60	2.99	9.655
Post-test	10.34	1.29	

$$t(29,0.05) = 1.699$$

Table V shows that the mean performance in pre-test was 4.60 with a standard deviation 2.99. In post-test, the mean score was 10.34 with a standard deviation 1.29.

The improvement was statistically tested by paired 't' test and the result were found to be significant ($t = 9.65$, $p < 0.05$), Hence H2 was accepted, and the second hypothesis that "There will be significant difference between means of pre-test performance score and post-test performance score regarding breathing exercises among the patients with COPD was supported".

SECTION- IX
TABLE – VI
CORELATION BETWEEN KNOWLEDGE AND PERFORMANCE
REGARDING BREATHING EXERCISES WITH SELECTED DEMOGRAPHIC VARIABLES

Demographic variables	No.of subjects	Knowledge Mean score	Practice mean score	'r' value
AGE				
b. 41yrs – 50 yrs	1	15.50	6.67	1.0000**
c. 51yrs – 60 yrs	11	15.86	7.95	0.4480*
d. 61yrs – 70 yrs	12	17.04	6.85	0.7890**
e. > 70 yrs	6	15.42	7.97	0.5810*
EDUCATIONAL QUALIFICATION				
a. Illiterate	-	-	-	-
b. Primary school	12	16.46	6.90	0.5460**
c. High school	4	17.25	6.21	0.6780NS
d. Higher secondary	8	14.50	7.29	0.4930NS
e. Graduate & above	6	15.67	8.19	0.6160*
MONTHLY INCOME				
a. < 5000	12	16.17	7.00	0.5100*
b. 5001 - 8000	10	16.18	7.79	0.7070**
c. 8001 – 10,000	6	16.67	7.25	0.8540**
d. > 10,000	2	15.00	11.00	0.0000**
DURATION OF ILLNESS				
a. < 3 years	12	15.83	7.63	0.5450**
b. 4-7 years	8	16.63	6.44	0.7650**
c. > 8 years	10	16.40	8.12	0.6270**

Table

In some groups, the number of samples are too less to find any meaningful relation between knowledge and performance, ignoring those results (for example in the Age group 41-50yrs and >70yrs, Educational qualification High school, higher secondary, graduate and above, Monthly income Within Rs. 8001-10,000 and > 10,000, Duration of illness 4-7yrs) the rest of the group shows significant positive correlation among knowledge and performance score. So, it can be inferred that the knowledge gained by the planned teaching has a positive effect on the performance of breathing exercises.

This chapter dealt with presentation of data in tables and figures, interpretation and discussion after the tables.

Thus the analysis helped the investigator to gain an insight in to the impact of planned teaching on knowledge and performance regarding breathing exercises among patients with COPD. Interpretation of the statistical findings according to the objective of the study is also discussed. The analysis is done by using descriptive and inferential statistic. Thus after the planned teaching it can be found out that it was effective and there is a positive correlation between the knowledge and performance regarding the breathing exercises among patients with chronic obstructive pulmonary diseases.

SECTION- I
TABLE – I
FREQUENCY AND PERCENTAGE DISTRIBUTION OF
DEMOGRAPHIC VARIABLES

N = 30

S.NO.	Demographic Variables	Frequency (Numbers)	Percentage
1.	Age in years		
	f. 30-40 yrs.		
	g. 41-50 yrs.	1	3.33%
	h. 51-60 yrs.	11	13.25%

	i. 61-70 yrs.	12	40%
	j. > 71 yrs.	6	20%
2.	Gender		
	c. Male	22	73.3%
	d. Female	8	26.6%

Table I shows the distribution of demographic characteristics of the patients. Out of 30 patients, 1 (3.33%) patient belong to 41 -50yrs, 11 (13.25%) patients belongs to 51- 60yrs, 12 (40%) patients belongs to 61-70yrs and 6 (20%) patients belongs above 71yrs.

Majority of the patients 22 (73.3%) were male and 8 (26.6%) were female.

MAJOR FINDINGS OF THE STUDY:

1. In pre-test 27(90%) samples had inadequate knowledge, 3 (10%) had moderately adequate knowledge and no one had adequate knowledge. The mean knowledge in pre-test was 10.63 with a standard deviation of 3.97. But after planned teaching about 19 (63.33%) had adequate knowledge, 8 (26.67%) had moderately adequate knowledge & 3(10%) had inadequate knowledge with a mean score of 21.83 with a standard deviation 3.32.

2. With regard to skill on performing breathing exercises in pre-test 26 (86.67%) of the patient had inadequate performance, 2 (6.67%) had moderately adequate and 2(6.67%) had inadequate performance with a mean performance score in pre-test of 4.60 and standard deviation 2.99 .But after planned teaching 2(6.67) of them performed inadequately, 12(40%) of them had moderately adequate performance and 16 (53.33%) had adequate performance with mean score of 10.34 and standard deviation of 1.29.

3. On analyzing the response given by the patients in the knowledge and performances observed by the investigator on breathing exercises among COPD patients, the calculated value of 't' was found to be statistically significant at 0.01 level indicating that the planned teaching given by the investigator on breathing exercises was effective.

4. There was significant positive relationship between knowledge and performance with certain demographic variables (age, educational qualification, monthly income & duration of illness)

The first step of the study was to assess the demographic variables of the samples. In table I, the distribution of demographic variables shows that the samples belonged to different age groups, educational qualifications, monthly income and duration of illness. The first objective of the study was to assess the knowledge of breathing exercises among patients with chronic obstructive pulmonary diseases before and after planned teaching.

