

COMPARISON OF PULMONARY FUNCTION TESTING AMONG NON-SMOKERS, HAND-ROLLED CIGARETTE SMOKERS AND FACTORY MADE CIGARETTE SMOKERS

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Abstract. Tobacco use causes significant health problems. The aim of this study was to compare the following factors among factory-made cigarette (FMC) smokers, hand-rolled cigarette (HRC) smokers and non-smokers (NS): demographic characteristics, pulmonary function testing (PFT) and carboxyhemoglobin (COHb) levels. PFT included checking: forced vital capacity (FVC), forced expiratory volume in one second (FEV1), FEV1/FVC, forced expiratory flow from 25-75% of the vital capacity (FEF25-75) and peak expiratory flow (PEF). We wanted to determine the impact of smoking on pulmonary function testing and to determine any differences in PFTs and COHb levels between FMC and HRC smokers. A total of 182 participants (all males) were included in the study. The subjects in the study were randomly chosen from emergency service admissions which had complaints other than respiratory system. The mean age of study subjects was 40.8 (range: 22-92) years. Mean age of starting smoking among HRC smokers was not significantly different from FMC smokers (95% CI: -0.55-2.37, $p=0.220$). HRC smokers had significantly lower economic and education levels than FMC smokers (95% CI: 9.0-45.2, $p<0.01$). NS had highest economic and educational levels (95% CI: 35.9-66.6, $p<0.01$) of the 3 study groups. The mean [\pm standard deviation(SD)] FEV1/FVC was 76.66 (± 7.45) among FMC smokers (95% CI: 74.82-78.51), 77.36 (± 8.14) among HRC smokers (95% CI: 75.36-79.36) and 83.13 (± 5.08) among NS (95% CI: 81.70-84.56, $p<0.01$). The mean (\pm SD) FEV1 was 84.50 (± 17.80) among FMC smokers (95% CI: 80.12-88.92), 89.4 (± 15.8) among HRC smokers (95% CI: 85.56-93.32) and 95.30 (± 13.3) among NS (95% CI: 91.59-99.07, $p<0.01$). The mean (\pm SD) PEF was 81.90 (± 19.30) among HRC smokers (95% CI: 77.19-86.69), 78.10 (± 18.70) among FMC smokers (95% CI: 73.47-82.74) and 86.20 (± 16.0) among NS (95% CI: 81.70-90.69, $p=0.06$). The mean FVC, FEV1, FEV1/FVC, FEF25-75%, and PEF values among NS were significantly ($p<0.05$) higher for each variable than the mean of these values among FMC and HRC smokers. The mean COHb

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level among NS was significantly ($p < 0.05$) lower than the mean COHb levels in the two smoking groups. There were no significant differences in PFT results or COHb levels between the two smoking groups ($p > 0.05$). Cigarette smoking cause impairment of pulmonary function equally independent of the cigarette type (FMC, HRC) smoked.

Keywords: hand rolled cigarette, tobacco, pulmonary functions, carboxyhemoglobin