

Evaluation of Stress Level and Quality of Life in Different Stages of COPD

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ABSTRACT

Background: The aim of the present study is to evaluate the stress level and quality of life using DASS and SGRQ scale in COPD patients and to see if there is any difference found in the level of stress and quality of life with different stages of COPD.

Design: Observational study.

Subjects and methods: 31 males and female COPD patients were involved in the study, both the genders are included between the age 40 years-60 years. The study sample consists of COPD patients of mild obstruction, severe, very severe and those having obstruction and restriction. Patients were selected from IPD and OPD of HAHC hospital Jamia Hamdard. Their PFT test will be done and patients were recruited after signing the consent form. Patients were asked to fill the questionnaires for stress and quality of life DASS and SGRQ scales were used in this study and then their PFT test will be done.

Results: The results of the study show that there are no significant changes present in stress level and quality of life in different stages of COPD.

Conclusion: The results of the study show that there is no significant difference in stress and quality of life when the data is compared between the all four groups.

Keywords: FVC; FEV1; FEV1/FVC; PEF; DASS; SGRQ; COPD; PFT

INTRODUCTION

In the modern world one of the major causes of morbidity and mortality are pulmonary diseases. Chronic Obstructive Pulmonary Disease (COPD) is a common, preventable and treatable disease that is characterized by continuous respiratory symptoms and airflow restriction which is due to airway and/or alveolar abnormalities usually caused by notable exposure to noxious particles or gases. COPD is a leading cause of morbidity and mortality worldwide that induces an economic and social burden that is both substantial and increasing [1].

COPD represents a significant public health challenge and is a major reason of chronic morbidity and mortality in all over the world. COPD is the fourth leading cause of death by 2020 and is at fifth position as the cause of loss of Disability Adjusted Life Year's (DALY's) according to the baseline projections made in Global Burden of Disease study (GBDS).

Dyspnoea, impaired exercise tolerance and impaired quality of life are commonly found in a COPD patient. Also reduced exercise tolerance along with muscle weakness makes the COPD patient unable requiring frequent utilization of health care resources. Also, they avoid to go for work due to their disease and become socially isolated which makes them feel depressed and stressed [2].

COPD causes chronic inflammation of the airway and destruction of the lung parenchyma, that causes the structural changes and dynamic collapse in small airways. Its most striking feature is expiratory airflow limitation which means the ability to perform a complete exhalation is impaired, causing air trapping and lung hyperinflation.

MATERIALS AND METHODS

Having Chronic Obstructive Pulmonary Disease (COPD) is often stressful stirring up worries about the patient's long-term

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future and that of their family. It's frequent to feel depressed, distress, and overwhelmed sometimes [3]. It may be hard to accept that their breathing limits the daily life. Living with COPD can also be stressful, because it forces them to make changes in their life. Feeling stressed can aggravate shortness of breath, which in turn can make them feel more anxious. Chronic stress may also lead to more recurrent flare-ups of Chronic Obstructive Pulmonary Disease (COPD) symptoms.

The COPD Patient is already in stress due to the complication of the disease such as dyspnoea, chronic cough or sputum production, shortness of breath, breathlessness and being admitted in the hospital added more stress in COPD patient's life, but their stress level is not being checked yet, so the current study has been taken up to evaluate the stress in COPD patient's and to evaluate their quality of life by using questionnaires so the COPD patient's may be benefited with psychological assistance if stress is found [4].

Chronic Obstructive Pulmonary Disease (COPD) among the most popular respiratory diseases with a nonstop need for hospitalization these patients experience acute exacerbations during the year and hospitalization is a significant part of patient care. The illness severity and a progressive loss of quality of life and physical mobility deteriorate patient's social and family support. The long stay in the hospital separates them from their home environment, makes them see themselves as different and may cause them to live alone. They often feel uncertain about the future and fear that they will lose their freedom. All these factors can cause psychological problems such as loneliness and hopelessness. On comparison with patients having other long term conditions the COPD patient recounts worse psychological functioning and greater psychological distress [5].

COPD may force at least two individuals to leave the workplace the affected individual and a family member who must now stay home to care for their disabled relative. Smoking increases the severity of COPD, makes daily life activities effortful and stressful and increases the risk of depression or anxiety in COPD patients [6].

