

## **Assessment of Sociodemographic Status of COPD Patients Admitted in a Tertiary Hospital**

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### **ABSTRACT:**

**Introduction:** Chronic obstructive pulmonary disease (COPD) is a preventable disease but there is not yet a cure, and responsible for early mortality, high death rates and significant cost to health systems. Not only in Bangladesh but also around the globe, the incidence of COPD is increasing and becoming an important cause of morbidity and mortality. Sociodemographic status is very influential for its aetiopathogenesis, disease progression, acute exacerbation, need for rescue therapy, management and prognosis of disease. So by assessing and observing the socioeconomic status, it is possible to improve the quality of life as well as the reduction of mortality and morbidity of COPD patients. **Methods:** A cross-sectional observational study was conducted in Faridpur Medical College Hospital (FMCH) over 6 months. Sample size was 100 and all were above 40 years of age of both gender. **Results:** The maximum (34%) were in the age group of 51-60 years, next 28% were in 61-70 years group and 12% were above 70 years. The mean  $\pm$  SD age was (58.13  $\pm$  9.96) years. Male were 84% of study population; male and female ratio was 5.25:1. The largest number were farmers (39%), then 22% were daily workers, 10% were businessmen, 9% were service holders and most of the female respondents were housewives. Maximum patients (42%) lived in villages, 30% in district and 28% in thana. Regarding income- 60% respondents earn between 10,000 to 14,999 Tk per month, 22% earn 15000 to 20,000, 10% earn more than 20,000 and 8% were below 10,000. In this study 91% patients were smoker and most of them were male. These factors related to sociodemographic status have an important influence for disease course and outcome. **Conclusions:** Smoking habits, poor socioeconomic condition, increasing age and use of biomass fuels for cooking in females, are important predisposing factors for COPD in our country. **Key Words:** COPD, Sociodemographic status, Smoking.

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### **INTRODUCTION:**

COPD is defined as a preventable and treatable disease characterized by persistent airflow limitation that is usually progressive and associated with an enhanced chronic inflammatory response in the airways and lungs to noxious particles or gases. The prevalence of COPD is directly related to the prevalence of risk factors in the community, such as tobacco smoking, coal dust exposure or the use of biomass fuels, and to the age of the population being studied. Those with the most severe disease bear the greatest personal impact of the condition and contribute to its significant social and economic consequences on the society. It is predicted that, by 2030, COPD will represent the seventh leading

cause of disability and fourth most common cause of death worldwide.<sup>1</sup> Not only a leading cause of death, following an acute exacerbation of COPD, majority of the patients experience a temporary or permanent decrease in the quality of life. Moreover more than half of the patients discharged, often require re-admission in subsequent six months.<sup>2</sup> The life of people with a chronic disease changes dramatically and leads to significant deterioration in its quality.<sup>3</sup> Urbanization, social class (low socioeconomic status), occupational exposure (coal, silica etc), air pollution, infection (adenovirus, HIV) also play a part in etiology.<sup>1,4</sup> Socioeconomic status, whether measured by education, income, or other indices of social class, has long been known

to be associated with mortality from different diseases.<sup>5</sup>

### METHODS AND MATERIALS:

This cross-sectional observational study was done in the department of Medicine and Respiratory medicine in FMCH, Faridpur from June 2015 to November 2015. Clinically diagnosed cases of COPD patients above 40 years of both gender who were admitted in the department of Medicine and Respiratory medicine of FMCH, were included in this study. Patients with renal failure, congestive cardiac failure, liver failure and those who were not willing to give consent, were excluded from study. Before the study informed consent was taken from the patient or the attendant and aim of the study was explained clearly. All the data that were collected, then were checked, verified and analyzed systematically.

### RESULTS:

In the study, maximum numbers of patients (34%) were in the age group of 51-60 years. The age of the youngest patient was 40 years and that of eldest patient was 80 years (Table-1).

**Table 1: Age distribution of patients.**

Age (years)	Number of patients (n=100)	Percentage (%)	Mean $\pm$ SD
40-50	26	26	58.13 $\pm$ 9.96
51-60	34	34	
61-70	28	28	
>70	12	12	

Our study showed, 84% cases were male and 16% were female. Male and female ratio was 5.25:1.

Regarding occupation, the largest number (39%) of respondents was farmers. (Table-2).

**Table-2: Distribution of patients according to occupation category.**

Occupation	Number of patients(n=100)	Percentage (%)
Farmer	39	39
Daily worker	22	22
Businessman	10	10
Service holder	9	9
Housewife	14	14
Others	6	6

Regarding residence, the highest number of patients (42%) lived in villages (union), followed by 30% were in district town and 28% were in thana.

For the assessment of economic status, information regarding monthly income (in taka) was collected from respondents. (Table- 3).

**Table- 3: Distribution of patients according to monthly income.**

Monthly income (Taka)	Number of patients(n=100)	Percentage (%)
< 10,000	8	8%
10,000 to 14,999	60	60%
15,000 to 20,000	22	22%
> 20,000	10	10%

Smoking is the prime cause of COPD. So assessment of smoking status was evaluated and included in the study. That showed, almost all (91%) patients were smoker that comprised 82% males and 9% females. Table- 4 showed the smoking status including their gender distribution.

