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Health care seeking behaviour of chronic obstructive pulmonary Disease patients: Results from a community based cross-sectional study

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Abstract

Introduction: Chronic obstructive pulmonary disease causes significant mortality and morbidity worldwide and in India. It is characterized by airflow limitation that is not fully reversible. Better health care seeking behaviour may halt the progression of disease and improve their quality of life. This study assesses health care seeking behaviour of chronic obstructive pulmonary disease and factors affecting it.
Material and methods: All 205 patients diagnosed with chronic obstructive pulmonary disease using spirometry in a large community based study were enquired about their health care seeking behaviour. Chronic lung disease severity index was used to assess the severity of symptoms. Sociodemographic data was also recorded. Factors affecting their healthcare were enquired of using a semi-structured questionnaire.
Results: Large number of patients were under diagnosed and untreated. Public sector was preferred with being asymptomatic or few symptoms and high cost being major barriers for not taking treatment. Severe symptoms, later stages of disease, lower standard of living & those living in rural areas had a significantly lower treatment seeking behaviour.
Conclusion: Chronic obstructive pulmonary disease patients were having poor health care seeking behaviour.

Keywords: Chronic obstructive pulmonary disease, healthcare seeking behaviour

Introduction

Chronic obstructive pulmonary disease (COPD) is a common, preventable, and treatable Non-Communicable Disease (NCD) characterized by persistent respiratory symptoms and airflow limitation due to abnormalities in the airway and (or) alveoli [1]. COPD causes significant mortality and morbidity worldwide and in India. COPD was estimated to be the sixth leading cause of death in 2019 [2]. As per 2017 estimates of Global Burden of Disease (GBD) study, COPD was ranked as the fifth leading cause of DALYs and the third leading cause of death in the world [3]. The GBD estimates of 2017 for India shows COPD to be the third leading cause of DALYs [3].

In a meta-analysis by Daniel *et al*. in 2021 to calculate prevalence of COPD in India, they reported an overall prevalence of 7.4% with studies reporting prevalence from as low as 2.4% to as high as 16.1% [4]. Despite this huge burden of COPD, more than 95% of patients in the community remain undiagnosed [5]. This is because most symptoms such as cough and dyspnea are ignored by the patients until they worsen and are not confirmed by spirometry [6]. This leads to under-treatment, which contributes to further increase in morbidity and mortality.

Being a not fully reversible disease better health care seeking behaviour may halt the progression of disease and improve their quality of life. Most studies done to understand health care seeking behaviour are done in hospital-based settings. We conducted this community-based study to assess health care seeking behaviour of COPD patients & to determine the factors that affect this behaviour.

Materials & Methods

This community-based study was conducted in rural & urban areas of a north Indian city. As a separate project we assessed prevalence of COPD in rural and urban areas using portable spirometer. A total of 1830 individuals, aged above 40 were included in this project and were assessed for COPD using a portable medical international research (MIR) SPIROLAB II spirometer (MIR Co., Italy). Diagnosis and staging were done on the basis of GOLD standards [7]. Spirometry was conducted as per the American Thoracic Society standards [8]. Of 1830 individuals 205 were diagnosed with COPD, a prevalence of 11.2%.

These 205 individuals provided us an opportunity to assess their health care seeking behaviour in a community-based setting. Using a pre-structured questionnaire sociodemographic information was collected from every patient, which included age, sex, education, socioeconomic status, occupation, and area of residence (rural or urban). Socioeconomic status was assessed using standard of living index (SLI) [9].

The chronic lung disease (CLD) severity index was used to quantify respiratory symptoms [10]. It's a short six-item questionnaire, which evaluates dyspnea, wheezing and productive cough. Raw scores were added and transformed to a scale from 0 (normal) to 100 (most severe). The Medical Research Council (MRC) five-point scale for breathlessness was used to assess dyspnea [11].

All of them were enquired whether they have heard the term COPD, are seeking treatment or not, from where are they seeking treatment and why. Date entry and analysis was done using SPSS 20. Chi square test was used for statical analysis. *P* value of < 0.05 was considered statistically significant.

Results

Demographic & clinical profile of study participants is depicted in table 1. Mean age of COPD patients was 63.4 years. Out of 205 cases of COPD 146 (71.2%) were males, 127 (61.9%) were residing in rural areas, 159 (77.6%) were illiterate with mean duration of illness being 3.4 years.

Clinical characteristics depicted mean CLD severity index of 31.9 with mean MRC dyspnea scale of 2.7. Spirometry showed that 57 (27.8%) were having GOLD stage I of COPD with 21 (10.2%) having stage IV COPD.