Nevertheless, however poor association between pulmonary function and quality of life and social support have been described in the literature, current studies have shown that improving physical activity (specific rehabilitation programs) can reduce symptoms and associated psychological dysfunctions and increase wellbeing and quality of life in these patients.

This study focuses on determining the stress level in COPD patients by using stress scale questionnaire and quality of life using St. George's respiratory questionnaires in the different stages of COPD.

A total 31 no. COPD patients were selected for the study on the basis of the inclusion and exclusion criteria. Their PFT test was done and on the basis of the result of PFT test they were placed under the four groups namely 1) very severe, 2) severe, 3) obstruction and restriction 4) mild obstruction. Thirty-one patients among which both the genders are included between the age 40 years-60 years. The study sample consists of COPD patients of mild obstruction, severe, very severe and those having obstruction and restriction. Patients were selected from IPD and OPD of HAHC hospital Jamia Hamdard. The patients were recruited after signing the consent form, their PFT test will be done and patients were asked to fill the questionnaires for stress and quality of life DASS and SGRQ scales were used in this study [7].

RESULTS

The analysis of parameters was done by SPSS version 21 and the significance level was set at $p < 0.5$. The test used for the analysis was Onaway Anova. When the DASS and SGRQ scores of mild obstruction group was compared with all the rest three groups then there is no significant difference was found in the study. There were no drop out during the study period. The result of the study showed that there is no significant difference found between the stress and quality of life with different stages of COPD with ref to the Table 1 the p value for DASS is 0.338. When the scoring of the DASS scale for stress evaluation is done then after the analysis results shows that there is no significant difference found in the stress level of COPD patient between all the groups [8]. When the data is compared of mild obstruction group with the rest of all these groups (very severe, severe and obstruction and restriction) then there is no significant difference is found in the stress level of a COPD patients with ref to the Table 2 the p value for SGRQ is 0.78. The SGRQ scale is for quality of life evaluation, after the analysis of the data we found that there is no significant difference is present in quality of life between all the four groups. When the data is compared of mild obstruction group with the rest of all three groups (very severe, severe and obstruction and restriction) then there is no significant difference is found in the quality of life of a COPD patient (Figures 1 and 2).

Table 1: Showing the details of mean, group, variables, p value and F value of DASS.

Variables	Group	Mean	SD	F-value	P-value
Age	Very severe n=11	54.36	5.988	0.24	0.868
	Severe n=4	53.25	7.632		
	Obstr and restr n=10	53.9	6.315		
	Mild obstr n=6	51.67	6.89		

FEV1	Very severe n=11	0.61	0.13928	10.154	0
	Severe n=4	53.25	7.632		
	Obstr and restr n=10	53.9	6.315		
	Mild obstr n=6	51.67	6.89		
FVC	Very severe n=11	1.4827	0.4097	4.091	0.16
	Severe n=4	2.475	0.28572		
	Obstr and restr n=10	1.619	0.46582		
	Mild obstr n=6	2.41	1.27762		
FEV1/FVC	Very severe n=11	41.8	4.06497	51.141	0
	Severe n=4	49.75	1.50222		
	Obstr and restr n=10	67.226	6.68472		
	Mild obstr n=6	71.5583	7.97047		
PEF	Very severe n=11	2.3745	2.19848	1.219	0.322
	Severe n=4	3.4475	1.1443		
	Obstr and restr n=10	2.809	0.83118		
	Mild obstr n=6	3.87	1.7133		
DASS	Very severe n=11	66.73	8.855	1.174	0.338
	Severe n=4	56	7.071		
	Obstr and restr n=10	61.6	13.201		
	Mild obstr n=6	53.83	26.126		
SGRQ	Very severe n=11	24.8155	1.54886	2.537	0.78
	Severe n=4	23.185	1.21618		
	Obstr and restr n=10	23.345	1.54072		

Table 2: Showing the details of mean, deviation, p value and t value of DASS.

