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Original Research

Assessment of risk factors associated with Chronic obstructive pulmonary disease

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ABSTRACT:

Background: Chronic obstructive pulmonary disease (COPD) is one of the common respiratory diseases. The present study was conducted to assess risk factors associated with Chronic obstructive pulmonary disease (COPD). **Materials & Methods:** 120 patients diagnosed with Chronic obstructive pulmonary disease (COPD) of both genders were enrolled. History of smoking, BMI, education, allergy history, family history, biomass burning, poor house ventilation etc. was recorded. **Results:** out of 120 patients, males were 75 and females were 45. 68 were smoker and 52 were non- smoker, primary education was seen in 87 and secondary education in 33, 62 were underweight, 30 were overweight and 28 were normal. 30 were using household kerosene, 56 were using wood and 34 LPG. Allergy history was seen in 45 and family history in 56. The difference was significant (P< 0.05). **Conclusion:** Common risk factors of COPD was male gender, low BMI, low education, allergy history, family history, use of wood.

Key words: COPD, BMI, Wood.

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INTRODUCTION

Chronic obstructive pulmonary disease (COPD) is one of the common respiratory diseases, characterized by airflow limitation, which can be prevented and treated. The airflow limitation develops not fully reversibly and progressively.[1] According to the estimate of World Health Organization (WHO), about 3 million people died of COPD in 2005, which count for 5% of the total mortality worldwide. It is expected that by 2030, COPD will become the world's third largest lethal disease.[2] In a time of aging populations, COPD is becoming more and more serious, with high and increasing morbidity and mortality, especially in developing countries. In China, the overall prevalence of COPD in people older than 40 was 8.2% according to a large, population-based survey.[3]

The hallmark of COPD is a poorly reversible and progressive airflow limitation resulting from prolonged exposure to inhalational noxious pulmonary agents that initiates detrimental chronic airway inflammation and lung damage.[4] Cigarette smoking is the major cause of COPD worldwide.[5] However, in developing countries exposure to air pollution responsible for non-tobacco-smoking COPD might predominate. Recent studies have described non-tobacco-smoking COPD due to indoor pollution resulting from the use of biomass fuel and open fires for domestic purposes in poorly ventilated households.[6] This observation has a substantial impact on COPD in rural communities, particularly among females and their young children who are routinely engaged in cooking activities.[7] The present study was conducted to assess risk factors associated with Chronic obstructive pulmonary disease (COPD).

MATERIALS & METHODS

The present study comprised of 120 patients diagnosed with Chronic obstructive pulmonary disease (COPD) of both genders. Enrolment of patients in study was done after obtaining their written consent.

Data such as name, age, gender etc. was recorded. A thorough physical and clinical examination was performed in all patients. Parameters such as forced

vital capacity (FVC), forced expiratory volume in 1 second (FEV1) and total expiratory time was recorded. History of smoking, BMI, education, allergy history, family history, biomass burning, poor house ventilation etc. was recorded. Results thus obtained were subjected to statistics. P value less than 0.05 was considered significant.

RESULTS

Table I Distribution of patients

Total- 120		
Gender	**Males**	**Females**
Number	75	45

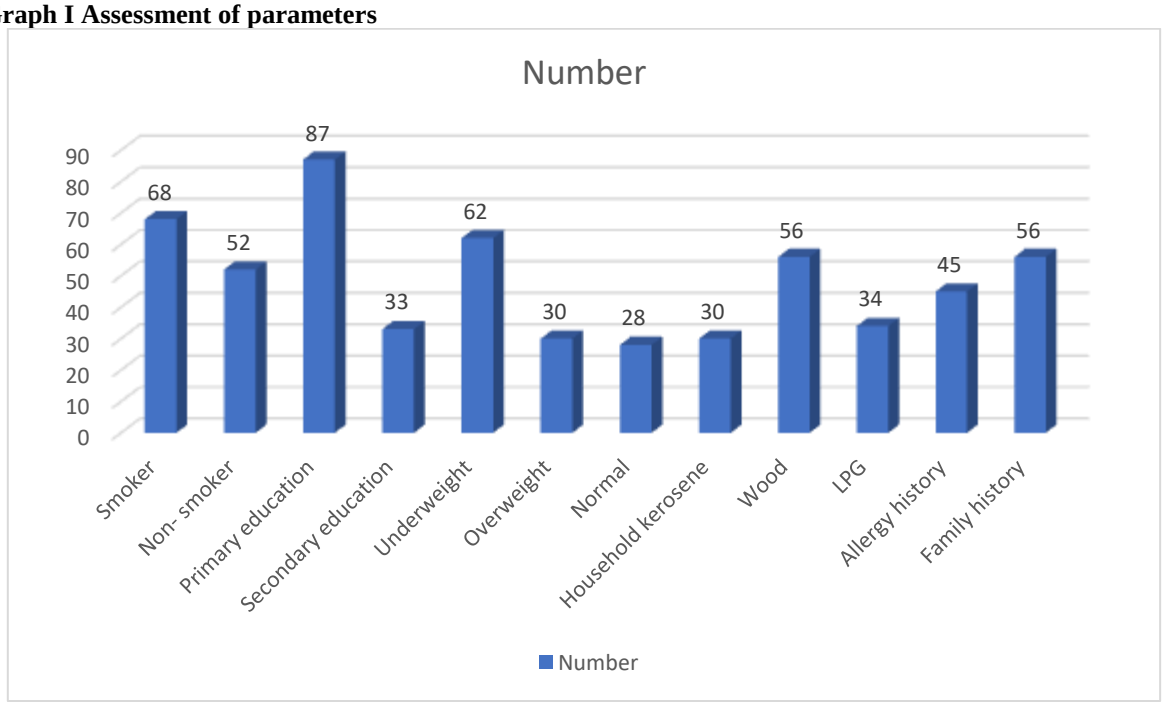
Table I shows that out of 120 patients, males were 75 and females were 45.

