

A Study To Assess The Effectiveness Of Self-Management Education On Quality Of Life (Qol) In Patients With Chronic Obstructive Pulmonary Disease (COPD), At Selected Hospital

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ABSTRACT

Background of the study: COPD is predicted to be the most common cause of death globally including India by 2020. Chronic obstructive pulmonary disease (COPD) is a chronic inflammatory lung disease that causes obstructed airflow from the lungs. Symptoms include breathing difficulty, cough, mucus (sputum) production and wheezing. It's caused by long-term exposure to irritating gases or particulate matter, most often from cigarette smoke. People with COPD are at increased risk of developing heart disease, lung cancer and a variety of other conditions. **Aim and objectives:** The aim of the study is to assess the effectiveness of self- management education on Quality Of Life (QOL) in patients with Chronic Obstructive Pulmonary Disease (COPD), at selected hospital, Karad. **Methods:** Research design adopted for the study is quasi experimental nonequivalent control group design. Non probability purposive sampling technique is used to select the 60 COPD patients for experimental and control group. Quality Of Life (QOL) assessed through modified St. George's Respiratory Questionnaire and Self-management education was conducted as an intervention. After 15 days post test was conducted. **Results:** The data reveals that there was a significance difference in the mean pre test and post test Quality Of Life scores of COPD patients in all components as well as the total QOL in experimental group whereas there is no improvement in the QOL of COPD patients in control group. **Conclusion:** Self management educational interventions was effective in increasing Quality of Life of COPD patients and the study finding that there was a significant difference in the pre test and post test Quality Of Life scores of COPD patients in experimental group regarding self-management education among COPD patient.

Keywords: Quality of Life; chronic obstructive pulmonary disease; self management educational intervention; chronic obstructive pulmonary disease patients.

INTRODUCTION

Chronic Obstructive Pulmonary Disease (COPD) is a type of obstructive lung disease characterized by long-term poor airflow. COPD denotes a group of respiratory disorders characterized by chronic and recurrent obstruction of airflow in the pulmonary airway.

Airway obstruction usually is progressive and is accompanied by inflammatory responses to noxious particles or gases¹.

The term COPD encompasses two types of obstructive airway disease: emphysema, with enlargement of air spaces and destruction of lung tissue, and chronic obstructive bronchitis, with obstruction of small airways².

The risk factors for COPD include both host and environmental factors. Cigarette smoking is the primary causative factor of COPD in more than 90% of patients, as it causes changes in the airways and limit airflow³.

Hereditary deficiency of alpha 1 antitrypsin is the only known genetic abnormality that leads to COPD. Environmental tobacco smoke also called second hand smoke or passive smoke is the exposure of unknown smoker to cigarette smoke and is the risk factor for COPD. High levels of air pollution, occupational exposure to toxins and infections are also considered as causative factors for a small percentage of patients with COPD⁴.

The mechanism involved in the pathogenesis of COPD usually are multiple and includes inflammation and fibrosis of the bronchial wall, hypertrophy of the sub mucosal glands and hyper secretion of mucus and loss of elastic lung fibers and alveoli tissue. Inflammation and fibrosis of the bronchial wall, along with excess mucus secretion, obstruct airflow and cause mismatching of ventilation and perfusion. Destruction of alveolar tissue decreases the surface area for gas exchange and loss of elastic fibers leads to airway collapse. Hence, it impairs the expiratory flow rate, increases air trapping and predisposes to airway obstruction⁵.

The treatment of COPD depends on the stage of disease and often requires an interdisciplinary approach. Education of persons with COPD and their families is a key to successful management. Smoking cessation is the only measure that slows the progression of the disease along with maintaining and improving physical and psychosocial functioning, pharmacologic intervention and oxygen therapy⁶.

Ideally continued effort should be needed to educate the patient about respiratory irritants and danger. Patients education must focus on the pulmonary health risk associated with inhaled irritants. Patients must also understand the importance of personal responsibility to decrease their own health risk through taking proper preventive measures⁷.

