

ORIGINAL RESEARCH

**A STUDY ON ASSOCIATION OF DEPRESSION IN CHRONIC OBSTRUCTIVE PULMONARY DISEASE PATIENTS HAVING SMOKING HABIT****Jilu Ji Merin¹, Athira PC¹, Sujith Varma^{2*}**¹ Pharm D, National College of Pharmacy, Manassery, Kozhikode - 673602, Kerala, India² Department of Pharmaceutics, National College of Pharmacy, Manassery, Kozhikode - 673602, Kerala, India**Submitted on: 28.06.17; Revised on: 30.07.17; Accepted on: 04.08.17****ABSTRACT**

Background: Depression is common in Chronic Obstructive Pulmonary Disease (COPD), patients and it's progression are usually seen in patients with smoking habit.

Methods: The study was designed by assessing the smoking habits of 100 patients diagnosed with COPD during their outpatient visit or during hospitalization. The depression on the study population was assessed by using Hamilton rating scale for depression(HAM-D).

Result: In the present study, majority of COPD patients were ex-smokers. The results have shown that the depressive symptoms were found to be more in ex-smokers.

Conclusion: Depression is common among the COPD patients. The results have concluded that patient age and smoking habit had a strong influence in the progression of COPD condition.

KEYWORDS: Smoking, COPD, Depression

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Indian Research Journal of Pharmacy and Science; 13(2017)1045-1050;
Journal Home Page: <https://www.irjps.in>
DOI: 10.21276/irjps.2017.4.2.13

INTRODUCTION

Smoking habit is found to be associated with mental disorders like anxiety, depression and stress disorders [1, 2, 3]. Epidemiological studies have found that, patients with mental disorder are more likely to smoke when compared to general population [4,5]. Smoking is a risk factor, which is shared by depression and COPD [6,7]. The smoking cessation is the only evidence based treatment provided to slow down the development of disease by preventing further deterioration in the lung function. Smoking cessation is difficult to be followed for majority of patients, especially when attempt to stop the smoking are being hampered by the coexistence of psychiatric disorder. [8,9]

One of the primary obstacles in smoking cessation is nicotine withdrawal symptoms. [10,11] The advent of nicotine replacement therapy (e.g., nicotine gum, the nicotine patch, etc.) have helped many patients in managing the withdrawal symptoms. [12] The, smoking rates remain high in individuals who desire regulation of conditions like anxiety and depression. [13,14] The pharmacologically active component nicotine in cigarette smoking, have a direct and indirect effects on the neurotransmitters which are involved in major depression [15]. Presently in the United States, lower educational attainment are associated with a greater prevalence of smoking and lower educational levels are also associated with greater number of depressive symptoms. [16,17]

MATERIAL AND METHODS

The prospective observational study was carried out in patients with COPD during their routine outpatient visit and during hospital admission between Jan 2016 to June 2016. The patients are recruited on the basis of a written informed consent. The study was approved by institutional ethics committee on 14th January 2016 (IEC No.023). The inclusion criteria for the present study include.

- Age more than 18 yrs
- COPD patients with mild to severe category

The patients who are mentally retarded, pregnant woman and lactating woman were excluded from the study. During the first meeting with the patient, the COPD grade was assessed using modified Medical Research Council (mMRC) scale and also by assessing the smoking habit. From the data collected, we could classify the patients in to groups such as nonsmokers, ex-smokers, current smokers. The ex-smokers can be defined as the individuals who smoke more than 100 cigarettes in their life time and should have quit smoking at least one year before and never smoked thereafter. National survey has defined the current smoker as an individual who have smoked at least 100 cigarettes in their life time and who, at the time of survey have smoked either everyday or occasionally. Non-smokers are the individual who never smoked in their lifetime. Passive smoking is defined as inhalation of smoke by persons other than the intended active smokers. In the present study, we have statistically correlate the association of smoking habit with severity of COPD and severity of depression. Patients with depressive symptoms were assessed by Ham D scale. The Ham D scale consist of 17 questionnaire. Depending on the total score from Ham D the severity of the depression can be classified as Normal (0-7), Mild (8-13), Moderate (14-18), Severe (19-22) and very severe (≥ 23).

STATISTICAL ANALYSIS

The statistical analysis was done using statistical package for the social sciences (SPSS) version 20. The P value < 0.05 was considered significant. The association was found by using correlation coefficient and chi-square test.

RESULT

100 stable subjects with COPD were studied. Out of 100 patients, 96 subjects were men and 4 were female. Categorization of patients based on their smoking habit is given in the following table:

Smoking habits	Frequency	Percent
Non smoker	5	5.0
Ex-smoker	70	70.0
Current smoker	25	25.0
Total	100	100.0

Table: 1 Smoking history of the study population

In the present study population majority of patients were ex-smokers, smokers constitute 25% and 5% of patients were non-smokers.

