

Latino children with asthma less accurate in determining their lung function

August 9 2010

A new study by researchers at the Bradley Hasbro Children's Research Center and the University of Puerto Rico may help explain some of the well-documented ethnic disparities in pediatric asthma.

Compared to non-Latino white [children](#) with [asthma](#), Latino children in the study tended to think they were experiencing asthma symptoms, such as shortness of breath, when tests actually revealed normal [lung function](#). According to researchers, inaccurate symptom perception was associated with more asthma-related emergency room visits, hospitalizations and unscheduled clinic visits.

The study, published in the *American Journal of Respiratory and Critical Care Medicine*, is the first to demonstrate clear differences in pulmonary function perception ability between Latino and non-Latino white children with asthma. Perception of lung function and asthma symptoms is an important component in the home management of asthma.

"There are a couple of possible explanations for these cultural differences in perceptual ability. For example, Latino children often have limited access to asthma health care, so families might expect to be seen by a physician only if the child is experiencing severe asthma symptoms. This might cause anxious parents, and kids, to inadvertently magnify symptoms in order to receive the care they believe is needed," said lead author Gregory K. Fritz, MD, academic director of Bradley Hospital and director of the Bradley Hasbro Children's Research Center (BHCRC).

"On the other hand, since greater symptom magnification leads to higher emergency department use, unscheduled office visits and hospitalizations, this tendency toward magnification could be viewed as a contributor to asthma disparities rather than a result," added Fritz, who is also a professor of psychiatry and human behavior at The Warren Alpert Medical School of Brown University.

Overall, asthma has now become the most common pediatric chronic illness in the United States, affecting an estimated 4.8 million children. Minority children are disproportionately affected by asthma. Non-Latino black and Puerto Rican children have higher prevalence rates compared to non-Latino white children. Overall, Puerto Rican children have the highest prevalence of all groups - 140 percent higher than non-Latino white children.

The study included 512 children with asthma between the ages 7-16; 222 were from the Providence area and 290 from San Juan, Puerto Rico. Of the Rhode Island children, 115 were Latino and 107 were non-Latinos whites. All children were trained to use a home spirometer to measure their peak expiratory flow rate (PEFR), a test that determines how fast a person can exhale air, twice a day for five weeks. Study participants guessed what they thought their PERF would be, based on how they were feeling, before performing the actual test. The results were compared to determine the child's perceptual accuracy, which fell into three zones: accurate, danger (child misses clinically significant pulmonary function compromise), and magnification (oversensitivity to minimal compromise).

The results show that in addition to ethnicity, younger age, female sex, lower intelligence and poverty were also associated with less accurate pulmonary function perception. Island Puerto Rican children had the lowest accuracy and highest magnification scores followed by Rhode Island Latinos; both differed significantly from non-Latino white

children.

Provided by Lifespan

Citation: Latino children with asthma less accurate in determining their lung function (2010, August 9) retrieved 23 April 2024 from <https://medicalxpress.com/news/2010-08-latino-children-asthma-accurate-lung.html>

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