



Age at asthma onset and subsequent asthma outcomes among adults with active asthma



Maria C. Mirabelli^{a,*}, Suzanne F. Beavers^a,
Arjun B. Chatterjee^b, Jeanne E. Moorman^a

^a Air Pollution and Respiratory Health Branch, Division of Environmental Hazards and Health Effects, National Center for Environmental Health, Centers for Disease Control and Prevention, 4770 Buford Highway NE, Mailstop F-60, Atlanta, GA 30341, USA

^b Department of Internal Medicine, Section on Pulmonary, Critical Care, Allergy, and Immunologic Diseases, Wake Forest School of Medicine, Medical Center Boulevard, Winston-Salem, NC 27157, USA

Received 13 June 2013; accepted 26 September 2013

Available online 5 October 2013

KEYWORDS

Asthma;
Epidemiology;
Prevalence;
Respiratory health;
Surveillance

Summary

Introduction: Little is known about the extent to which the age at which asthma first began influences respiratory health later in life. We conducted these analyses to examine the relationship between age at asthma onset and subsequent asthma-related outcomes.

Methods: We used data from 12,216 adults with asthma who participated in the 2010 Behavioral Risk Factor Surveillance System Asthma Call-back Survey to describe the distribution of age at asthma onset. Linear regression was used to estimate associations of age at asthma onset with asthma-related outcomes, including symptoms in the past 30 days and asthma-related emergency visits.

Results: Asthma onset before age 16 was reported by an estimated 42% of adults with active asthma, including 14% with onset at 5–9 years of age who reported experiencing any asthma symptoms on 21% of days in the past month. Compared to this group, the percentage of days in the past month with any asthma symptoms was 14.8% higher (95% confidence interval (CI): 5.4, 24.1) among those whose asthma onset occurred at <1 year. When age at onset occurred at 10 years or older there was little change in the prevalence of asthma-related emergency visits across age at onset categories.

Conclusion: Age at asthma onset may affect subsequent asthma-related outcomes.

Published by Elsevier Ltd.

* Corresponding author. Tel.: +1 770 488 0799.
E-mail address: zif7@cdc.gov (M.C. Mirabelli).

Introduction

Asthma affects a growing proportion of the population around the world [1]. In the United States, the estimated prevalence of asthma increased from 7.3% in 2001 to 8.4% in 2010, with higher prevalences reported among children aged 0–17 than among adults [2]. The coughing, wheezing, chest tightness, and difficulty breathing that are characteristic of asthma can begin at any age and may persist throughout life, [3–5] though little is known about the extent to which the age at which asthma first began is associated with the presence, frequency, or severity of subsequent respiratory health outcomes. If the age at asthma onset is associated with respiratory outcomes later in life, then improving our understanding of these associations may increase our ability to introduce educational, environmental, and clinical interventions at an age at which they may be most effective. Data from the Behavioral Risk Factor Surveillance System (BRFSS) Asthma Call-back Survey provide a unique opportunity to describe the distribution of age at asthma onset among adults with active asthma and examine associations between age at asthma onset and subsequent asthma-related outcomes among adults in the United States.

Methods

Asthma Call-back Survey

We conducted these analyses using data from the 2010 BRFSS Asthma Call-back Survey. BRFSS is an ongoing, state-based, random-digit-dialed telephone survey of noninstitutionalized men and women aged 18 years and older residing in the United States [6,7]. In 2010, the BRFSS survey sample was based on disproportionate stratified sampling of landline telephones from strata of high density and medium density of known household telephone numbers in 50 states, the District of Columbia, Guam, Puerto Rico, and the U.S. Virgin Islands [8]. Additional detailed information about the multistage sampling design and sample weighting used for BRFSS is available elsewhere [6,7,9]. The Asthma Call-back Survey is a follow-up telephone survey conducted approximately two weeks after BRFSS interviews among respondents in who indicated that they have ever had asthma by responding ‘yes’ to the following question: “have you ever been told by a doctor, nurse, or other health professional that you had asthma?” In 2010, the National Asthma Control Program provided funding to 37 states, the District of Columbia, and Puerto Rico to conduct the Asthma Call-back Survey. The 37 states are: Alabama, Arizona, California, Connecticut, Florida, Georgia, Hawaii, Illinois, Indiana, Iowa, Kansas, Louisiana, Maine, Maryland, Massachusetts, Michigan, Mississippi, Missouri, Montana, Nebraska, Nevada, New Hampshire, New Jersey, New Mexico, New York, North Dakota, Ohio, Oklahoma, Oregon, Pennsylvania, Rhode Island, Texas, Utah, Vermont, Washington, West Virginia, and Wisconsin. In 2010, ever having a history of asthma was reported by 42,584 BRFSS respondents in the subset of 37 states, the District of Columbia, and Puerto Rico; of these BRFSS respondents, 17,753 responded to the Asthma Call-back Survey. The

