

# Asthma and Chronic Bronchitis Symptoms among Adult Population of Belgrade

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## SUMMARY

**Introduction** Over the last three decades the prevalence of respiratory diseases has been increasing worldwide thus increasing economic burden on the healthcare system. Recent studies have shown that the prevalence of asthma in West European countries ranges from 6-9%, while of chronic obstructive pulmonary diseases (COPD) is 8.0% worldwide.

**Objective** The aim of the study was to estimate the prevalence of respiratory symptoms and smoking habits, and to assess the prevalence of asthma and chronic bronchitis among adults in Belgrade, Serbia.

**Methods** To collect data we used a questionnaire based on the European Community Respiratory Health Survey (ECRHS) protocol, which was mailed to 10,208 randomly selected subjects.

**Results** There were 58.3% of responders to our questionnaire. We noted a higher prevalence of respiratory symptoms in subjects who responded promptly. The majority of the respondents were current or former smokers (37.5% and 17.5% respectively) and 79.9% of them reported respiratory symptoms. The most frequent symptoms were longstanding cough (32.2%), sputum production (30.4%) and wheezing (30.3%). Asthma attacks were reported in 4.4% of cases and 5.6% of subjects were using asthma medications. The prevalence of respiratory symptoms increased with age. Women reported coughing, attacks of breathlessness and coughing, chest tightness by night, allergic rhinitis and chronic coughing, more frequently than men. Productive cough was more frequent in men. The prevalence of almost all symptoms was higher in smokers compared to nonsmokers.

**Conclusion** In Serbia there is a high prevalence of respiratory symptoms, asthma and chronic bronchitis smoking addiction.

**Keywords:** asthma; chronic obstructive pulmonary disease (COPD); symptoms; epidemiological survey; questionnaire

## INTRODUCTION

In the last three decades the prevalence of respiratory symptoms has been increasing worldwide thereby imposing an ever greater economic burden on the health care system and society. The most common chronic respiratory diseases are asthma and chronic obstructive pulmonary disease (COPD). The natural history and response to therapy of asthma and COPD are different, but these two chronic disorders share one common functional feature, i.e. airflow limitation.

Recent studies have shown that the prevalence of asthma in several West European countries varies from 6 to 9% [1, 2, 3]. A lower incidence of asthma has been reported in Eastern Europe, e.g., 2% in Estonia [4]. The worldwide prevalence of COPD is 0.8% according to the World Health Organization (WHO) published data [5]. Other reports note that the prevalence rate of COPD is substantially higher, at approximately 4 to 6% in countries of both Northern and Southern Europe [6]. Reliable asthma and chronic bronchitis prevalence data are lacking for many parts of the world, including South Eastern Europe. To our knowledge, there are no published data regarding respiratory symptoms in adults in the Balkan countries. The

current study was the first large epidemiological investigation of the prevalence of obstructive airway diseases in South Eastern Europe, following European Community Respiratory Health Survey (ECRHS) protocol [7].

## OBJECTIVE

The aim of this study was to estimate the prevalence of respiratory symptoms and smoking habits, and to assess the prevalence of asthma and chronic bronchitis among adults in Belgrade, Serbia, as determined by mailed questionnaire.

## METHODS

### Study area

Serbia is a country located in the Balkans. The study covered Belgrade, the capital of Serbia. The area of Belgrade is 3224 km<sup>2</sup> with a population of 1,576,124 inhabitants, as recorded in 2002.

Measurements of the daily mean concentrations of sulphur dioxide (SO<sub>2</sub>), black smoke and nitrogen dioxide (NO<sub>2</sub>) often show substantial

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