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Title: Predictors of sleep apnea syndrome high risk in an Italian general population sample

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Body: Rationale: to identify predictors of risk of having Sleep Apnea Syndrome (SAS) in an Italian general population sample surveyed 18 years apart. Methods: we studied a general population sample enrolled in a cross-sectional study carried out in Central Italy (Pisa) in 1991-1993 (PI1). Part of the same sample was enrolled in a later cross-sectional study within the framework of the European Union funded project IMCA2 (Indicators for Monitoring COPD and Asthma in the EU) in 2009-2010 (PI2). In both studies, the subjects filled in a standardized questionnaire about health status and risk factors and performed spirometry. The risk of having SAS was scored using the standardized Berlin Questionnaire on the longitudinal subsample selected for the analysis. A Logistic Regression Model (LRM) was run to assess the association among high risk of having SAS at PI2 and baseline risk factors: age, sex, Body Mass Index (BMI), smoking habits, hypertension and diagnoses of asthma, COPD, rhinitis. Results: the sample (n=1145; ranges of initial (8-78 years) and final age (25-96 years); males 45.9%) showed a 25.7% prevalence of SAS high risk at PI2. By the LRM, high risk of having SAS resulted significantly associated with baseline characteristics: age 25-64 (Odd Ratio—OR 3.52), age ≥ 65 (OR 4.46), BMI 25-29 (OR 2.48), BMI ≥ 30 (OR 5.06), ex-smoker (OR 1.45), hypertension (OR 2.07), diagnoses of rhinitis (OR 1.52) and COPD (OR 2.09). Conclusions: previous history of smoking habits and diagnoses of COPD and rhinitis, as well as hypertension, increasing age and BMI are predictors of high risk of having SAS at a 18 years follow-up.