NEED FOR THE STUDY

Advances in medicine have prolonged the life of many people with chronic diseases. Chronic diseases may not kill but they consume a lot of health care resources and threaten the QOL of the sufferers. The ultimate goal of health care is not only to delay death, but also to promote health in QOL. QOL also has been found to be predictive of health services utilization. Poor lifestyles choices, such as smoking overuse of alcohol, poor diet, and lack of physical activity and inadequate relief of chronic stress are key contributors in the development and progression of preventable chronic diseases including hypertension, COPD, cardio vascular disease and several types of cases. Even though people are aware of healthful behaviors to prevent and manage chronic conditions, many patients are inadequately prepared to start or maintain these healthy changes⁸.

Among all chronic diseases COPD is preventable disease that has on deter effects on both

the airway and lung parenchyma, COPD categories emphysema and chronic bronchitis, characterized by a reduced maximum expiratory flow and slow but forced emptying of the lungs. The disease has the one of the highest number of fatalities in the developed World due to the ever increased amount of tobacco smokers and is associated with significant morbidity and mortality⁹.

STATEMENT OF THE PROBLEM

A STUDY TO ASSESS THE EFFECTIVENESS OF SELF-MANAGEMENT EDUCATION ON QUALITY OF LIFE (QOL) IN PATIENTS WITH CHRONIC OBSTRUCTIVE PULMONARY DISEASE (COPD), AT SELECTED HOSPITAL, KARAD

OBJECTIVES

- 1.To assess the Quality Of Life (QOL) in patients with Chronic Obstructive Pulmonary Disease (COPD) both in experimental and control group.
- 2.To find out the effectiveness of self-management education on Quality Of Life (QOL) in patients with Chronic Obstructive Pulmonary Disease (COPD).
- 3.To determine the difference between the Quality Of Life (QOL) of patients with Chronic Obstructive Pulmonary Disease (COPD) of experimental and control group.
- 4.To determine the association between Quality Of Life (QOL) of patients with Chronic Obstructive Pulmonary Disease(COPD) and their selected personal variables.

METHODOLOGY

RESEARCH APPROACH

The present study aimed to assess the A study to assess the effectiveness of self-management education on Quality Of Life (QOL) in patients with Chronic Obstructive Pulmonary Disease(COPD) at selected hospital,Karad Maharastra.

RESEARCH DESIGN

The research design selected for the study was quasi experimental non- equivalent control group design.

Quasi experimental approach for an intervention study is the one in which the subjects are not randomly assigned to treat condition, but the investigator exercise some control to enhance the study's internal validity.

VARIABLES OF STUDY

The variables of the study were:

Dependent variable: Quality of life

Independent variable: Self management education

Personal variables:

Age, gender, religion, marital status, type of family, occupation, family income in rupees per month, type of diet, place of residence, duration of disease, stage of COPD, smoking index and attended any educational programme regarding COPD

SETTING OF THE STUDY

Setting is the physical location and condition in which data collection takes place. The present study conducted in Pulmonology and medicine wards and OPD at selected Hospital, Karad.

POPULATION

Population is the entire set of individuals or objects having some common characteristics. In the present study the population comprises of patients diagnosed with COPD

SAMPLE AND SAMPLING

The sample is a subset of the population. The sample of the present study comprises of patients with COPD in Pulmonology and medicine wards at selected Hospital, Karad. In the present study sample size is 60 COPD patients (30 experimental +30 control groups)

SAMPLING TECHNIQUE

Sampling is the process of selecting a portion of the population to represent the entire population²⁶. Non probability purposive sampling technique was used for selecting 60 COPD patients, 30 each in experimental and control group for the present study.

SAMPLING CRITERIA

The study samples were selected keeping in view the following predetermined criteria.

Inclusion criteria:

Patients who are diagnosed as COPD and

1. Admitted in pulmonology and medicine wards.
2. Available at the time of data collection.

Exclusion criteria:

Patients who are having other chronic respiratory diseases like

1. Respiratory failure.
2. Other underlying chest diseases.
3. Underlying heart diseases.
4. Other medical conditions that affect the QOL as diabetes mellitus, hypertension etc.

DATA COLLECTION TECHNIQUE

Selection and development of data collection Instruments:

1. Instrument in a research study is the device used to collect data. Based on review of

literature the following tools are developed by the investigator, collected by using tools:
Description of proforma for selected personal variables

The personal variables used to collect the sample characteristics like age, gender, religion, and marital status, type of family, occupation, and family income per rupees, type of diet, duration of illness, place of residence, stage of COPD, smoking index and attended any educational programme.