**Table-4: Distribution of patients smoking status with gender variation.**

Smoking status	Total(n=100)	Male(84)	Female(16)
Smokers	91(91%)	82	9
Nonsmokers	9(9%)	2	7

## DISCUSSION:

COPD should be suspected in any patient over the age of 40 years who presents with symptoms of chronic cough and/or breathlessness.<sup>1</sup>In this study respondent's age range was 40-80 years and mean age were (58.13 ± 9.96) years. This is similar to the study of Das P, whose COPD patients were in the age range of 40-78 years and mean age was 62.22 ± 12.45 years.<sup>6</sup> In another two studies by OA Nascimento and Kaylon Bhowmic et al. showed, mean age were 59.7±11.6 and 59.37±11.37 years respectively.<sup>7,8</sup> These were consistent with our study. In our study, the maximum number (34%) of patients were in the age group of 51-60 years. But the study by Kaylon Bhowmic et al. showed, highest number (36%) of patient's age was 65 years and above.<sup>8</sup> Similarly Joanna Rosińczuk et al. showed the largest (38%) number was in 61–70 years and 30% was in 51–60 years of age group.<sup>9</sup> Here comparison of studies revealed that, the highest number belonged to an earlier age group in our study than others. Early establishment of smoking habit and easy availability of smoking materials (cigarette, bidis) in the society may be a possible explanation.

In our study male respondents were predominant, and that was 84%. Male dominated gender distribution was also observed in the study by Kaylon Bhowmic in India, that showed male were 99.1%.<sup>8</sup> Again, in our study male and female ratio was 5.25:1. Another study by Das P also showed male respondents were more, but male and female ratio was 47:17. This ratio is almost half of our study result.<sup>6</sup> The male predominated gender distribution was consistent with our study but gender ratio were different among studies. On the other hand, a study was done in Brazil by O. A. Nascimento et al. in which male were 50.7% and female were 49.3%; that means near equal gender distribution.<sup>7</sup> This

findings was inconsistent with our study and may be due to sociocultural variations.

Occupational exposure is an important risk factor for developing COPD.<sup>1</sup>In our study largest number of respondents were farmers (39%) followed by daily workers (22%), housewives (14%), businessmen (10%) and service holders (9%).The study in Dhaka by Md Tanvir Kabir et al. showed 38% of the patients were found retired from their job and 31% of them involved with agriculture.<sup>10</sup> Though the study was conducted in Dhaka, agriculture workers were second highest in number. On the other hand our study was done in district where other than farmers significant number of daily workers were noted. In our study most of the females were housewives, those were 14 out of 16. This may be explained by Mohan A et al. and suggested that all women were exposed to domestic fuel.<sup>2</sup> Cooking with biomass fuel is an another risk factor for developing COPD.<sup>1</sup>

Regarding resident, largest number of respondent (42%) lived in the villages, followed by in district 30% and in thana 28%. A study by Md. Tanvir Kabir et al. showed two third of patients (63%) were in rural area.<sup>10</sup> So maximum number lived in rural areas in two studies but percentage varies. This may be correlated with of highest number (39%) of farmers in our study. A large number of people are involved with agriculture and they lived in rural area. But opposite scenarios were observed in another two studies. According to studies by Kaylon Bhowmic et al. and Joanna Rosińczuk et al. highest numbers of respondents lived in urban area or cities and those were 66.8% and 46% respectively.<sup>8, 9</sup> This is not consistent with our study and that may be due to socioeconomic and geographical variations.

For the assessment of economic status, information of monthly income (in taka) was collected from respondents. That shows, maximum (60%) had income between 10,000 to 14,999 per month, subsequently 22% had between 15,000 to 20,000, 10% had more than 20,000tk and 8% had below 10,000 per month. It is the only monthly income of respondents but other parameters to assess economic status were not included. Low

socioeconomic status is the risk factor for development of COPD.<sup>1</sup> Joanna Rosińczuk et al expressed the quality of life of COPD patients depend on financial income.<sup>9</sup> So economic parameter is an important predictor for COPD.

Cigarette smoking represents the most significant risk factor for COPD. It accounts for 95% of cases in the UK.<sup>1</sup> In our study 91% of respondents were smokers, among them 82% were male and 9% were female. Kaylon Bhowmic et al. also showed that the history of smoking was found (regular and ex-smoker) in 91.6% case.<sup>8</sup> This is consistent with our study. In Mohan A et al. all males were smokers<sup>2</sup>. But in our study, out of 84 males 82 were smokers. Mannio DM et al, expressed that things have changed, and now COPD commonly seen in women, as the prevalence of smoking in females as grown progressively<sup>11</sup>. That was reflected in our study and history of smoking was found in 9 females among 16. Cooking with biomass fuels is a risk factor for COPD in developing countries.<sup>1</sup> So indoor air pollution is an important association for the development of COPD among nonsmokers.

#### CONCLUSION:

COPD is becoming an important cause of mortality and morbidity around the world. Sociodemographic factors influence the course of COPD. Smoking habits, poor socioeconomic condition, increasing age and use of biomass fuels for cooking in females, are important predisposing factors for COPD. So assessments of those parameters are important to make a possible solution of such influence for the betterment of patients.

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