Original Article

Health Related Quality of Life of Chronic Obstructive Pulmonary Disease Patients: Cross-Sectional Study

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Abstract

Background: Chronic obstructive pulmonary disease (COPD) is a huge worldwide health problem since it causes a lot of sickness. The global influence on millions of people increases the incidence of illness and mortality. The objective of this study was to assess the health-related quality of life of patients with chronic obstructive pulmonary disease. The present study was cross-sectional in design. This study included 50 COPD patients who visited the pulmonary outpatient departments of All India Institute of Medical Sciences (AIIMS), Deoghar. **Material and Methods:** ? **Results:** The average age of the 50 patients was 45.82 years. Most of the patients were men (60%), married (84%), had a high school education (26%), and employed (52%). Most of them (50%) live in cities and have six to ten family members (56%). 54% of them drive 13 to 23 km to our hospital, and 86% do not drink or smoke. Only 12% of patients were taking blood pressure medication, and most (62%) had normal BMIs and no other disorders (88%). According to the SF-12 Health Survey, 30% of COPD patients were in worse health than average, while 70% were in better health than normal. **Conclusion:** COPD is still a serious public health issue, even though it is becoming less common. This is especially true in countries with low sociodemographic indexes. To further lower the number of cases of COPD, a preventive program should focus on quitting smoking, improving air quality, and lowering work-related exposures.

Keywords: Health Related Quality of Life, Chronic Obstructive Pulmonary Disease Patients, COPD.

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Introduction

Chronic Obstructive Pulmonary Disease (COPD) is a major health problem around the world that causes a lot of illness. It affects millions of people around the world and causes a lot of deaths and diseases. The significant prevalence of risk factors, including smoking, and the existence of comorbidities heighten the illness burden of COPD. Additionally, COPD with comorbidities has been shown to result in elevated healthcare expenses and extended hospitalizations relative to COPD without comorbidities. In developing nations, where healthcare is hard to get and poverty is widespread, COPD is especially bad since it causes early deaths.[1] To deal with this problem, we need strong public health programs, especially in rural areas where getting to a doctor may be hard.[2]

COPD is a major health problem around the world since it causes a lot of disease and is made worse by the fact that there are so many risk factors and other diseases that go along with it. Additionally, the burden of COPD is made worse by the fact that many poor nations don't have conventional methods for diagnosing and treating chronic non-communicable respiratory disorders.[3] To lessen the burden of COPD, it is important to encourage effective public health measures, especially in rural areas that are far away from healthcare services.[4] These actions should focus on changing risky habits, such as smoking, and making it easier for people to get medical treatment so that COPD may be diagnosed and treated early. The Forum of International Respiratory Societies' study on respiratory diseases outlines methods that could help lessen the impact of these diseases and enhance respiratory health around the world.[5,6]

COPD is a debilitating respiratory disorder that has a big effect on the quality of life of people who have it. Having COPD makes breathing harder, lowers lung function, and limits physical activity. These problems can make people less independent, more socially isolated, and more reliant on others for everyday tasks. People with COPD may also feel frustrated, anxious, or depressed because of their symptoms, which include coughing, wheezing, and shortness of breath. COPD affects quality of life in more ways than just physical limits.[7,8] Living with COPD can have a big effect on your mental and emotional health. Patients frequently endure anxiety and depression concomitant with their COPD diagnosis, hence intensifying the detrimental impact on quality of life.[9] This study aim was to assess health related

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quality of life of chronic obstructed pulmonary disease patients.

Materials and Methods

This study was a cross-sectional analysis. This study included 50 COPD patients attending the pulmonary outpatient departments of the All India Institute of Medical Sciences (AIIMS), Deoghar. Individuals diagnosed with any degree of COPD were included. Patients who declined to participate in this study were excluded.

