Pulmonary Medicine

TO STUDY THE SIGNIFICANCE OF ANXIETY AND DEPRESSION IN COPD PATIENTS BY HAMILTON SCORE

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ABSTRACT **Background :** As COPD is a chronic inflammatory disease, Better understanding of the interrelation between the health status and psychological status is important to ensure better individual care. Psychological status of the patient is important in disease outcome. Anxiety and Depression can be evaluated With a questionnaire which is short and easy to administer.
Materials And Methods: This is a prospective study done at Narayana Medical College, Nellore for a period of 4 months i.e., January to April 2022. 100 patients were enrolled in the study, 50 patients with COPD and 50 patients without COPD taken as controls. Their levels of Anxiety and Depression were accessed with Age, Gender, BMI, Smoking history and Degree of Obstruction based on PFT. **Result:** Prevalence of Anxiety and Depression is more among COPD patients in which anxiety is more in middle aged current smokers with low BMI and PFT value Moderate to severe obstruction. **Conclusion:** Hamilton score is a simple questionnaire that helps in assessing the anxiety in COPD patients, so that as a part of Rehabilitation Cognitive behavioural therapy can be given to improve the quality of life along with routine treatment.

KEYWORDS : COPD, Anxiety, Depression, Hamilton score

INTRODUCTION

Chronic obstructive pulmonary disease (COPD) is a common preventable and treatable disease that is characterized by persistent respiratory symptoms and air flow limitation that is due to airway and alveolar abnormalities usually caused by significant exposure to noxious particles or gases.

COPD is highly prevalent disease worldwide, The prevalence is variable between countries, The prevalence rate is around 10% in individual aged 40 and above

COPD is a multi morbidity disorder associated with significant co-morbidities like cardiovascular diseases, skeletal muscle dysfunction, anxiety and depression.

A better understanding of the inter relationship between health status and psychological status of the patient is important to ensure the better individual care

Anxiety and depression are important co-morbid conditions, often under-diagnosed that influences quality of life and prognosis in COPD. The presence of anxiety and depression in COPD patients is associated with increased mortality, exacerbation rates, length of hospital stay and decreased quality of life and functional status

Psychological issues particularly anxiety and depression have received growing attention and shows that it should not to be overlooked when assessing the patient and also they have an impact on pulmonary rehabilitation

AIMS AND OBJECTIVES
1. To estimate the prevalence of anxiety and depression among COPD patients
2. To study the prevalence of anxiety and depression in relation to the severity of COPD
3. To compare the prevalence of anxiety and depression in COPD patients with non COPD patients

METHODOLOGY
Study setting: outpatient department of pulmonary medicine, Narayana medical college, Nellore

Study period: January to April 2022

Study design: cross-sectional study

Sample size: 100 subjects, 50 with COPD and 50 without COPD

Sampling method: consecutive sampling taken on our OP Day, on any day of study all the eligible COPD patients and non-COPD patients were included in the study. Inclusion criteria: All the patients aged above 18 years of age, not critically ill and willing to participate in the study were included in the study.

Exclusion criteria: patients aged less than 18 years, critically ill, patients with exacerbations and not willing to participate in the study

Method of data collection: Before starting the study ethical clearance was taken from institutional ethics committee. An informed written consent in local language was taken before collecting the data. The demographic and clinical data was collected using a pre designed and pre tested questionnaire. Anxiety and depression were diagnosed using Hospital Anxiety and Depression Scale (HADS). The data on severity of anxiety and depression was collected using Hamilton score questionnaire, COPD severity was assessed using the GOLD classification

Data analysis: The data was analyzed using SPSS version 25.0. Means were used to summarize the quantitative variables and percentages were used to summarize the qualitative variables. The quantitative variables were analyzed using T-test and qualitative variables were analyzed using chi-square test. P-Value less than 0.05 were taken as significant.

RESULTS

Table 1. Demographic and clinical characteristic of the study subjects

	COPD (n=50)	Non COPD (n=50)	P-value
Male	46	40	
female	4	10	
Mean age(years)	61.34 ±13.58	60.13±9.57	0.6077
Smoking	40	16	<0.0001
Mean Pack years	20.13±6.47	5.16±3.85	<0.0001
Mean BMI	28.12±13.14	26.45±14.86	0.553
Mean FEV1(%)	56.17±8.91	82.14±6.84	<0.0001
Anxiety	30(60%)	12	0.0003
Depression	10	4	0.1959

A total Patients of 50 COPD & 50 NON-COPD were studied, among them 86 male &14 females. Majority of the COPD patients were Males.

The mean age of COPD patients was 61.34% and that of non - COPD

patients were 60.13% and the difference was not statistically significant.

Compared to non-COPD patients majority of COPD patients were smokers.There was statistically significant difference between COPD and non-COPD patients in mean pack years, the COPD patients had higher (20.13%) mean pack years.

There was no significant difference in mean BMI between COPD and non-COPD patients.

