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**Title:** Comparative study of respiratory symptoms, lung function, BMI and exercise capacity in patients with COPD associated with tobacco smoke (TS) and biomass smoke (BS) exposure

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**Body:** Background: COPD is the 4th leading cause of death and is expected to be 3rd by 2030. Tobacco smoke and indoor air pollution are the major risk factors for COPD. While there are large number of studies on tobacco smoke and COPD, there is paucity of data on biomass smoke and COPD. It is not clear whether this phenotype of COPD is different or similar to COPD caused by tobacco smoke. Aim: To compare the clinical symptoms, lung function, BMI and 6MWD (exercise capacity) in TS-COPD and BS-COPD. Methods: We prospectively evaluated 103 stable COPD patients from the outpatient clinic. COPD was diagnosed by GOLD guidelines (post bronchodilator FEV1/FVC <70%), respiratory questionnaire captured symptoms and six minute walk test (6MWT) was done as per ATS guidelines. Results:

	TS-COPD(n=75)	BS - COPD(n=26)	p
Males	73 (97.3%)	2 (7.1 %)	
Females	2 (2.6%)	26 (92.85)	p<0.001
Age mean(SD)	63.39 (8.87)	60.04 (7.57)	NS
Cough	70.7 %	71 %	NS
Wheeze	24 %	3.6 %	p = 0.017
BMI	19.83 (3.90)	18.46 (3.81)	NS
FEV1 Post	47.87 (14.98)	44.95 (14.49)	NS
6MWT	379.88 (84.84)	344.12 (88.31)	NS

There were 75(TS-COPD) and 28(BS-COPD) patients with mean age of 63.39(8.87) and 60.04(7.57) respectively. Females (92.85%) dominated the biomass group while 97.3% males were in the tobacco smoking group. TS-COPD presented with wheeze(24%) as compared to 3.6% in BS COPD(p=0.017). There was no difference in clinical symptoms of cough and dyspnea in both groups. Severity of disease, BMI and exercise capacity showed no statistical difference in both groups. Conclusions: Our results confirmed that

BS-COPD and TS-COPD have similar clinical characteristics.