This study's data collection tools had three parts. Section I covered basic bio-demographic information, including their age, gender, education, job, where they lived, how far they lived from the hospital, and how many family members they had. Section II included personal information about the patients, such as their Body Mass Index (BMI), history of comorbid conditions, drug use, physical activity, history of COVID-19 infection, and the severity of their COPD. Section III contained the SF-12 health survey scale to measure the health-related quality of life of individuals with COPD.

We have used both descriptive and inferential statistical methods to analyze the data. The statistical analysis will be conducted using SSPS version 23.0 (SSPS Inc., Chicago, IL, USA).

Results

The average age of the 50 patients was 45.82 years. Most of the patients were men (60%), married (84%), had a high school education (26%), and had jobs (52%). Fifty percent of them lived in cities, fifty-six percent had six to ten family members, fifty-four percent lived 13 to 23 kilometers from our hospital, eighty-six percent did not smoke, and eighty-four percent did not drink alcohol. [Table 1]

Table 1: Bio-demographic of COPD patients (N=50)

S.N.	Variables	Options	Frequency	Percentage
1.	Age (Year)	Mean±SD	45.82±1.82	
2.	Gender	Male	30	60
		Female	20	40
3.	Marital Status	Married	42	84
		Unmarried	08	16
4.	Education	Uneducated	10	20
		Primary school	12	24
		Secondary school	13	26
		Graduate or above	15	30
5.	Occupation	Unemployed	15	30
		Employed	26	52
		Housewife	09	18
6.	Habitat	Rural	24	48
		Urban	25	50
		Semi-urban	01	02
7.	Number of family member	2-5 members	20	40
		6-10 members	28	56
		More than 10 members	02	04
8.	Distance from hospital facility	3 to 13 km	04	08
		13 to 23 km	27	54
		23 to 33 km	05	10
		More than 33 km	14	28
9.	Using tobacco	No	43	86
		Yes	07	14
10.	Using alcohol	No	42	84
		Yes	08	16

A large number of patients (62%) had a normal BMI, 88% had no other diseases, and just 12% were taking medication to lower their blood pressure. Most of the patients (72%) were somewhat active, had never had COVID-19 (98%), and had moderate COPD (48%). [Table 2]

Table 2: Physical variables of COPD patients

S.N.	Variables	Options	Frequency	Percentage
1.	Body Mass Index (BMI)	Less than 18.5 (Underweight)	01	02
		18.5- 24.9 (Normal)	31	62
		25-29.9 (Over weight)	15	30
		More than 30 (Obesity)	03	06
2.	Any co-morbid disease	No	44	88
		Yes	06	12
3.	Using any drugs	No	44	88
		Anti-hypertensive	06	12
4.	Physical activity	Sedentary activity	13	26
		Moderate activity	36	72
		Heavy activity	01	02
5.	History of COVID-19 infection	No	49	98
		Yes	01	02

6.	Severity of COPD disease	Mild	22	44
		Moderate	24	48
		Severe	04	08

Health-Related The SF-12 Health Survey Scale's Physical Component Summary (PCS) score showed that most COPD patients (90%) had better physical health than average. The Mental Component Summary (MSC) score showed that most COPD patients (62%) had better mental health than the general population. Ten percent of COPD patients reported poor physical health, and thirty-eight percent had poor mental health. The overall SF-12 Health Survey score showed that 70% of COPD patients were in better health than the general population, and 30% were in worse health than the general population. [Table 3].