Table II Assessment of parameters

Parameters	Number	P value
Smoker	68	0.91
Non- smoker	52	
Primary education	87	0.04
Secondary education	33	
Underweight	62	0.05
Overweight	30	
Normal	28	
Household kerosene	30	0.09
Wood	56	
LPG	34	
Allergy history	45	-
Family history	56	-

Table II, graph I shows that 68 were smoker and 52 were non- smoker, primary education was seen in 87 and secondary education in 33, 62 were underweight, 30 were overweight and 28 were normal. 30 were using household kerosene, 56 were using wood and 34 LPG. Allergy history was seen in 45 and family history in 56. The difference was significant (P< 0.05).

Graph I Assessment of parameters



DISCUSSION

Patients with COPD generally present with chronic cough and sputum production with or without dyspnoea.[8] This clinical presentation tends to be ignored by patients until they present late for treatment at advanced stages of disease, often after developing intolerable dyspnoea. In Africa, these patients might frequently be misdiagnosed and treated for pulmonary tuberculosis (TB) or heart failure.[9] Moreover, the lack of expertise and diagnostic tools such as spirometers are major bottlenecks for the proper diagnosis and treatment of patients with COPD.[10] The current Global Initiative for Chronic Obstructive Lung Disease (GOLD) criteria for the management of COPD requires stepwise administration of bronchodilators and steroids, preferably via inhalational routes, during stable states and exacerbations.[11] The present study was conducted to assess risk factors associated with Chronic obstructive pulmonary disease (COPD). In present study, out of 120 patients, males were 75 and females were 45. Walker et al[12] included a total of 869 participants (49.1% females), of these, 57.1% completed post-bronchodilator spirometry. Of the 25.2% ever-smokers, only 5.4% were current smokers. COPD prevalence was estimated at 17.5% (21.7% in males and 12.9% in females). COPD was associated with a history of cough, phlegm production and wheezing. 51.7% of COPD patients reported cough and 85% had mild to moderate airway limitation. Females had a higher rate of exacerbation. Pulmonary tuberculosis (TB) was reported in 10% of patients. Only 1.7% of patients who were diagnosed as COPD had ever received any medication, with only one female COPD patient having received an inhaler. 99.5% of the population used biomass fuels for cooking. The majority of households had CO levels up to 20 ppm. The prevalence of COPD was high, with a peak at a relatively young age and preponderance in males. A history of TB, cigarette smoking and male sex are important risk factors. Indoor air pollution coupled with use of biomass fuel for cooking and heating may be an important risk factor for developing COPD. We found that 68 were smoker and 52 were non- smoker, primary education was seen in 87 and secondary education in 33, 62 were underweight, 30 were overweight and 28 were normal. 30 were using household kerosene, 56 were using wood and 34 LPG. Allergy history was seen in 45 and family history in 56. Yang et al[13] included a total of 13893 participants (6383 cases and 7510 controls) from 19 case-controls studies. 12 risk factors with significant differences found between COPD and control groups were listed as follows: male sex, smoking, low educational level, low BMI, family history of respiratory disease, allergy history, respiratory infection during childhood, recurrent respiratory infection, occupational dust exposure, biomass burning, poor housing ventilation and living around polluted area. Biomass fuels (e.g., wood, animal dung, crop residues, and coal) typically burned in open fires or poorly functioning stoves, may lead to very high levels of indoor air pollution. Prior studies conducted in China pointed out that indoor pollution from biomass cooking and heating was associated with an increased risk of COPD, respiratory symptoms, and impaired lung function, especially in low and middle-income countries.[14] What's more, almost three billion people worldwide use biomass as their main source of energy for cooking, heating, and other household needs.

CONCLUSION

Authors found that common risk factors of COPD was male gender, low BMI, low education, allergy history, family history, use of wood.

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