Association of smoking with severity of COPD was determined statistically by using chi-square test and it was graphically represented in (Fig.1)

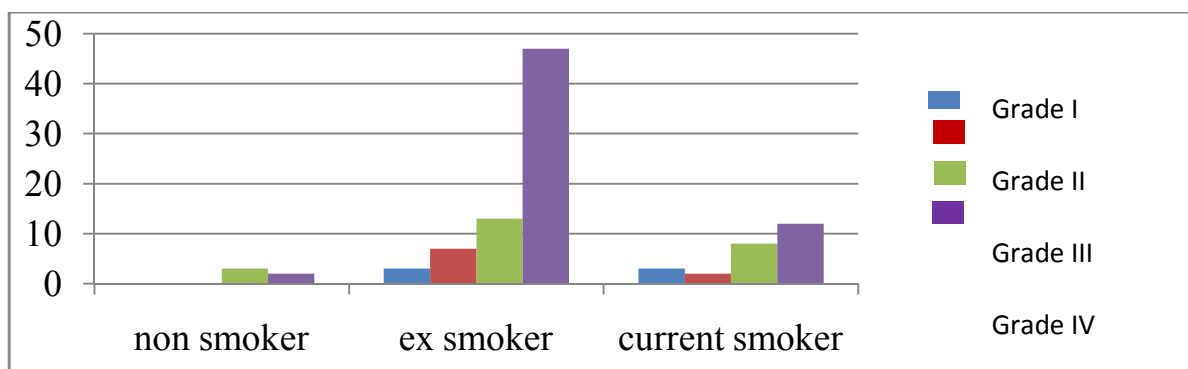


Figure: 1 Association of smoking with severity of COPD

The results have shown that high values of grade IV COPD are seen in ex-smokers as well as in current smokers. The results have indicated that

the occurrence and severity of COPD were more in ex-smokers than in current smokers.

		Grade of COPD (%)			
		I	II	III	IV
SMOKING HABIT	Non smoker	0	0	12.5	33.3
	Ex- smoker	50.	77.8	54.2	77
	Current smoker	50	22.2	33.3	19.7

Table: 2 Association of smoking with severity of COPD

The association of smoking and depression was determined. The high elevated values of mild depression were seen in ex-smokers than current

smokers and non-smokers. Moderate, severe and very severe levels of depression were seen mostly in ex-smokers.

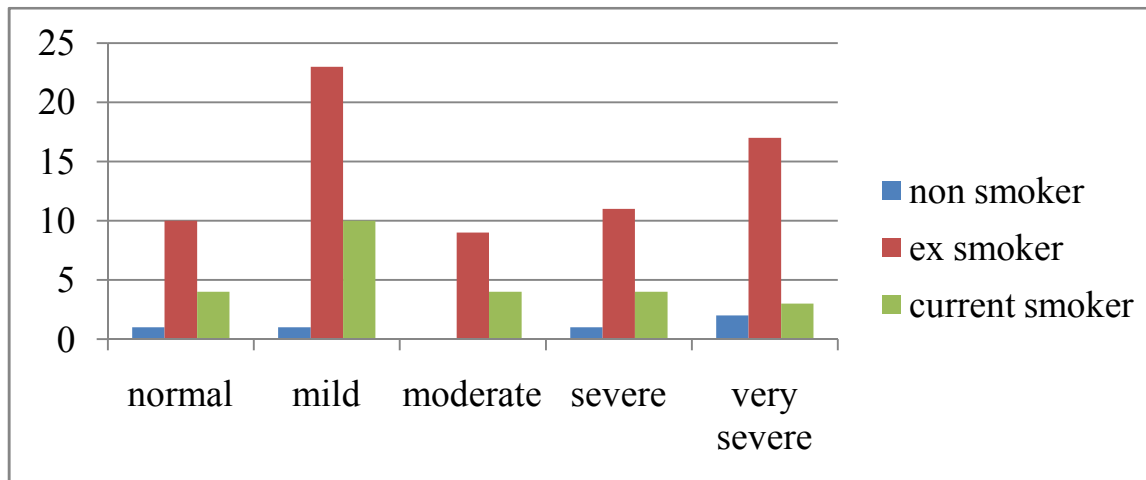


Figure: 2 Association of smoking with depression

		HAMD SCORE				
		Normal	Mild	Moderate	Severe	Very severe
SMOKING HABIT	Non smoker	6.7%	2.9%	0.0%	6.3%	9.1%
	Ex- smoker	66.7%	67.6%	69.2%	68.8%	77.3%
	Current smoker	26.7%	29.4%	30.8%	25.0%	13.6%

Table: 3 Association of smoking with depression

The association between COPD and depression were determined and found that the p value have a

significant influence on the severity of COPD condition due to depression.

Variables		Correlation coefficient	P value
HAMD_FIRST	Grade of COPD	0.398	0.0001

Table: 4 relationship of depression with COPD

DISCUSSION AND CONCLUSION

The relationship between depression and COPD with smoking habit was statistically tested by pierson's correlation coefficient and chi-square test. The study results have shown that ex-smokers have higher values of Ham D score than current smokers. The smaller values of Ham D score were seen in non-smokers. In the present study, the severity of depression in each stage of COPD condition was less in current smokers and high in ex-smokers. The results indicate the relationship of smoking habit with depression. The depression is commonly seen in ex-smokers. The findings suggest that in current smokers the chance of developing depression are less and may be due to the nicotine dependence. Smoking and COPD condition have a positive relationship. The

occurrence of COPD and its severity depends upon a person to smoke.

The limitations of the present study need to be mentioned. The data collection was based on patient interviewing, so chance of occurrence of bias are high. Some patients hesitated to comment on their smoking habits. Depression is common in COPD patients and found that, there is inter relationship exist between COPD, smoking and depression.

ACKNOWLEDGEMENT

No external funding was obtained for the study.

AUTHORS CONTRIBUTION

All the authors have contributed equally to the manuscript.

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CONFLICT OF INTEREST REPORTED: NIL ;

SOURCE OF FUNDING: NONE REPORTED