Table II shows that in pre-test out of 30 patients 27(90 %) had inadequate knowledge, 3 (10 %) had moderately adequate knowledge and none had adequate knowledge.

Table III shows that, in post-test 3 (10%) had inadequate knowledge, about 8 (26.67%) had moderately adequate knowledge and 19 (63.33%) had adequate knowledge. The second objective of the study was to assess the performance of breathing exercises among patients with chronic obstructive pulmonary diseases before and after planned teaching. In this study,

Table IV shows that majority of the patient 26 (86.67%) had inadequate performance and 2 (6.67%) had moderately adequate performance and 2 (6.67%) patient had adequate performance.

Table V shows that after the planned teaching majority of the patient performed breathing exercises adequately 16 (53.33%) while 12 (40%) of them had moderately adequate performance and only 2 (6.67%) of them performed breathing exercises adequately. M Th third objective of the study was to compare the knowledge and performance of breathing exercises among the patients with chronic obstructive pulmonary diseases before and after the planned teaching.

Table VI shows that the mean post-test knowledge score (21.83) on breathing exercises among the patients with COPD were highly significant than the pre-test knowledge score (10.63) which was statistically confirmed with paired 't' test. The statistical value supported the first research hypothesis that "There will be no significance difference between means of pre-test knowledge score and post-test knowledge score regarding breathing exercises among the patient with COPD"

Table VII Shows that mean pre-test performance score was 4.60 .In post-test it was increasing by 10.34. The result indicates that planned teaching on breathing exercises among the patient with COPD, which was statistically confirmed by paired 't' test. The second hypothesis that " There will be significant difference between means of pre-test performance score and post-test performance score regarding breathing exercises among the patients with COPD" is thus supported. The fourth objective is to correlate knowledge and performance with selected variables such age, education, income and duration of illness. In this study, the findings of the table VIII revealed that there was positive correlation between knowledge and performance with certain selected variable such as age, educational qualification, monthly income and duration of illness. The present study findings showed that the planned teaching on breathing

exercises among patient with COPD which can prevent further respiratory complication, reduces dyspnea and improves health related quality of life.

NURSING IMPLICATIONS:

The investigator has drawn the following implications from the study which is of vital concern to the field of nursing service, nursing education, nursing administration and nursing research.

Nursing service:

The basic nursing process covers assessment, diagnosis, planning, implementation and evaluation and is used in combination with specialized knowledge regarding care of breathing difficulty in different clinical settings like hospitals and community. Patient teaching is one of the important aspects of comprehensive care. Teaching and non pharmacological interventions such as deep breathing exercises (PLB & DB) are the areas of independent nursing practice and every opportunity should be used by nurses in the hospital and community or school health programmes to teach DBE to patients with COPD. So, the researcher felt that the planned teaching will increase the self-care among the patients with COPD would help them to implement breathing exercises with a body of knowledge in different settings.

Nursing education:

The changing trend in nursing requires nursing educators to implement programmes offering the requisite knowledge and skill to deal with trends on breathing exercises. Patients need to be taught the importance of health education. The nursing syllabus should stress on teaching breathing exercises as part of the curriculum in different setting. If they practice these breathing exercises, they would be better equipped to demonstrate and teach their clients these practices.

Nursing administration:

Nurse Managers should come forward to organize health care services in relation to management of COPD. As a nurse leader she should motivate to practice breathing exercises to increase the pulmonary function and live a productive life. She should also include breathing exercises as a regular nursing intervention in the ward, rehabilitation unit and a part of health education programme. Nurse administrator must also motivate all staff to practice these methods themselves to better quality of life and reduce stress which is a main factor of respiratory disorders.

Nursing research:

Research is the systematic inquiry whose ultimate goal is to develop, refine & expands a body of knowledge to guide nursing. The important of nursing research as felt by the world contribute to meet the health need of the people. As a profession the expanding role and scope of nursing is endless. The non-pharmacological measures are not expanded to a large extent which directly related to independent nursing. The literature review indicates that this kind of study is conducted by nurses in India but they have to establish this in the global scenario. Further research may be conducted on preparation of various planned teaching of COPD and breathing exercises in different settings like slums areas, highly air polluted areas- industrial zone, heavy vehicles, emission zone, forest zone – for different allergens and in different climatic zone.

SUGGESTIONS:

For the better generalization, the study could have done on a larger sample.

RECOMMENDATION:

Keeping in view the findings of the present study, the following recommendations were made:-

- 1/ A similar study can be repeated by using a larger sample for the generalizations.
- 2/ A similar study could be conducted with a control group.
- 3/ A study could be done to compare the effect of breathing difficulty using only Pharmacological treatment and treatment combined with deep breathing exercises.

SUMMARY:

This chapter dealt with a brief overview of the research process, major findings of the study limitations, conclusion, nursing implications, suggestions and recommendations for further research.

CONCLUSION:

The investigator concluded that this planned teaching enhanced the knowledge and skill in performing breathing exercises, hence this will act as an effective means in minimizing the progression or further complication of COPD. COPD. Breathing exercises are very important aspects in improving the health related quality of life. If breathing

exercises are taught properly to the patients it can be of great benefit as it is cost effective and needs a little concentrated time and determination to actually conquer the goal.

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