



# The prevalence of self-reported asthma and respiratory symptoms in Ankara, Turkey

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The prevalence of self-reported asthma was studied in a group of Turkish adults using the European Community Respiratory Health Survey (ECRHS) questionnaire distributed during 1994 local elections in Ankara, Turkey. A total of 2020 questionnaires were issued and 1820 (90%) were returned. The mean age of the subjects was  $34.5 \pm 10.2$  years. The prevalence of wheezing at any time in the past was 39.1% which is much higher than has been reported in the literature. However, only 21.7% of the study population had wheezing in the year preceding the survey and 2.9% of them had severe asthma attacks. The prevalences of nocturnal wheeze, nocturnal cough and morning tightness were higher in females ( $P=0.05$  for each). The results of this study showed a high rate of reported symptoms but a low rate of diagnosis and treatment of asthma among the adult population in Ankara.

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## Introduction

In the last 20 yr, investigators from many developed countries have reported increases in asthma prevalence, morbidity and mortality (1,2). However, due to the lack of a precise definition of asthma, accurate estimation of its prevalence in a defined population and comparison of prevalences among populations are often difficult (3). The aim of the present study is to determine the prevalence of self-reported asthma in a group of Turkish adults using The European Community Respiratory Health Survey (ECRHS) questionnaire.

## Subjects and Methods

The ECRHS questionnaire was translated into Turkish. The meaning of the word 'wheezing' was explained in detail as there is no exact translation in Turkish. The study regions were selected randomly to

represent the adult population in Ankara. The questionnaire was distributed to the voters in 12 electoral centres in the inner city during 1994 local elections. The voters were asked to answer the questions on sight and explanation was provided when required. The responses were entered and verified in a database on computer. Ninety-five percent confidence intervals for prevalence estimates were calculated from the standard error of the estimate under a binomial distribution. For comparisons of symptoms between genders, Chi square test was used and a  $P$  value of 0.05 was accepted as the significance level.

## Results

A total of 2020 questionnaires were issued and 1820 (90%) were returned. The mean age of the subjects was  $34.5 \pm 10.2$  years and the male:female ratio was 0.79. The prevalence of asthma symptoms are summarized in Table 1. Although 21.7% of the subjects had wheezed in the last year, only 2.8% had a severe asthma attack (current asthma) and 94 (5.1%) were taking a bronchodilator drug at the time of the study. The prevalence of nocturnal wheeze, nocturnal cough and morning tightness were higher in females ( $P<0.05$  for each).

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TABLE 1. Prevalence of and 95% confidence intervals (CI) for respiratory symptoms in subjects

Variable	Prevalence (%)	CI	Male (%)	Female (%)
Wheeze ever	39.1	38.0–40.2	37.7	40.2
Symptoms in past 12 months				
Q1 Wheeze	21.7	19.8–23.4	20.8	22.5
Q1.1 Wheeze with shortness of breath	12.9	11.4–14.4	13.1	12.7
Q1.2 Wheeze in the absence of a cold	10.6	9.3–12.0	10.1	11.0
Q2 Waking with tightness in the chest	12.7	11.3–14.0	11.1	14.0*
Q3 Woken by an attack of breathlessness	9.9	8.7–11.7	7.2	12.0*
Q4 Woken by an attack of cough	22.6	18.7–26.5	18.0	26.3*
Q5 Attack of asthma	2.9	2.2–3.6	3.0	2.8
Q6 Treatment for asthma	5.1	3.7–6.5	4.3	5.8

\* $P < 0.05$ .

## Discussion

Asthma is one of the most common chronic diseases worldwide (4), and significant variations in prevalence rates have been documented between geographic locations and within the same population at different times (5). However, the lack of an exact definition of asthma and the utilization of different methods to measure its prevalence make comparisons of published studies difficult. Recently, a questionnaire (ECRHS) was developed to overcome these problems, and the first results of the survey using this questionnaire have already been published (6–9).

Although a few studies have addressed the question of asthma prevalence in Turkish children (10,11), the prevalence among Turkish adults is largely unknown. The present study has demonstrated that 39.1% of Turkish adults living in Ankara reported 'ever wheezing', which is much higher than has been reported from many other countries (7–9,12). However, the prevalence of wheezing within the last 12 months (21.7%) was similar to that found by many other investigators (7,12), and current asthma prevalence (2.9%) was comparable to the prevalence reported from Italy (4.5% in Verona, 4.3% in Turin) (8,9). It may be speculated that the closeness of these figures may, in part, be due to the similar geographic locations of Italy and Turkey.

Despite high prevalence of 'ever wheezing' (31.9%), the authors' experience suggests that most of the subjects in Turkey do not consider themselves to be 'asthmatic' due to the reluctance of their physicians and themselves to use the term 'asthma' because of its stigmatizing connotation. The low rate of bronchodilator usage (23.7%) among 396 subjects who had wheezed within the last 12 months may also be partly attributed to the same observation.

These results concerning asthma symptoms in the previous year were similar to those reported in the literature: wheeze (21.7%), nocturnal wheeze (9.9%), nocturnal cough (22.6%) and chest tightness (12.7%). The prevalence of these symptoms were reported as 22, 8, 21 and 15% by Abramson *et al.* (12), and 26, 10.4, 31.5 and 18.7 by Crane *et al.* (13), respectively.

This study shows a high rate of reported symptoms, but a low rate of diagnosis and treatment of asthma in the adult population in Ankara. More comprehensive studies are needed to document the prevalence of asthma in Turkey.

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