

ORIGINAL ARTICLE

EPIDEMIOLOGY OF CHRONIC OBSTRUCTIVE PULMONARY DISEASE AMONG SMOKERS AND NON SMOKERS: A CLINICAL STUDY

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ABSTRACT:

Background: Chronic obstructive pulmonary disease (COPD) leads to death and is main cause of disability and is considered as a major health problem. It is responsible for a huge social and economic burden for the health care infrastructure. This study was conducted to estimate the prevalence of COPD among study population. **Materials & Methods:** This study was conducted in the department of general medicine from January 2015 to June 2015. A total of 5510 patients examined and 275 found positive of COPD. Patient demographic information such as name, age, sex, history of smoking, type of cooking fuel combustion, was recorded. **Results:** We found that 175/275 was smokers and 100/275 was non smokers. 275 patients found to be smokers while 100 were non smokers. 75% were using bidi, 15% were using cigarette and 10% were using hookah. The difference was significant (P-0.01). 65% were using LPG as a fuel while 25% were using solid fuel and 10% were using kerosene. The difference was also significant (P-0.02). Most of the patients were having middle status (62%) while 28% comprised of low status and only 10% consisted of high status. The difference was significant (P-0.01). (Graph II) Most of the patients (50%) were from urban area, 45% were from rural area and only 5% were from both. **Conclusion:** Author concluded that chronic obstructive pulmonary disease is becoming common nowadays. Though smoking is one of the major cause but air pollution caused by combustion fuel cannot be overlooked. **Key Words:** Chronic obstructive pulmonary disease, smoker, urban

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This article may be cited as: Ansari AM, Dixit S. Epidemiology of chronic obstructive pulmonary disease among smokers and non smokers: A clinical study. J Adv Med Dent Scie Res 2016;4(6):100-102.

Access this article online	
Quick Response Code 	Website: www.jamdsr.com DOI: 10.21276/jamdsr.2016.4.6.22

INTRODUCTION

Chronic obstructive pulmonary disease (COPD) was previously known as chronic bronchitis and emphysema. Chronic bronchitis has been defined by The British Medical Research Council (BMRC) as “daily productive cough for at least three consecutive months for more than two successive years.”¹

Emphysema has been defined by American Thoracic Society (ATS) in 1962 as an “anatomic alteration of the lung characterized by an abnormal enlargement of the air spaces distal to the terminal, non-respiratory bronchiole, accompanied by destructive changes of the alveolar walls.” Chronic obstructive pulmonary disease (COPD) leads to death and is main cause of disability and is considered as a major health problem. It is responsible for a huge social and economic burden for the health care infrastructure.²

The prevalence of COPD in 1990 was estimated at 9.34/1000 in men and 7.33/1000 in women. As the estimates included all age groups, there could be an underestimation of prevalence of COPD. There have been a few reports on COPD epidemiology in India in the past. But most of those reports were based on studies on limited population groups.³

Recent studies have reported 2.7% females and 5% males prevalence of COPD. Among various causative factors for COPD, smoking, consumption of biomass and environmental exposures play important role. Biomass combustion results in high levels of pollutants such as benzo(a)pyrene, carbon monoxide, formaldehyde, oxides of nitrogen and sulphur, and benzene that are a major source of respiratory irritants leading to COPD.⁴

This study was conducted to estimate the prevalence of COPD among study population.

MATERIALS & METHODS

This study was conducted in the department of general medicine from January 2015 to June 2015. A total of 5510 patients examined and 275 found positive of COPD.

Patient demographic information such as name, age, sex, history of smoking, type of cooking fuel combustion, was recorded.

A detailed clinical history was also obtained. All patients were subjected to pulmonary function tests. COPD cases were diagnosed based on the three criteria: (1) cough with expectoration on most days of the week for 3 months of the year for at least 2 consecutive years, (2) forced expiratory volume in 1 second (FEV1) and (FEV1)/FVC value lower than 80% predicted as diagnosed by spirometry, and (3) reversibility test result of B15% or B200 ml improvement in FEV1 compared to pre-bronchodilator FEV1.

Results thus obtained were tabulated and subjected to statistical analysis using chi square test. P value less than 0.05 was considered significant.

RESULTS

We examined a total of 5510 patients and 275 found to be positive which included males (140) and females (135). The difference was non significant. (Table I)

We found that 175/275 was smokers and 100/275 was non smokers. The difference was significant (P=0.04). (Graph I) Table II shows that 275 patients found to be smokers while 100 were non smokers. 75% were using bidi, 15% were using cigarette and 10% were using hookah. The difference was significant (P=0.01). 65% were using LPG as a fuel while 25% were using solid fuel and 10% were using kerosene. The difference was also significant (P=0.02).

