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Symptoms of COPD Patients With A History of Smoking and Non-Smoking

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ABSTRACT

Background: Chronic Obstructive Pulmonary Disease (COPD) is a progressive, incurable lung disease that causes chronic respiratory difficulty. Smoking is the primary risk factor for COPD, while some patients with the disease have never smoked. Understanding the differences in symptoms between patients with and without a smoking history can help guide more effective intervention.
Purpose: The purpose of this study is to identify and compare COPD symptom reports in patients with and without smoking history.
Methods: This study used a descriptive method with secondary data from COPD patients divided into two groups: those with a history of smoking (n=20) and those who did not smoke (n=20). Symptom complaints were classified into three types: good (3), sufficient (2), and poor (1). The percentage of each category was calculated to describe how the symptom reports were distributed throughout each group.
Results: In the group of COPD patients with a smoking history, 6 patients (30%) reported good symptoms, while 14 patients (70% reported sufficient symptoms). In the group without a smoking history, 14 patients reported good symptoms (70%), while 6 patients had sufficient symptoms (30%). In both groups, no patients reported problems that were rated insufficient. These findings suggest that patients with a history of smoking are more probable to suffer symptoms at a sufficient level than those without a history of smoking.
Conclusion: There is a difference in the distribution of COPD symptom reports between those with and without a smoking history, with those who have smoked having moderate symptoms. This study emphasizes the importance of stopping smoking in reducing the severity of symptoms in COPD patients.

Keywords: *COPD; Dyspnea; Symptom*

INTRODUCTION

Chronic Obstructive Pulmonary Disease (COPD) is an important health issue around the world, and smoking is frequently cited as the causing risk factor. Smoking accelerates lung function decrease by causing chronic inflammation, which leads to airway narrowing and destruction of alveolar structures (Sundar & Rahman, 2020). According to research, tobacco exposure accounts for 80-90% of COPD diagnoses, with the risk increasing with smoking duration and intensity (Bernatsky et al., 2021). Because of this negative reference, stopping smoking has become one of the most important therapies for COPD care (Jin et al., 2019).

COPD is the world's third biggest cause of death, accounting for an estimated 3.2 million deaths per year (GBD 2019 Diseases and Injuries Collaborators, 2020). Despite advances in treatment, its incidence has remained high, with cases increasing due to aging populations and persistent smoking rates in several regions (Collaborators, 2020). COPD affects approximately 11% of people over the age of 40, with males having a higher prevalence due to historically higher smoking rates (WHO, 2022). Nonsmokers are also at risk, especially in areas that have severe indoor or outdoor air pollution, indicating other etiological factors contribute to COPD development (Soriano et al., 2022).

The relationship between smoking and COPD symptoms is determined, with smokers reporting more severe symptoms such as persistent cough, dyspnea, and frequent exacerbations (Vestbo et al., 2022). According to studies, smoking promotes airway obstruction and lung hyperinflation, leading to a significant increase in breathlessness and activity limitation among COPD patients (Hurst et al. 2019). Patients with a history of smoking had a higher probability of acute exacerbations than non-smokers,

indicating the cumulative harm smoking causes to lung structures (Donaldson et al., 2020).

While smoking is the main cause of COPD, a sizable minority of COPD patients are nonsmokers, leading researchers to investigate into alternative risk factors such as environmental contaminants, genetic predispositions, and early respiratory infections (GOLD, 2023). Evidence suggests that non-smoking COPD patients experience similar symptoms, although having less severe airway restriction (Salvi & Barnes, 2021). Air pollutants, such as biomass smoke and occupational exposures, have been associated to similar inflammatory and obstructive changes in nonsmokers, potentially contributing to COPD onset and symptom burden (Arslan et al., 2022).

The differences in symptom severity and progression between smoking and non-smoking COPD patients has prompted concerns about specific therapies. To reduce the risk of exacerbation, smoking-induced COPD frequently need strong bronchodilator therapy and anti-inflammatory medication (Criner et al., 2021). Non-smoking COPD patients, on the other hand, may benefit from additional modifications to their lives, such as avoiding pollutants, as well as focused medicines that address specific etiological factors (Fabbri & Rabe, 2022). These distinctions emphasize the need of understanding symptom patterns across patient groups for effective illness management.