DASS	Mean	S.D	T value	P value
Very severe	66.73	8.855	1.174	0.338
severe	56	7.071		
Obstruction and restriction	61.6	13.201		
Mild obstruction	53.83	26.126		

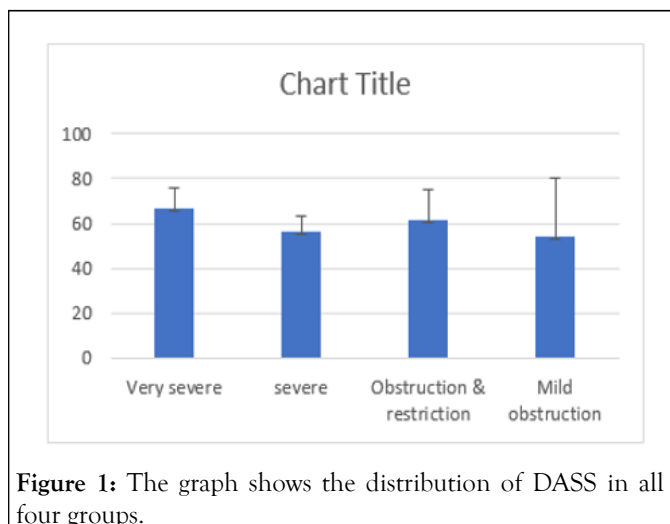


Figure 1: The graph shows the distribution of DASS in all four groups.

Figure 2: The graph shows the distribution of SGRQ in all four groups.

The previous studies have shown that the patients of COPD suffers from anxiety, depression and distress. The stress level is not yet been checked so, In the current study we taken to evaluate the stress level in COPD patient's and evaluate their quality of life by using questionnaires. Total 31no. COPD patients were selected for the study, they were assessed for the inclusion and exclusion criteria after that their PFT was done and on the basis of the result of PFT they were placed under the four groups namely 1) very severe 2) severe3) obstruction and restriction 4) mild obstruction [9].

The result of the study showed that there is no significant difference found between the stress and quality of life with different stages of COPD. When DASS stress scale scoring is analysed and compared between the all four groups that is very severe, severe, obstruction and restriction and mild obstruction the p value obtained is 0.338 so the result is showing that there is no difference found in the stress level of the COPD patient of mild, obstructive and restrictive. severe and very severe. All these four stages of COPD patients are showing the same level of stress.

The previous study of “Are Patient with COPD Psychologically distressed?” In this study it is mentioned that there is no significant increase in psychological complaints was found in patients with mild to moderate COPD. The result of this study shows that no difference was detected in general psychological distress between the patients with COPD stage 1 or 2 and those with stage 3 or 4 ($p>0.05$ for all). So from these findings we assumed that the stress level of a COPD patient remains the same from the initial stage to the final stage that means throughout the disease the stress level remains constant [10,11].

The analysis of the data for quality of life that is scoring of SGRQ scale showed that there is no significant difference was found between all the four groups very severe, severe, obstruction and restriction and mild obstruction the p value obtained is 0.78 [12]. From the findings of the current study we can assume that the quality of life of a COPD patient starts deteriorating with the advent of the disease, it starts declining with the onset of the disease and remains constant from mild to moderate, severe and very severe stage. The result is showing that there is no difference found in the quality of life of a COPD patient of mild, obstructive and restrictive, severe and very severe. All these four stages of COPD patients are showing the same level of quality of life

LIMITATION OF THE STUDY

One of the limitation of this study was the sample size is small and stress is supposed to found more in those patients who are having very severe stage and those who come with exacerbation this type of patients who comes under the very severe stage their number is less, we only get 11 patients who are in very severe stage of COPD.

Another limitation was we could not get the even number of patients in all the four groups that is 1) very severe 2) severe, 3) obstructive and restrictive and 4) mild obstruction. In all these groups the distribution of number of patients was not the same.

FUTURE STUDIES

The future studies could evaluate pre and post stress level as well quality of life in COPD patients by using these scales DASS and SGRQ after giving pulmonary rehabilitation. There could be comparison done between the stress level and quality of life between COPD patients and restrictive lung disease, infiltrative lung diseases, occupational lung diseases and pulmonary vascular diseases.

CONCLUSION

The current study dealt with the stress and quality of life in COPD patients. The results of the study show that there is no significant difference in stress and quality of life when the data is compared between the all four groups. The evaluation of stress and quality of life of COPD patients using these scales DASS and SGRQ could be done by collecting the data from the multiple hospitals.

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