Assessment of Anxiety and Depression Among Patients with COPD

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Abstract

Background: The aim is to assess anxiety and depression among patients with COPD. **Subjects and Methods :** One hundred five adult patients in age ranged 20-60 years of either sex diagnosed with COPD were included. Parameters such as name age, smoking habit, history of alcoholism, duration of treatment, type of family, education and occupation etc. was recorded. The level of anxiety and depression among patients was recorded. **Results:** Out of 105 patients of COPD, males constituted 45 (39.2%) and females 65 (61.8%). The level of anxiety was low in 68, moderate in 25 and severe in 12. Depression was found to be normal in 23, mild in 30, borderline in 11, moderate in 25, severe in 6 and extreme in 5 patients. A significant difference was observed (P< 0.05). 52% literate and 68% illiterate had low and 48% illiterate and 32% illiterate had moderate/ severe anxiety. 66% married and 45% unmarried and 34% married and 55% unmarried had low and moderate/ severe anxiety respectively. 65% employed and 62% unemployed had low, 35% employed and 38% unemployed had moderate/ severe anxiety. 80% smokers had low and 20% had moderate/ severe anxiety respectively. 61% alcoholics had low and 39% had moderate/ severe anxiety respectively. >5 years of treatment was seen in 47% having low and 53% had moderate/ severe anxiety respectively. A significant difference was observed (P< 0.05). A significant difference was observed in education, smoking and duration of treatment in patients of COPD having depression (P< 0.05). **Conclusion:** Most of the COPD patients had moderate anxiety and depression.

Keywords: Anxiety, COPD, Depression.

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Introduction

Anxiety and depression are important co-morbid conditions, often under-diagnosed, that influences quality of life and prognosis in chronic obstructive pulmonary disease (COPD). The Global initiative for chronic obstructive lung disease, GOLD has given incredible stress on assessment of these disease conditions as a part of appraisal of stable COPD patients. Depression and anxiety symptoms are related to age, gender, poor quality of life and more severe symptoms. [1]

The inflammation in COPD is not only confined to the lungs but rather is believed to have systemic spill-over leading to extrapulmonary effects. The extrapulmonary effects or systemic manifestations include cardiovascular disease, osteoporosis, diabetes, lung cancer, weight loss as well as psychiatric comorbidities. [2] There is increasing evidence that depression and anxiety are important comorbidities in COPD and may influence various facets of COPD and may have bidirectional cause and effect relationship. [3] COPD has a major effect on the lives of the sufferers, which leads to an increased length of hospital stay and a greater risk of

mortality and also a major factor that affect the ability to cope and self-manage the condition. [4] Poor health status is significantly associated with increased risks of anxiety and depression. Early assessment and multi-model treatment of anxiety and depression should be part of management in COPD. [5] Considering this, we attempted this study to determine the anxiety and depression among patients with COPD.

Subjects and Methods

After considering the utility of the study and obtaining approval from ethical review committee of the institute, we selected one hundred five adult patients in age ranged 20-60 years of either sex diagnosed with COPD. Inclusion criteria was patients within specified ae group, ratio of forced expiratory volume in one second and forced vital capacity (FEV1/FVC) < 70% (GOLD criteria), history of smoking. The exclusion criteria were patient having other co-morbidities such as psychiatric disorders patient, asthma, pulmonary tuberculosis, congestive cardiac failure, interstitial

lung disease and patients on beta- blockers and antipsychotics.

Parameters such as name age, smoking habit, history of alcoholism, duration of treatment, type of family, education and occupation etc. was recorded. The level of anxiety and depression among patients was recorded. The results were compiled and subjected for statistical analysis using Mann Whitney U test. P value less than 0.05 was set significant.

Results

Table 1: Patients distribution

Total- 105		
Gender	Males	Females
Number (%)	45 (39.2%)	65 (61.8%)

Out of 105 patients of COPD, males constituted 45 (39.2%) and females 65 (61.8%) [Table 1].