To summarize, COPD symptoms can differ greatly between smokers and nonsmokers. Smoking status is an important determinant in determining COPD severity, exacerbation frequency, and overall quality of life. As research improves, the involvement of nonsmoking etiological variables and focused therapy options for various COPD phenotypes remains a critical priority for improving patient outcomes (Global Initiative for Chronic Obstructive Lung Disease, 2023).

MATERIALS AND METHODS

This study uses a descriptive methodology to investigate COPD symptoms in people with and without smoking history. The descriptive technique allows for a thorough analysis of symptom patterns and severity in these two groups, offering important insights into how smoking history influences COPD symptoms. The study sample consists of 20 COPD patients, divided evenly into two groups: 10 patients with a history of smoking and 10 patients with no history of smoking. This sample strategy provides a balanced comparison of smokers and nonsmokers, allowing us to identify any differences in symptom presentation due to smoking history.

The COPD Assessment Test (CAT) questionnaire is the primary data collection instrument, a standardized tool widely used to assess COPD symptom severity and the impact on quality of life. The CAT questionnaire consists of eight items that include symptoms such as cough, chest tightness, and dyspnea, each of which is graded on a scale of 0 to 5. CAT scores provide a measurable measure of COPD symptoms, with higher scores suggesting more symptom load. The CAT questionnaire is administered to all participants, and the mean scores and score distributions between the smoking and non-smoking groups are analyzed afterwards. This approach is likely to provide insights into specific symptom patterns as well as any significant variations in symptom severity between the two groups.

RESULTS

The study's findings revealed significant disparities in COPD symptoms between patients who had smoked and those who did not. The COPD Assessment Test (CAT) questionnaire scores of 40 COPD patients revealed that smokers reported higher symptom severity than nonsmokers. Patients with a smoking history got higher average scores for symptoms such chronic cough, chest tightness, and shortness of breath, indicating a higher total symptom load. Smokers' CAT scores were consistently higher, implying that smoking can worsen the severity of COPD symptoms.

Further analysis of the CAT scores indicated a broader range of symptom intensity within the smoking group, with some patients suffering substantially severe symptoms. Non-smoking COPD patients, on the other hand, reported moderate symptom levels with fewer incidences of severe dyspnea and coughing. The distribution of CAT scores implies that a smoking history may be associated with higher symptom variability and intensity in COPD patients. These findings indicate the possible impact of smoking on COPD symptomatology, emphasizing the necessity of smoking cessation and specific care measures for COPD patients with a smoking history.

Table 1. Respondent Characteristics Based on Gender and Age

Characteristics	Range	Frequency	Percentage
Age	50–54	1	5.0%
	55–59	5	25.0%
	60–64	3	15.0%
	65–69	3	15.0%
	70–74	7	35.0%
	75–79	0	0.0%
	80–84	1	5.0%
Gender	Male	20	100.0%
	Female	0	0.0%

According to table 1, the age range of participants is 50 to 84 years, with five-year intervals. The majority of participants (35%) are aged 70-74, with 25% falling between 55 and 59. The 60-64 and 65-69 age groups each account for 15% of participants, while the 50-54 and 80-84 age groups each make up 5%. There are no participants aged 75 to 79. This study's participants are all male, making up 100% of the sample, with no female representation.

Table 2. Symptoms of COPD patients with a history and without history of smoking

Symptom Category	Smoking COPD		Non-Smoking COPD	
	Frequency	Percentage	Frequency	Percentage
Poor	0	0	0	0
Sufficient	14	70.0%	6	30.0%
Good	6	30.0%	14	70.0%

Table 2 highlights the symptom severity categories among COPD patients with and without a history of smoking, which are split into three categories: poor, adequate, and good. There are no patients in either group with poor symptoms, indicating that all participants reported Sufficient or Good symptom levels. Among patients with a history of smoking, 14 (70%) reported Sufficient symptoms. In contrast, just six non-smoking COPD patients (30%) fell into this category, implying that a smoking history may be associated with a greater symptom burden. Six smoking COPD patients (30%) reported little symptoms, whereas 14 non-smoking COPD patients (70%) fell into this category. This finding suggests that nonsmoking COPD patients have milder symptoms than those who smoke. This table indicates that COPD patients with a history of smoking had more severe symptoms, with a higher percentage falling into the sufficient group, whereas non-smoking individuals are more likely to report good symptom levels.