1. Description of Quality Of Life (QOL) assessed through modified St. George's Respiratory Questionnaire.

In the present study, the SGRQ questionnaire was used to assess the Quality of Life in patient with COPD. This tool was developed by Professor Paul Jones, Division of cardiac & vascular science, St. George's University of London, 2009. In order to categorize Quality of Life score was arbitrarily divided into Symptom (This is calculated from the summed weights for the positive responses to questions 1-8), Activity (This is calculated from the summed weights for the positive responses to questions 11 and 15) and Impact (This is calculated from the summed weights for the positive responses to questions 9-10, 12- 14 and 16-17). The Total score is calculated by summing all positive responses in the questionnaire and expressing the result as a percentage of the total weight for the questionnaire. Sum of maximum possible weights for each component and Total: Symptoms= 662.5 Activity= 1209.1 Impacts= 2117.8 and Total= 3989.4

2. Description of Self management Education

a) Description of Quality of Life among COPD patients

The data obtained from SGRQ tool was tabulated in SGRQ excel based calculator to obtain the transformed data.

b) Description of Quality of Life scores among COPD patients in experimental and control group

The Qualities Of Life were arbitrarily divided as symptom (662.5), activity (1209.1), and impacts (2117.8).

CONTENT VALIDITY

Content validity is the degree to which the items in the instrument adequately represent universe of content for the concept being measured. It is relevant for both affective measures and cognitive measures. The proforma for selected personal variables, SGRQ questionnaire to assess the Quality of life and Self-management education lesson plan, were content validated by eight experts from the field of Pulmonology department (1) clinical pharmacy (1) and nursing educators (6). The experts were requested to give their opinion and suggestions regarding appropriateness and relevance of the items. There was 100% agreement for proforma for selected personal variables and SGRQ questionnaire to assess the Quality of life and Self-management education lesson plan.

Performa for selected personal variables: There was 100% agreement between all subject experts for all the items.

SGRQ questionnaire to assess the quality of life in patient with COPD: There was 100% agreement between all subject experts for all the items.

Self-management education of COPD: There was 100% agreement between all subject experts for all the items.

RELIABILITY

Reliability is the degree of consistency or dependability with which an instrument measures the target attribute which it is designed to measure. It is the major criterion for assessing quality and adequacy of an instrument²⁶.

The reliability was established on 04-12-2017 to 16-12-2017 through inter-rater method for SGRQ questionnaire to assess the QOL. Reliability was conducted among 30 COPD patients admitted in JSS Hospital, Mysuru. With the help of two trained data collectors' data was obtained. The reliability co-efficient for SGRQ questionnaire was found to be 0.90. This indicated that, the tool was reliable.

DATA COLLECTION PROCEDURE

Prior to data collection, permission was obtained from JSS Hospital administrative authority and head of department of pulmonology and medicine.

Ethical clearance was obtained from the Institution.

Subjects were selected by using purposive sampling technique according to the selection criteria and confidentiality was assured.

An informed consent was obtained from the respondents indicating their willingness to

participate in the study.

Experimental group samples were selected from Pulmonology ward and control group samples were selected from Medicine wards.

On the first day, with the help of trained data collector Quality of life was assessed by using SGRQ through interview method. On the same day Self-management education programme was conducted for 5-6 patients per day in experimental group.

In control group only Quality of life was assessed by using SGRQ through interview method.

OPD. Approximately 25-30 minutes was taken to collect the data. 30 minutes was taken to provide self-management education programme per patient.

Data collection procedure was ended by thanking the each participant.

PLAN OF DATA ANALYSIS

Data analysis is the systematic organization and synthesis of data and testing of research hypothesis using those data. Data analysis consists of examining, categorizing, tabulating or otherwise re-combining the evidence to address initial propositions of a study. Data obtained was coded and edited into a master sheet. It was planned to use the both descriptive and inferential statistics for the data analysis.

RESULTS

This chapter presents the analysis and interpretation of the data collected to assess the effect of self-management education on Quality Of Life (QOL) in patients with Chronic Obstructive Pulmonary Disease (COPD), in selected Hospital Karad. The data were analysed on the basis of the study objectives, using both descriptive and inferential statistics.