Of 205 cases only 120 (58.5%) had been previously diagnosed to be suffering from a chronic respiratory disease (Figure 1). Of these 120 only three of them knew the name of disease to be COPD. All of these were post graduates. Treatment was being taken by 119 (58.0%) of patients at the time of interview (Figure 2).

Place from where treatment was being sought is shown in table 2. Public sector was preferred for treatment but only 27(22.7%) were approaching medical college or district hospital for treatment. Many of them (35.3%) were also taking service of private practitioners.

Reasons for choosing a particular health facility is mentioned in Table 3. Good service (40.3%) and low cost (30.3%) were major reasons for choosing a health facility. Those who were not taking treatment

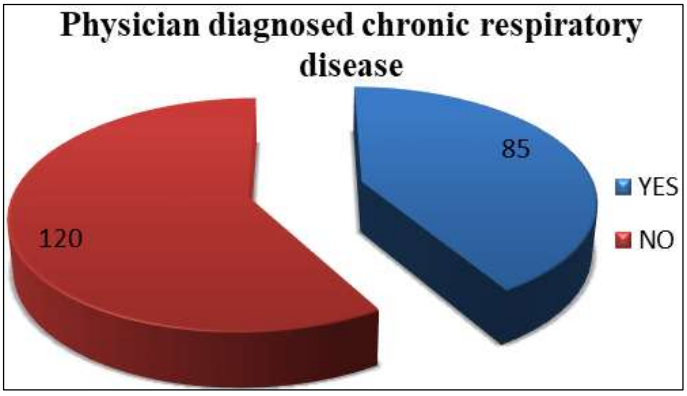
were enquired about major reason for same. Results are shown in table 4. Being asymptomatic or with very few symptoms (39.5%), high cost of treatment (22.1%) & considering symptoms to be a normal consequence of ageing (12.8%) were major reasons for not seeking treatment.

Factors which determine whether a patient is taking treatment or not were assessed (Table 5. Severe stages of COPD, more severe symptoms, a higher SLI & those residing in urban areas were utilizing health care in a statistically significant manner than their counterparts.

Table 1: Demographic & Clinical profile of study subjects

Characteristic		Value*
Age (mean ± SD in years)		63.4±8.6
Sex	Male	146 (71.2)
	Female	59 (28.8)
Area of Residence	Rural	127 (61.9)
	Urban	78 (38.1)
Education	Illiterate	159 (77.6)
	Up to Primary	25 (12.2)
	High School	13 (6.3)
	Intermediate & above	8 (3.9)
Religion	Hinduism	156 (76.1)
	Islam	49 (23.9)
Standard of Living	Low	78 (38.0)
	Medium	80 (39.0)
	High	47 (23.0)
Duration of illness (mean ± SD)		3.4±2.8
CLD † severity index (mean ± SD)		31.9±15.2
MRC dyspnea scale (mean ± SD)		2.7±1.8
Stage of COPD	I	57 (27.8)
	II	66 (32.2)
	III	61 (29.8)
	IV	21 (10.2)

*****Figures in parenthesis denote percentages. SD: Standard Deviation, †CLD: Chronic Lund Disease severity index, MRC: Medical Research Council.



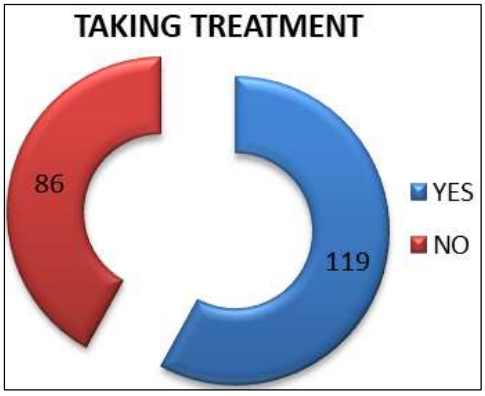


Fig 1: Under diagnosis of COPD **Fig 2:** Treatment seeking behaviour of COPD patients

Table 2: Place of treatment of COPD patients

Place where treatment is sought from	n(%)
Public sector (Medical college & District Hospital)	27 (22.7)
Public sector (CHC & PHC)	19 (16.0)
Private practitioner	42 (35.3)

Unregistered medical practitioner	21 (17.6)
AYUSH	8 (6.7)
Others	2(1.7)

Table 3: Reason for choosing the health facility

Reason for choosing the health facility	n(%)
Good service	48 (40.3)
Low Cost	36 (30.3)
Nearest health facility	22 (18.5)
Family advice	8 (6.7)
Others	5 (4.2)

