Study Population. To evaluate the association between undiagnosed frequent wheezing and health consequences among adolescents. The North Carolina School Asthma Survey population of 122,829 children, 12 to 14 years of age, was studied. The target population was enumerated from 1999–2000 enrollment records maintained by the North Carolina Department of Public Instruction and included 565 public middle schools, with 192,248 children.

Methods. The questionnaire was adapted from the International Study of Asthma and Allergies in Childhood. Three mutually exclusive groups were compared, ie, 1) children with frequent wheezing symptoms and no diagnosis, 2) children who reported wheezing symptoms and a physician diagnosis of asthma, and 3) children with no symptoms or diagnosis ever. A fourth group, defined as infrequent wheezers (children with infrequent wheezing symptoms and no physician diagnosis, n = 38,424), was included for reference. Outcome variables were defined as the numbers of school absences, activity limitations, and sleep disturbances attributable to asthma-like symptoms. Health care utilization variables included the numbers of physician visits, emergency department visits, and hospitalization admissions for treatment of asthma-like symptoms.

Results. The odds of wheezing-related sleep disturbances, limited activities, and missed school were higher among undiagnosed frequent wheezers, compared with diagnosed asthmatics. The frequencies of emergency department visits and hospitalizations did not differ substantially between the undiagnosed wheezing group and the diagnosed asthma group, although the undiagnosed group was less likely to have visited a physician for treatment of wheezing in the previous year. Undiagnosed frequent wheezers were more likely to experience sleep disturbances, limited activities, missed school, and greater health care utilization for treatment of wheezing, compared with asymptomatic children. Compared with asymptomatic children, diagnosed asthmatics were 10 to 24 times more likely to experience limited activities, sleep disturbances, and missed school. They were also 20 times more likely to visit a physician and ≥9 times more likely to report ≥3 emergency department visits or hospitalization for treatment of wheezing, compared with asymptomatic children.

Conclusions. Children with frequent wheezing symptoms but no asthma diagnosis experience substantial illness-related morbidity, similar to that of diagnosed asthmatics. Undiagnosed frequent wheezers require more recognition from primary care physicians and need active disease management to reduce health consequences.

Reviewer's Comments. This study nicely evaluates multiple aspects of functional consequences and health care use among children with undiagnosed frequent wheezing from a population-based sample. This study suggests that undiagnosed frequent wheezers require better recognition by primary care physicians and need active disease management. It also suggests that the effects of asthma in the pediatric population may be underestimated, because of undiagnosed disease.
LOWER PHYSICIAN ESTIMATE OF UNDERLYING ASTHMA SEVERITY LEADS TO UNDERTREATMENT
Elizabeth C. Matsui
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