OBJECTIVES

The objectives of the study are:

- 1To assess the Quality Of Life (QOL) in patients with Chronic Obstructive Pulmonary Disease (COPD) both in experimental and control group.
- 2To find out the effectiveness of self-management education on Quality Of Life (QOL) in patients with Chronic Obstructive Pulmonary Disease (COPD).
- 3To determine the difference between the Quality Of Life (QOL) of patients with Chronic Obstructive Pulmonary Disease (COPD) of experimental and control group.
- 4To determine the association between Quality Of Life (QOL) of patients with Chronic Obstructive Pulmonary Disease (COPD) and their selected personal variables.

The main aim of the study was focused to determine the effectiveness of self-management education on Quality Of Life (QOL) in patients with Chronic Obstructive Pulmonary Disease (COPD), at selected hospital, Karad. Data was collected from 60 COPD patients (30 in experimental and 30 in control group) who are in the age group 30-90 years. Collected data was analyzed by using descriptive and

inferential statistics and presented in the form of tables and graphs. Frequency, mean, median and standard deviation was computed to analyze the Quality Of Life SGRQ component scores among COPD patients. Paired 't' test was used to determine the significance difference between the mean pre test and post test Quality Of Life scores among COPD patients in experimental and control group. An independent 't' test applied to determine the significance of difference between the mean post test Quality Of Life scores in experimental and control group. Chi-square was applied to find out the association between the Quality of Life in patients with COPD and their selected personal variables. The analysis of the study revealed that in pre test majority of the COPD patients on QOL were decreased whereas in post test majority of the COPD patients on QOL were increased. The self management education was effective in increasing the QOL among COPD patients as computed 't' (t :2.00) 11.3 value for QOL was found to be significant at 0.05 level of significance. There was no significant association between levels of Quality of Life in patients with COPD and their selected personal variables.

Thus, it was concluded that, the self management education was effective in enhancing on Quality Of Life (QOL) in patients with Chronic Obstructive Pulmonary Disease (COPD).QOL is impaired in patients with COPD and it deteriorates considerably with increase severity of diseases. Therefore, the study reinforces the need to organize health campaigns and teaching programme which sensitize on Quality Of Life (QOL) in patients with Chronic Obstructive Pulmonary Disease (COPD) patients. Findings of the present study showed that majority 14(66.6%) samples in experimental group and 16(53.3%) samples in control group were in the age group of 51-70 years, majority 22(66.6%) samples in experimental group and 20(73.3%) samples in control group were males.

Majority 14(46.6%) samples in experimental group and 18(60%) samples in control group belonged to Hindu religion. All samples 30 (100%) in both experimental and control group were married. Majority samples 15(50%) in experimental group was living in joint family and majority 13(43.3%) samples in control group were living in nuclear family.

Majority eight (26.6%) samples in experimental group were farmer and 10(33.3%) samples in control group were home makers. Majority 16(53.3%) samples in experimental group and 13(43.3%) samples in control groups were having family income <10000 rupees per month. Majority 19(60%) samples in experimental group were vegetarians and 16(53.3%) samples in control group were consumed mixed type of diet. Majority 17(56.6%) samples in experimental group and 16(53.3%) samples in control group were suffering from COPD since <1 year duration.

Majority 10(33.3%) samples in experimental group were in the severe stage of COPD and 13(43.3%) samples in control group were in the moderate stage of COPD. Majority 8(26.6%) samples in experimental group were heavy smokers and 6(20%) samples in control group were moderate smokers. None of them 30(100%) in both experimental and control group were not attended any educational programme regarding COPD.

DISCUSSION

This chapter presents the discussion of the findings with regard to the study objectives, hypotheses and finding of other studies. The present study was aimed to assess the effectiveness of self-management education on Quality Of Life (QOL) in patients with Chronic Obstructive Pulmonary Disease (COPD) at selected hospital, Karad.