Table 2: Level of anxiety and depression among COPD patients

Parameters	Variables	Number	P value
Anxiety	Low	68	<0.05
	Moderate	25	
	severe	12	
Depression	Normal	23	<0.05
	Mild	30	
	Borderline	11	
	moderate	25	
	Severe	6	
	extreme	5	

The level of anxiety was low in 68, moderate in 25 and severe in 12. Depression was found to be normal in 23, mild in 30, borderline in 11, moderate in 25, severe in 6 and extreme in 5 patients. A significant difference was observed (P< 0.05) [Table 2, Figure 1].

52% literate and 68% illiterate had low and 48% illiterate and 32% illiterate had moderate/ severe anxiety. 66% married and 45% unmarried and 34% married and 55% unmarried had low and moderate/ severe anxiety respectively. 65% employed and 62% unemployed had low, 35% employed and 38% unemployed had moderate/ severe anxiety. 80% smokers had low and 20% had moderate/ severe anxiety respectively. 61% alcoholics had low and 39% had moderate/ severe anxiety respectively. >5 years of treatment was seen in 47% having low and 53% had moderate/ severe anxiety respectively. A significant difference was observed (P< 0.05) [Table 3, Figure 2].
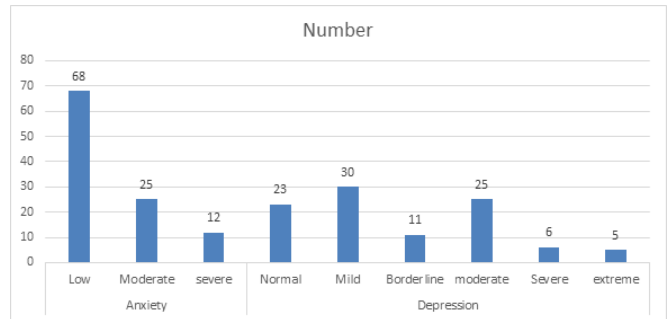

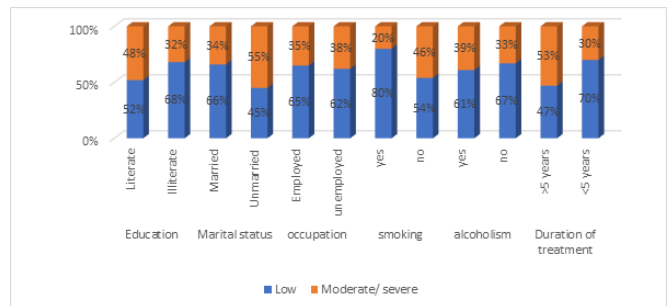**Figure 1: Level of anxiety and depression among COPD patients**

Figure 2: ?

A significant difference was observed in education, smoking and duration of treatment in patients of COPD having depression (P< 0.05) [Table 4].

Discussion

There is increasing evidence that depression and anxiety are important comorbidities in COPD and may influence various facets of COPD and may have bidirectional cause and effect relationship. There is a paucity of studies regarding both the burden as well as the association of these psychiatric comorbidities in COPD, especially in developing countries where a lack of social support mechanism for the elderly may only aggravate the problem.[6]

COPD patients show symptoms of depression and anxiety more frequently than the general population, and it seems that both entities have an impact on prognosis, as physical activity is reduced, dyspnea is worsened, the frequency of exacerbations increase and so does the use of health resources.[7] Moreover, depression and anxiety interfere with other risk factors, such as tobacco use, and, in general, they impair patients' quality of life.[8] However, the debate on the impact of anxiety and depression on the prognosis of COPD patients continues, as some authors report worse

Table 3: Anxiety and other parameters

Parameters	Variables	Low	Moderate/ severe	P value
Education	Literate	52%	48%	<0.05
	Illiterate	68%	32%	
Marital status	Married	66%	34%	>0.05
	Unmarried	45%	55%	
occupation	Employed	65%	35%	>0.05
	unemployed	62%	38%	
smoking	yes	80%	20%	<0.05
	no	54%	46%	
alcoholism	yes	61%	39%	>0.05
	no	67%	33%	
Duration of treatment	>5 years	47%	53%	<0.05
	<5 years	70%	30%	