Table 4: Reason for not seeking health care

Reason for not seeking health care	n(%)
No or few symptoms	34 (39.5)
High Cost	19 (22.1)
Symptoms are normal consequence of ageing	11 (12.8)
Long distance of health facility	10 (11.6)
Long duration of treatment	8 (9.3)
Family not taking for treatment	4 (4.7)

Table 5: Factors affecting health care seeking behaviour

		Taking treatment	Not taking treatment	*p* value
Stage of COPD	I	18 (31.6)	39 (68.4)	<0.001
	II	37 (56)	29 (44)	
	III	45 (73.7)	16 (26.3)	
	IV	19 (90.4)	2 (9.6)	
CLD index	≥ 50	74 (83.2)	15 (16.8)	<0.001
	<50	45 (38.8)	71 (61.2)	
Education	Illiterate	87 (54.7)	72 (45.3)	0.34
	Up to Primary	17 (68)	08 (32)	
	High School	09 (69.2)	04 (30.8)	
	Intermediate & above	06 (75)	02 (25)	
Gender	Male	86 (58.9)	60 (41.1)	0.69
	Female	33 (55.9)	26 (44.1)	
SLI	Low	38 (48.7)	40 (51.3)	<0.01
	Medium	45 (56.2)	35 (43.8)	
	High	36 (76.5)	11 (23.5)	
Area of Residence	Rural	61 (48)	66 (52)	<0.001
	Urban	58 (74.3)	20 (25.7)	

Discussion

The present study was conducted to assess health care seeking behaviour and factors affecting it in a north Indian district. Only 120 (58.5%) out of the total 205 cases had been previously diagnosed with some chronic respiratory disease by a physician. Rest all were not even diagnosed with the disease. The most basic knowledge that a person can have about a disease is that the person with the disease knows that he is suffering from the disease. Only three of these knew the name of disease to be COPD. Only 48.3% of spirometry-diagnosed COPD individuals had a previous physician diagnosis of COPD, indicating a high rate of under-diagnosis in the study by Zachariades *et al*. from Cyprus [12]. Underdiagnosis of COPD have been reported by other authors too [13, 14].

Large proportion of patients were not taking any treatment. Those seeking treatment preferred public health sector. But many of those who preferred public sector were going to PHC or CHC for treatment. PHC's & CHC's don't have spirometry facilities for diagnosis nor do they have proper drugs for treatment. Public health sector in India does not provide for proper diagnosis and treatment except at tertiary or secondary centers. Many of them were also approaching private practitioners for treatment. This was different in a study conducted in West Bengal where more COPD patients visited private providers and only one-fifth visited government providers [15]. In a study in Delhi the proportion of COPD patients preferring government facilities was 67.2% [16]. Only 6.7% of our study participants were using any of traditional Indian system of medicine. A study in Bangladesh also found that alternate medicine systems (homeopathy, Ayurveda, Unani) were rarely consulted [17]. However, a study in Delhi had 41% of the patients on home remedies and 48% of them on medical treatment [16].

Reason for choosing a particular health facility was mostly quality of service and affordability in terms of cost. This is where public health sector can play a major role as they can provide low-cost good quality service. Being asymptomatic/few symptoms and high cost were the major reasons for those not taking treatment.

On assessing for factors which impacted healthcare seeking behaviour we observed that majority of early stages of COPD patients were not taking any treatment while majority of those with severe stages were on treatment. This was a very obvious findings as later stages generally have severe symptoms forcing the patient towards treatment. This was ascertained on noticing that those with higher CLD severity index scores were more likely to be on treatment.

Those with better SLI were on treatment in significantly higher proportions. As COPD is chronic disease requiring lifelong treatment, better economic conditions make it more affordable to treat. Other authors have also reported similar findings [16, 17]. Those residing in urban areas were seeking healthcare in significantly higher proportions as compared to patients from rural areas. Education and gender was not found to have a significant impact on their behaviour. This may be because very high number (77.6%) of study participants were illiterates and only eight with education levels of intermediate and above.

Conclusion & Recommendation

A large number of COPD patients were not previously diagnosed and not on treatment. Most of these were those in earlier stages of disease with no or few symptoms. As COPD is a progressive and not completely reversible disease early healthcare seeking is essential to maintain a good quality of life. Proper information, education & communication activities with availability of spirometry and treatment facilities at peripheral healthcare centers as PHC & CHC may play a major role in this regard.

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Conflicts of interest

There are no conflicts of interest.

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