The discussion is presented under following sections:

1. Finding related to selected personal variables of COPD patients
2. Finding related to selected effectiveness of self-management education of quality of life by using SGRQ questionnaire.
3. Description of Quality of Life among COPD patients

Significance of difference between pre-test and post-test Quality Of Life scores of COPD patients in experimental and control group

Significance of difference between mean Quality Of Life scores of COPD patients in experimental and control group

Findings related to association between Quality of Life in patients with COPD and their selected socio demographic variables

1. Finding related to selected personal variables of COPD patients

Data related to the age of patients reveals that majority 46.6% samples in experimental group and majority 53.3% samples in control group were in the age group of 51-70 years. The similar findings can be retrieved from another study showed COPD patients were 70 years and above ^(15, 10). Majority 73.3% samples in experimental group and 66.6% samples in control group were male group. The similar findings can be retrieved from another study showed that gender of COPD patients were males. Males had a higher prevalence (11.1%) compared to females (4.5%).

Majority 46.6% samples in experimental group and 60% samples in control group belonged to Hindu religion, all subjects (100%) were married in both experimental and control group, 50% samples in experimental group were belonged to joint family and 43.3% samples in control group were belonged to nuclear family.

Majority 26.6% samples in experimental group were belonged to farmer and 33.3% in control group were belonged to home maker.

53.3% samples in experimental group and 43.3% samples in control group of the COPD patients were having monthly income of Rs<10000. 63.3% samples in experimental group were consumed vegetarian type of diet and 53.3% samples in control group were consumed mixed type of diet.

56.6% samples in experimental group from rural and 46.6% samples in control group from semi urban/town, 56.6% samples in experimental group and 53.3% samples in control group were <1 years duration of illness.

33.3% samples in experimental group were in the severe stage of COPD and 43.3% samples in control group were moderate stage of COPD. Similar findings can be retrieved from a study showing that there was highly statistically significant difference between different grades of COPD severity as regarding their smoking index ($p \leq 0.001$)⁹.

Majority 26.6% samples in experimental group were moderate smoker and 20% samples in control group were heavy smoker, the similar finding can be retrieved from two studies showing that there was statistically significant positive correlation between smoking index in both symptom score and impact score⁹. The prevalence of smoking was very high among men at 71.9% and all the women were nonsmokers. The prevalence of COPD was 14.7% in smokers, 19.3% had mild to moderate nicotine dependency and 12.8% were highly dependent¹⁰. All subjects (100%) were not attended any educational programme regarding COPD in both experimental and control group. No studies can be retrieved to support this finding.

1. Finding related to selected effectiveness of self-management education of quality of life by using SGRQ questionnaire

• Description of Quality of Life among COPD patients

The data obtained from SGRQ tool was tabulated in SGRQ excel based calculator to obtain the transformed data.

The finding shows that the pre test mean Quality Of Life scores in experimental group in symptom is 68.7 with SD ± 21.4 , ranged from 15.12-69.45; activity mean is 62.5 with SD ± 23 , ranged from 12.84-62.55; impact mean is 45.2 with SD ± 24 , ranged from 20.47-58.83; total mean is 62.5 with SD ± 28.5 , ranged from 61.60-68.25; whereas, the pre test mean Quality Of Life score in control group of symptom is 65.8 with SD ± 13.8 , ranged from 27.44-68.11; activity mean is 65.6 with SD ± 16.1 , ranged from 0.00-37.04; impact mean is 58.9 with SD ± 18.1 , ranged from 1.63-41.85; total mean is 62.1 with SD ± 14.4 , ranged from 40.49-85.69.¹¹

The post test mean Quality Of Life score in experimental group in symptom is with SD ± 9.8 , ranged from 27.44-68.11, activity mean is 17.9 with SD ± 10.9 , ranged from 0.00-37.04, and impact mean is 16.8 with SD ± 10.5 , ranged from 1.63- 41.85; total mean is 22.8 with SD ± 13.4 ranged from 5.61-41.12; whereas, the post test mean Quality Of Life scores in control group in symptom is 65 with SD ± 14.3 , ranged from 39.06-88.77, activity mean is 66 with SD ± 20.4 , ranged from 30.82-100, and impact mean is 55.4 with SD ± 21.1 , ranged from 20.69-96.88; total mean is 57.5 with SD ± 15.02 , ranged from 35.21-90.57¹²

Significance of difference between pre-test and post-test Quality Of Life scores of