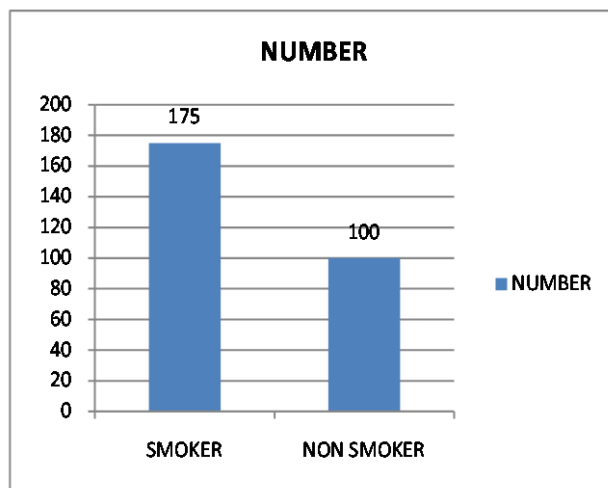
Most of the patients were having middle status (62%) while 28% comprised of low status and only 10% consisted of high status. The difference was significant (P=0.01). (Graph II) Most of the patients (50%) were from urban area, 45% were from rural area and only 5% were from both. (Graph III)

TABLE I: Distribution of patients

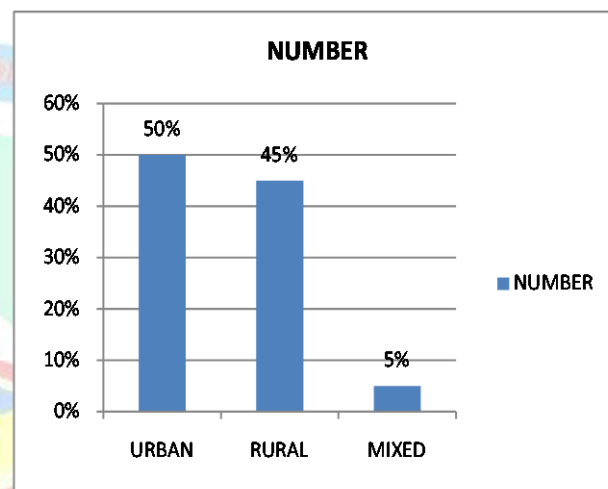
Total- 275			
Gender	Male	Female	P Value
Number	140	135	0.8

TABLE II: Types of smoking and cooking fuel combustion

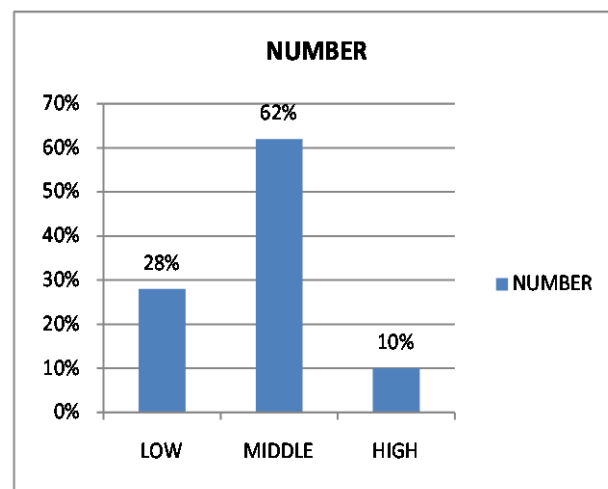
	Number	Percentage
Smoking	275	100%
Cigarette	41	15%
Bidi	206	75%
Hookah	28	10%
Combustion Fuel	100	100%
Lpg	65	65%
Kerosene	10	10%
Solid Fuel	25	25%



GRAPH I: Smoking Habits



GRAPH II: Socioeconomic Status



GRAPH III: Residential Status

DISCUSSION

COPD is universally present disease which has high mortality rates. Different studies have been done so far to estimate the prevalence of COPD. Few studies indicated that smoking is the main cause of COPD while few stated that use of combustion fuel is also one of the contributing factor.^{5,6}

This study was conducted in the department of general medicine in year 2015. Of 5510 examined patients, 275 (5%) found to be positive for COPD and hence included in the study. It comprised of 140 males and 135 females. The confirmation was done with the help of pulmonary function test which included cough with expectoration on most days of the week for 3 months of the year for at least 2 consecutive years, forced expiratory volume in 1 second (FEV1) and (FEV1)/FVC value lower than 80% predicted as diagnosed by spirometry, and reversibility test result of B15% or B200 ml improvement in FEV1 compared to prebronchodilator FEV1.

In present study, we found that 175 were smokers and 100 were non smokers. Thus we can stated that smoking is one of the major factor leading to COPD.

Smoking as the cause of COPD has been established through several major international reports. It was five times more common in smokers in the NHANES III survey.^{7,8} In our study, we also found similar results. Among smoking, 75% were bidi smokers. Cook⁹ in his study found bidi as the most common way of smoking especially in rural population.

We found that 65% of patients were liquefied petroleum gas (LPG) users. Aggarwal¹⁰ in his study stated that COPD among females are due to air pollution caused by combustion fuel. He found low prevalence of smoking among females. We also found that all of our smokers were males.

Middle status patients were seen in 62% of cases. We found almost equal number of patients both from urban and rural area.

CONCLUSION

Author concluded that chronic obstructive pulmonary disease is becoming common nowadays. Though smoking is one of the major cause but air pollution caused by combustion fuel cannot be overlooked.

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Source of support: Nil

Conflict of interest: None declared

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