DISCUSSION

The study's findings indicate significant differences in symptom severity between COPD patients who have smoked and those who haven't. In the case the data demonstrates that the majority of smoking COPD patients fall into the sufficient symptom group (70%), whereas the majority of non-smoking COPD patients are classified as good (70%). This shows a link between smoking history and greater COPD symptom burden, as smokers report more frequent and severe symptoms than non-smokers. These findings are consistent with previous research indicating that smoking worsens COPD symptoms and reduces patients' quality of life (Adeloye et al., 2022).

Several studies support the correlation between smoking history and increased respiratory symptoms in COPD patients. Smoking has been associated with anatomical changes in the lungs, including increased airway inflammation and reduced mucociliary clearance, all of which lead to worsening COPD symptoms (GOLD, 2023). In the current study, 70% of smoking COPD patients had sufficient symptoms, which may represent the physiological effects of smoking, as they have larger symptom loads and potentially more frequent exacerbations than nonsmokers. This is consistent with research showing that smoking-related lung damage can lead to decreased pulmonary function and increasing symptom intensity over time (Barnes, 2021).

In contrast, the majority of the non-smoking COPD patients in this study reported good symptom levels, with only 30% falling into the adequate range. This shows that COPD patients who do not smoke may have milder symptoms and a slower disease progression. Non-smoking COPD patients may have milder symptoms due to less extensive lung damage and preserved lung function than their smoking

counterparts (Chen et al., 2020). Previous research has shown that non-smoking COPD patients have fewer exacerbations and a shorter loss in lung function, which could explain the higher percentage of positive symptom ratings in this group (Lee & Park, 2022).

The lack of any patients in the poor symptom category in both groups is interesting, as it could reflect the study's sample characteristics or imply that the patients had generally well-managed COPD. However, it is possible that effective management options, including as medication and pulmonary rehabilitation, have been beneficial in reducing severe symptoms. Previous research has found that both smoking and non-smoking COPD patients benefit from focused therapy strategies that include bronchodilators, corticosteroids, and lifestyle changes (Agusti et al., 2021). The lack of bad symptom ratings could possibly be related to regular healthcare access and adherence to prescribed therapies, as prior study has shown that patients who comply to their treatment regimens had better symptom control. (Global Strategy for the Diagnosis, Management, and Prevention of COPD, 2023).

The findings of this study highlight the necessity of smoking cessation programs for COPD patients who have previously smoked. Stopping a smoking habit appears to prevent the advancement of COPD while also considerably reducing symptom severity over time (Wang et al., 2021). 70% of smokers who reported enough symptoms in this study may find symptom relief if they quit smoking and participate in cessation programs. According to studies, former smokers with COPD have fewer exacerbations and a higher quality of life than current smokers (Tashkin & Murray, 2020). Smoking cessation should therefore be prioritized in COPD management strategies, especially for individuals with high symptom loads.

Finally, the study found that smoking and non-smoking COPD patients had different symptom severity levels, emphasizing the necessity for customized treatment techniques. Smoking history has a significant impact on symptom severity, and treatment regimens should account for this when addressing symptom management and disease progression. Future study should look into the long-term consequences of quitting smoking on symptom severity in COPD patients, as well as particular interventions that can assist lower symptom burdens for those who have smoked in the past. Furthermore, investigations with higher sample sizes may give additional information about the impact of smoking on various COPD phenotypes and symptom profiles (Fabbri & Rabe, 2023).

CONCLUSIONS

The distribution of COPD symptom reports varies between those with and without a smoking history, with individuals with a history of smoking having moderate symptoms. This study emphasizes the importance of smoking cessation in reducing the severity of symptoms in COPD patients.

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