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Title: Prevalence and determinants of COPD in 320,000 never smokers in China: Results from the China Kadoorie Biobank study

Dr. Margaret 17008 Smith margaret.smith@ctsu.ox.ac.uk [1], Prof. Liming 17009 Li lmlee@vip.163.com [2,3,4], Dr. Om 17016 Kurmi om.kurmi@ctsu.ox.ac.uk [1], Ms. Mareli 17034 Augustyn mareli.augustyn@ctsu.ox.ac.uk [1], Dr. Yu 17035 Guo guoyu@kscdc.net [3,4], Prof. Rory 17038 Collins rory.collins@ctsu.ox.ac.uk [1], Prof. Richard 17039 Peto richard.peto@ctsu.ox.ac.uk [1] and Prof. Zhengming 17040 Chen zhengmingchen@ctsu.ox.ac.uk [1]. [1] Clinical Trial Service Unit and Epidemiological Studies Unit (CTSU), University of Oxford, Oxford, United Kingdom, OX3 7LF ; [2] School of Public Health, Peking University, Haidan District, China, Beijing 100191 ; [3] Chinese Center for Disease Control and Prevention, (China CDC), Chang Ping District, China, Beijing 102206 and [4] Chinese Academy of Medical Sciences, (CAMS), Dong Cheng District, China, Beijing 100730 .

Body: Background In China, the burden of disease due to COPD is high, even in never smokers, but little is known about the causes of COPD in this group. We report associations of prevalent airflow obstruction (AFO) with socio-demographic, lifestyle and health-related factors, in 320,000 Chinese never smokers. Methods We analysed data on 287,000 female and 30,000 male never smokers, aged 30-79, collected from 10 diverse regions in China in 2004-8. Cross-sectional associations of AFO (FEV_1/FVC<0.7) were examined with logistic regressions adjusted for age, region and education level. Results AFO prevalence was 4% in women, but it varied from 1-11% between regions. Odds ratios (OR) of AFO were higher in those with poor education (no formal: 1.42, 95% CI 1.36-1.48; college: 1.00, 0.87-1.15), lower annual income (<5000 yuan: 1.68, 1.60-1.77; ≥35,000 yuan: 1.00, 0.94-1.06), low BMI (<18.5 kg/m^2: 2.61, 2.44-2.79; ≥30 kg/m^2: 1.00, 0.91-1.10). Prior history of respiratory disease was also associated with higher AFO: asthma (7.58, 6.63-8.67), tuberculosis (2.39, 2.08-2.74). Passive smoking was not associated with higher AFO. There were strong crude positive associations of AFO with exposure to coal/wood smoke that were much attenuated on adjusting for region though some remained statistically significant. AFO prevalence was 5% in men, and associations were slightly stronger. Conclusions In China low socio-economic status is an important risk factor for AFO, but it does not explain the large inter-regional variations in AFO prevalence. Unknown factors associated with coal/wood burning and AFO on a regional level, might explain attenuations in these associations after region adjustment.