Table 4: Depression and other parameters

Parameters	Variables	No	Yes	P value
Education	Literate	23%	77%	<0.05
	Illiterate	20%	80%	
Marital status	Married	21%	79%	>0.05
	Unmarried	24%	76%	
occupation	Employed	25%	75%	>0.05
	unemployed	18%	82%	
smoking	yes	15%	85%	<0.05
	no	22%	78%	
alcoholism	yes	14%	86%	>0.05
	no	35%	65%	
Duration of treatment	>5 years	21%	79%	<0.05
	<5 years	22%	78%	

disease progression, while other researchers have not observed any association between anxiety or depression and worse prognosis of acute exacerbations of COPD.[9] We attempted this study to determine the anxiety and depression among patients with COPD.

Our results showed that out of 105 patients of COPD, males constituted 45 (39.2%) and females 65 (61.8%). Sandra et al,[10] established the prevalence of depression and anxiety in patients admitted for Acute Exacerbation of COPD (AECOPD) and determine their influence on COPD prognosis. 288 patients (46.8%) were included, mean age was 73.7 years, 84.7% were male. 67.7% patients were diagnosed with probable depression, and depression was established in 41.7%; anxiety was probable in 68.2% and established in 35.4%. 60.4% of all patients showed symptoms of both anxiety and depression. Multivariate analysis relates

established depression with a higher risk of late readmission and a lower risk of mortality at 18 months.

Our results showed that the level of anxiety was low in 68, moderate in 25 and severe in 12. Depression was found to be normal in 23, mild in 30, borderline in 11, moderate in 25, severe in 6 and extreme in 5 patients. Dua et al,[11] in their study one hundred and twenty-eight patients of COPD were evaluated by physician-administered questionnaire for symptom scores by Modified Medical Research Council Scale (mMRC) for dyspnea, Hindi-validated Clinical COPD Questionnaire (CCQ), and for functional capacity by 6-min walk distance (6MWD) according to the American Thoracic Society Guidelines. All patients also underwent spirometric evaluation, and postbronchodilator forced expiratory volume in 1 s (FEV1), BODE index (body mass index [BMI], postbronchodilator FEV1, mMRC for dyspnea, 6MWD) and

a history of hospitalization/exacerbations over the past 1 year was also obtained. Comparison of symptom scores, functional capacity in terms of 6MWD, history of exacerbations or hospitalizations over preceding 1 year and BODE index between patients of COPD with or without anxiety and/or depression was done. COPD patients with comorbid anxiety and/or depression had higher dyspnea scores and CCQ scores though the proportion of current smokers, BMI, history of hospitalization over the past 1 year, FEV1, and BODE index was not statistically significant between the two groups.

Our results showed that 52% literate and 68% illiterate had low and 48% illiterate and 32% illiterate had moderate/ severe anxiety. 66% married and 45% unmarried and 34% married and 55% unmarried had low and moderate/ severe anxiety respectively. 65% employed and 62% unemployed had low, 35% employed and 38% unemployed had moderate/ severe anxiety. 80% smokers had low and 20% had moderate/ severe anxiety respectively. 61% alcoholics had low and 39% had moderate/ severe anxiety respectively. >5 years of treatment was seen in 47% having low and 53% had moderate/ severe anxiety respectively. A significant difference was observed in education, smoking and duration of treatment in patients of COPD having depression. Biswas et al,[12] enrolled 75 patients diagnosed with stable COPD and were interviewed using validated questionnaire for depression (Hamilton depression rating scale, HAM-D) and anxiety (State Trait Anxiety Inventory, STAI). The functional exercise capacity of the patient was assessed by six-minute walk test. Among 75 stable COPD patients (68 male, 7 female), majority (32 out of 75) had both depression and anxiety, while only anxiety or depression was present in 9 each. The patients with depression had no significant difference in six-minute walk distance, change in heart rate and respiratory rate (p = 0.4186, 0.219 and 0.41 respectively) as compared to those without depression, but were found to be more dyspnoeic at the end of the test. There was also no significant difference in walk distance in patients with high STAI score as compared to those with low STAI score.

Conclusion

Most of the COPD patients had moderate anxiety and depression.

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