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Title: Symptoms of COPD in the general population are associated with overweight and obesity

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Body: Background: Underweight is common in severe and very severe COPD. However, there are some studies showing a high prevalence of also obesity in COPD. Aim: The aim was to study the association of underweight and overweight and obesity with COPD in general population and with symptoms that are common in COPD. Methods: The present study is based on pooled data from four cohorts from the Obstructive Lung Disease in Northern Sweden (OLIN) Studies. We studied 5.190 subjects of the general population with complete records of lung function, length and weight. Covariates used in multivariate analyses included age, sex, smoking habits, socio-economic status, and coexisting respiratory symptoms. Underweight was defined both as BMI <18.5 and BMI<20.0, overweight as BMI≥25 and obesity as BMI≥30. Results: Underweight, BMI<18.5 and BMI<20.0, respectively, was strongly associated with female sex, current smoking and COPD GOLD stage 4 in the adjusted model (OR 19.0, 95% CI 3.7-97.8 and OR 8.6, 95% CI 2.3-32.3). There was no significant association between underweight and longstanding cough, dyspnoea or chronic productive cough. On the other hand, significant associations were seen between obesity and longstanding cough (OR 1.3 95% CI 1.1 – 1.5), dyspnoea (OR 1.6, 95% CI 1.2 – 2.1) and chronic productive cough (OR 1.3, 95% CI 1.03 – 1.5). Conclusion: Chronic cough, dyspnoea and chronic productive cough are key indicators for considering COPD (GOLD 2013). Although common in COPD, in our study we found that these conditions were associated with obesity in the general population, but not with underweight, which is associated with COPD stage 4.