Table 3: Health Related Quality of life of COPD patients in SF-12 Health Survey scale

Variables	Options	Frequency	Percentage
Physical Component Summary (PCS) Score (Total Score 20)	Less than 10 (Below average)	05	10
	More than 10 (Above average)	45	90
Mental Component Summary (MSC) Score (Total Score 27)	Less than 14 (Below average)	19	38
	More than 14 (Above average)	31	62
Overall SF-12 Health Survey Score (Total Score 47)	Less than 24 (Below average)	15	30
	More than 24 (Above average)	35	70

Discussion

The current cross-sectional study evaluated the health-related quality of life (HRQoL) of patients with chronic obstructive pulmonary disease (COPD) receiving treatment in a tertiary care hospital in eastern India. COPD is a long-term, worsening lung disease that is known to affect physical, mental, and social functioning greatly. The results of this study confirm that COPD continues to impact various aspects of quality of life, even in individuals with primarily mild to moderate disease severity. The mean age of participants in this study was 45.82 years, which is lower than that found in several national and global studies, indicating a higher prevalence of COPD among older populations, often above 60 years of age. Research from the Global Burden of Disease (GBD) project and several epidemiological studies indicates that COPD is more prevalent in older adults due to the cumulative exposure to risk factors, including smoking and environmental pollution.[10] The substantially younger age noted in this study may indicate early illness onset, occupational exposure, indoor air pollution, or heightened awareness and early diagnosis in tertiary care environments. The fact that 60% of the participants were men is consistent with what has been seen in earlier studies in India and other poor countries, where COPD is more common in men because they are more likely to be exposed to smoking and work-related risks.[11] But the fact that 40% of the patients were women shows that COPD is becoming more common among women, which may be due to exposure to biomass fuel and indoor air pollution, especially in rural and semi-urban areas. The SF-12 Health Survey showed that 70% of patients had a health-related quality of life (HRQoL) that was better than average, whereas 30% had a lower quality of life. COPD is often associated with lower HRQoL, but the scores in this study were better than expected because most patients had mild to moderate illness (92%), a normal BMI (62%), and few other health problems (12%). Brandl et al reported similar findings,[12] indicating that individuals with early-stage COPD and fewer comorbidities frequently exhibit superior physical functioning and perceived health status. The Physical Component Summary (PCS) scores showed that 90% of the patients had better-than-average physical health. This is different from what Sharifi et al,[13] found, which showed that COPD patients had significant physical limitations due to dyspnea, fatigue, and reduced tolerance for activity. Differences in disease severity, study population, and access to healthcare may account for the variance. The patients in this study were mostly able to walk, moderately active, and going to outpatient care, which may have made them feel better about their physical health. Conversely, the Mental Component Summary (MCS) scores indicated that 38% of patients had deteriorated mental health. This finding aligns with previous research indicating a significant prevalence of anxiety and despair in persons with COPD.[14] Psychological discomfort in COPD is associated with persistent symptoms, dread of dyspnea, activity limitation, and uncertainty about disease progression. In 2014, Pumar et al,[9] underscored that anxiety and depression are often inadequately recognized in COPD patients, while they considerably worsen quality of life and treatment outcomes. The current findings underscore the necessity for regular mental health assessments and psychosocial assistance as integral components of comprehensive COPD care. The low incidence of smoking (14%) revealed in this study is significant and contrasts with several studies where smoking is the predominant risk factor for COPD.[15] This may indicate enhanced smoking cessation initiatives, underreporting, or the influence of non-smoking-related risk factors, such as air pollution and occupational exposure. Recent studies have revealed similar findings, emphasizing the influence of environmental and occupational factors on COPD in low- and middle-income countries.[16] The results of this study align with the existing literature that demonstrates COPD negatively

impacts health-related quality of life, especially in terms of mental and emotional well-being. Nevertheless, superior HRQoL outcomes in patients with early-stage disease underscore the need for prompt diagnosis, efficient symptom management, lifestyle alterations, and patient education. Recent data,[17] suggests that combining pulmonary rehabilitation, mental health therapies, and digital health interventions may lead to better patient outcomes.

Conclusion

Even while COPD is becoming less common, it is still a big problem for public health, especially in countries with low socioeconomic indices. To further reduce the prevalence of COPD, preventive initiatives should focus on smoking cessation, improving air quality, and decreasing occupational exposures.

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Conflicts of interest

There are no conflicts of interest.

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