COPD patients in experimental and control group

In this present study, the mean difference between pre test and post test symptom score is 17.5, activity score is 44.6, impact score is 28.4 and total score is 38.6 in experimental group. To find the significance of difference in the pre test and post test Quality Of Life scores, the paired 't' test was computed and the obtained paired 't' value for symptom: 11.09, activity: 9.31, impact: 12.47 and total: 11.29 was found to be significant at 0.05 level of significance.¹⁴ Hence, the null hypothesis is not supported and inferred that, there was a significance difference in the mean pre test and post test Quality Of Life scores of COPD patients in all components as well as the total QOL in experimental group. Thus it was concluded that, Self-management education was effective in increasing the Quality Of Life in experimental group.

Whereas, the mean difference between pre test and post test symptom score is 0.8, activity score is 0.4, impact score is 06 and total score is 4.5 in control group. To find the significance of difference in the pre test and post test Quality Of Life scores, the paired 't' test was computed and the obtained paired 't' value for symptom: 0.26, activity: 1.30, impact: 1.45 and total: 1.42 was found to be not significant at 0.05 level of significance. Hence, the null hypothesis is supported and inferred that, there is no significance difference in the mean pre test and post test Quality Of Life scores of COPD patients in all components as well as the total QOL in control group. Thus, it was concluded that there is no improvement in the QOL of COPD patients in control 32 group. These findings were consistent with other study revealed that there was significant difference between pre test and post test scores, concluded that health related QOL after giving selected nursing interventions was significantly increased in post test.

Significance of difference between mean Quality Of Life scores of COPD patients in experimental and control group

The mean difference in post test scores in experimental and control group is

34.7. To find the significance of difference in mean post test Quality Of Life score independent 't' value was computed and the obtained 't' value 11.3 was found to be significant at 0.05 level of significance. Hence, the null hypothesis H_0 is supported and inferred that the mean post test Quality Of Life scores in experimental group will be significantly lower than the mean post Quality Of Life score in control group.

The data reveals that there is reduction in mean score is higher in all the components in the experimental group, whereas it is observed that the reduction mean is very less in all the components in the control group. These findings were consistent with other study revealed that SGRQ impact domain scores had significant difference between the groups ($t=-2.167$, $p<0.05$) at three months. SGRQ symptoms, impact, activity domain and total scores revealed significant difference between.

groups ($t=-3.482$ to -2.530 , $p<0.05$) at six months Education programme significantly improved QOL in COPD patients.

2. Findings related to association between Quality of Life in patients with COPD and their selected socio demographic variables

Chi square was computed and the data depicted that, there is no statistically significance association between Quality Of Life and their selected personal variables. Hence, it is inferred that Quality of Life of COPD patients is not influenced by their selected personal variables.

IMPLICATION

The findings of the present study have implications for nursing practice, nursing education, nursing administration and nursing research.

Nursing practice

Several implications can be drawn from the findings of the present study for nursing practices. The present shows that, self management education on Quality of Life among COPD patients. The present study also revealed that with education programmes, Quality of life can be improved. Nurses can make themselves the part of self management education programme and health campaigns which spreads healthy messages on Quality of Life among COPD patients. Hence, it is important for the nurses to update their knowledge regarding the current trends.

Nursing education

Nursing education consists of theoretical training provided to nurses with the purpose to prepare them for their duties as nursing care professionals. The nurse educators have the responsibility to educate and guide the patients and the nurses to improve and update their knowledge regarding self management education on Quality of Life among COPD patients. The findings of the study can help the nursing students and nurses to enhance the knowledge on self management education among COPD patients to reduce the rising problem and its complication among COPD patients.

Nursing administration

Continuing nursing education enables the learner of changes and development in his/her field of speciality. Nursing administrator should plan, organize and conduct education programmes to nursing personnel. The finding of the study depicted that self management education on Quality of Life improved among COPD patients. Therefore, it is the study of nurse administrator to plan and organize for health campaigns, mobile health clinics and CNE for community level health personnel and self management education programmes for prevention of selected problem among COPD patients.

Nursing research

This present study has great importance in the present day complexities of the health care system. The study has revealed the effectiveness of self management education programme in improving Quality of Life among COPD patients. Further studies can be conducted to determine the level of knowledge of nurses, patients regarding COPD self management.

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