Council of American Survey and Research Organization [10] response rates among participating areas ranged from 34% to 64% (overall: 49%; median: 50%) [11]. The BRFSS Asthma Call-back Survey is exempt from Institutional Review Board (IRB) review at the Centers for Disease Control and Prevention; state-specific IRB requirements apply to each of the participating states, the District of Columbia, and Puerto Rico.

Study sample

For this analysis, we present results based on analysis of data from 12,216 respondents with active asthma (Fig. 1). As in previous analysis of Asthma Call-back Survey data [12], respondents were categorized as having active asthma if they reported that at least one of the following occurred during the past 12 months: talked to a doctor or other

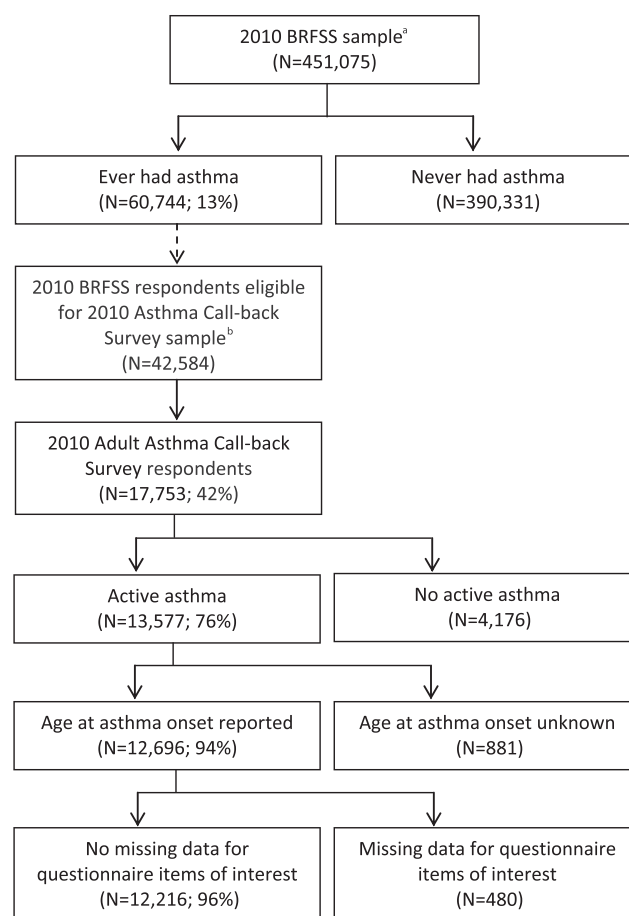


Figure 1 Selection of the study sample: 2010 BRFSS Adult Asthma Call-back Survey. ^aThe 2010 BRFSS was conducted in 50 states, the District of Columbia, Guam, Puerto Rico, and the U.S. Virgin Islands. ^bThe 2010 Adult Asthma Call-back Survey was conducted in 37 states, the District of Columbia, and Puerto Rico. In 2010, 42,584 BRFSS respondents in the 37 states, the District of Columbia, and Puerto Rico reported ever having asthma. A dashed line is used to indicate that Asthma Call-back Survey respondents are not representative that Asthma 60,744 BRFSS respondents with asthma and therefore a percentage is not shown.

Download English Version:

<https://daneshyari.com/en/article/6241557>

Download Persian Version:

<https://daneshyari.com/article/6241557>

[Daneshyari.com](https://daneshyari.com)