Compared to non COPD patients, COPD patients had very low mean FEV1 and the difference was statistically significant.
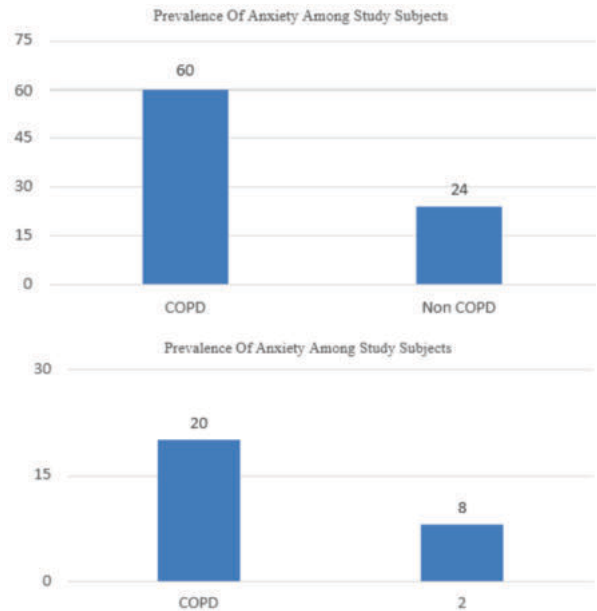

Prevalence Of Anxiety Among Study Subjects

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Table 2: Distribution of COPD patients according to severity of anxiety (n=30)

Severity of anxiety	Number	Percentage
Mild	10	33.34
Moderate	15	50.00
Sever	5	16.66
Total	30	100

Table 3: Distribution of COPD patients according to severity of depression (n=10)

Severity of depression	Number	Percentage
Mild	6	60
Moderate	2	20
Sever	2	20
Total	10	100

P VALUE - 0.1959

Compared to non COPD patients, COPD patients had higher prevalence of anxiety and depression. However, the statistically significant difference was seen only with anxiety.

Table 4: Distribution of COPD patents according to severity of anxiety

Anxiety	COPD (n=50)				Total
	Mild (%)	Moderate (%)	Severe (%)	Very severe (%)	
No	10(83.33)	9(64.29)	0(0)	1(16.66)	20(40.00)
Mild	2(16.66)	2(14.29)	5(27.78)	1(16.66)	10(20.00)
Moderate	0 (0)	3(21.42)	9(50.00)	3(50.0)	15(30.00)
Severe	0(0)	0(0)	4(22.22)	1(16.66)	5(10.00)
Total	12(100)	14(100)	18(100)	6(100)	50(100)

Chi-Square value = 29.286, P-value = 0.0006

Majority of the COPD patients (50%) were having moderate anxiety and only 16.66% had severe anxiety. The prevalence of anxiety increased with increase in the severity of COPD.

The severity of anxiety was also increased with increase in the severity

of COPD and it was statistically significant

Table 5: Distribution of COPD patents according to severity of anxiety

Anxiety	COPD (n=50)				Total
	Mild (%)	Moderate (%)	Severe (%)	Very severe (%)	
No	11(91.67)	12(85.72)	12(66.67)	5(83.33)	40(40.00)
Mild	1(8.33)	1(7.14)	5(27.78)	1(16.66)	8(20.00)
Moderate	0 (0)	1(7.14)	1(5.55)	0(00.00)	2(30.00)
Severe	0(0)	0(0)	0(00.00)	0(00.00)	0(10.00)
Total	12(100)	14(100)	18(100)	6(100)	50(100)

Chi-Square value = 4.534, P-value = 0.6048

There was no statistically significant difference in the presence of depression between different severity groups of COPD patients and also there was no significant increase in prevalence of depression with increase in severity of COPD.

DISCUSSION
The present study reported a high prevalence of anxiety (60%) among COPD. Similar results were reported by many studies.

The high prevalence of COPD in males is due to higher rates of smoking and more frequent occupational exposure. The cultural taboo associated with smoking in women in the Indian subcontinent, preventing them from seeking medical help could have been a reason from male preponderance.

A study done by Debabani Biswas et air., titled occurrence of anxiety and depression among stable COPD patients and its impact on functional capability reported the prevalence of anxiety as 54.66% which is close to our study.

In a study conducted by Waseem SMA et al., (14) Aligarh, 57.02% had depression, 36.37% had anxiety. In which our study shows higher prevalence of anxiety than depression.

Balcells Eet al. In his analysis of 337 clinically stable COPD patients concluded a significant association of anxiety and depression across all the stages to the disease severity in which our study shows higher prevalence in mild to moderate stages of disease severity.

A study done by Fabiano DiMarco et all., among 416 patient shoed the prevalence of anxiety as 28.2%, which is lower than our study. The high prevalence in our study could be due to low sample size.

The present study estimated the prevalence of depression as 20% among COPD patients. Similar findings were reported by Fabia Di Marco et all., in their study which estimated the prevalence of depression as 18.8%.

CONCLUSION
Anxiety and depression are associated with COPD. Prevalence of anxiety increases with severity of COPD.

Hamilton score is a simple questionnaire to administer, which shows great impact to know the severity of anxiety and depression.

All COPD patients, irrespective of the GOLD category should be screened for psychiatric symptoms and early initiation of specific therapies like Rehabilitation, Cognitive behavioural therapy may be beneficial for quality of life along with routine treatment.

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