# The Impact of Asthma on Hispanic American Children: Health Disparities, Environmental Triggers, and Educational Challenges

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## Abstract

Asthma has become a major public health concern, affecting 8.7% of children under 18 worldwide in 2022. Though asthma is mainly within racial and ethnic groups, Hispanic American children have additional challenges. Even though the overall current prevalence of asthma for Hispanic children can be among the lowest of all ethnicities (6.7%), too often their children have disproportionately high rates of severe asthma outcomes. They are twice as likely to be taken to the emergency department and 40% more likely to die from asthma compared to non-Hispanic white children. This paper discusses disparities in asthma prevalence and severity, implications for the education of Hispanic American children, factors affecting disparities such as limited access to healthcare, and environmental triggers of this outcome. Effective asthma management is crucial for efforts toward the improvement of academic performance and the enhancement of the quality of life.

## Introduction

Many people make assumptions about the intelligence and capabilities of Hispanic children academically as a whole but often forget to take in the major setbacks and detriments that many of them must face. Among several critical but highly underestimated detriments in the provided case are the impacts of asthma, which impacts Hispanic children more severely compared to other races and ethnicities. With the poor air quality of the urban and low-income areas, where most Hispanic families tend to reside, asthma is not just a health problem—it's an academic hindrance.[1] Added to that, the chronic nature of the condition with increased other environmental antigens such as air pollution continuously makes asthma one of the leading causes of missed school days, impedance in learning, and reduced educational attainment.

Asthma is a long-term condition that affects the lungs, causing symptoms like coughing, shortness of breath, and wheezing. These symptoms happen because the airways in the lungs become swollen and tightened, making breathing harder. Irritated lung cells also produce extra mucus, further narrowing the small airways, and leading to breathing difficulties.[2] Children are most susceptible to asthma since their body's natural defense system is still developing. The specific cause of asthma may differ from person to person since many factors contribute to asthma development such as genetics, allergens, viral infections, and even race.[3] Hispanic/Latino people have lower rates of asthma than other ethnic and racial groups in the U.S. overall. However, Hispanics are susceptible to much more serious outcomes than their non-Hispanic white counterparts.[4] These harsh effects of asthma are made even more severe by the air pollution that most Hispanic families must endure due to socioeconomic factors.[5]

## Asthma Prevalence Among Hispanic American Children and Other Ethnicities

One of the factors that contribute to the development of asthma is race. Thus, the percentages of those affected by asthma differentiate between different ethnic and racial groups. In 2022, Indigenous people held the highest rate of asthma prevalence at 13.0%

followed by African American individuals who held a rate of 10.3%. On the lower end came Latino individuals at 6.7%, and Asian individuals at 4.4%.[6] However, Latino Americans are twice as likely to visit the emergency department and 40% more likely to die from asthma than non-Hispanic whites.[7] These disparities suggest that while overall prevalence may be lower in some Hispanic subgroups, the severity and outcomes of asthma are more evident in all Hispanics.

**Environmental/Socioeconomic Factors Impacting Asthma Prevalence**

One of the most significant risk factors for asthma among Hispanic children is environmental exposure. Exposure to air pollution at any point during lung development can have short-term and long-lasting effects on children's health.[8] Air pollution, including fine particulate matter and other contaminants, is 14% higher in predominantly Latino neighborhoods compared to predominantly white areas.[5] Approximately 1 in 6 Latino children in the U.S., are particularly vulnerable, facing higher rates of asthma and other health issues linked with air pollution.[9] Furthermore, more than 19 million Hispanics live in areas that violate federal air pollution standards for ozone, one of the main triggers of asthma.[10] Low-income neighborhoods often expose residents to higher levels of pollutants, including chemicals such as formaldehyde, which is also linked to asthma.

Hispanics, particularly those from immigrant families, face additional challenges such as limited English proficiency and lower educational attainment, which lead them to take on laborious low-paying jobs. These jobs such as construction, agriculture, and service industries are more likely to expose workers to harmful chemicals, leading to higher risks of developing asthma, as workers are forced to work in extreme temperatures and weather.[11] Additionally, the scarcity of affordable housing forces many Hispanic families to live in poor conditions, further exacerbating health risks.[12]

**Asthma Management Challenges in Hispanic Children**

Healthcare is a result of residence in under-served communities. It is multilayered in that the roots lie in the structural, socio-economic, and cultural barriers impeding good asthma care. The fact of residence in underserved communities creates, on its own, scarcity in the delivery of quality health care services. A large proportion of Hispanic families remain uninsured or inadequately insured, as they are twice as likely to be uninsured than non-Hispanic white families.[13] Hence accessing preventive measures, consultations with specialists as well and medication may be difficult for Hispanics. Even when insurance may be available, language barriers between healthcare providers and their patients can lead to misunderstandings, misdiagnoses, or poorly effective treatment plans.[14] In a study of over 100,000 children (the National Survey of Children's Health), Flores *et al*. found differences between ethnic groups concerning full-time employment rates, household income, and insurance coverage. He found that the prevalence of asthma was higher in ethnic groups with relatively low employment rates, income, and insurance coverage.[15]

Major purely Hispanic areas are usually more underserved by health facility resources and specialist services.[16] This results in longer travel times and less care. This is particularly

true for the management of asthma, which requires monitoring and timely intervention. In addition to these structural barriers, socioeconomic and cultural factors further complicate the challenges. Most Hispanic families are poor in economic conditions, which to a great extent limits access to health care services, medicines, and devices that would be of help in the sufficient management of asthma. In addition, immigration pressures and fear of approaching health care due to undocumented status further contribute to preventing such families from seeking medical care out of fear of consequences.[17] Apprehension about deportation or documentation status might be associated with delays or forgotten care, which would exacerbate symptoms of asthma and increase the acute exacerbation rate.[18] This interplay underlines the need for tailored interventions that address the unique challenges faced by asthmatic Hispanic children.

## Impacts of Asthma on Educational Opportunities

Asthma means a wide range of things physiologically, but one thing is certain: asthma takes a toll on academics. A study by Koinis-Mitchell et al. (2019) compared the academic performance of urban children with asthma to their healthy counterparts and explored ethnic differences in these associations. The study found that children with asthma, particularly Latino children, experienced poorer academic outcomes, as asthma exacerbated ethnicity-based disparities in performance. Among children with asthma, poorer lung function and increased symptoms were linked to lower math scores, more careless schoolwork, and higher absenteeism. The study highlighted the significant role of asthma control in academic success, with better-managed asthma linked to improved school work quality and fewer absences. Importantly, Latino children with asthma faced unique stressors, such as acculturative stress, lower medication adherence, and heightened fears about asthma, which increased their risk for poor school performance.[19]

Continual asthma induces episodic hypoxia; which leads to synaptic connectivity, which in a crucial brain learning center (the hippocampus) may affect memory. Asthma also corresponds with sleep problems including delayed sleep onset, nighttime awakenings, and daytime sleepiness.[20] Not getting enough sleep impacts how well kids learn and can make staying focused during the school day even harder. In turn, they often miss school due to asthma, which disrupts their ability to understand and engage in school. Asthma-related absences may also be worse for low-income Hispanic and Black children, who suffer both more severe disease and disparities in academic achievement compared to their non-Hispanic white peers.

## Conclusion

Asthma is an illness with impacts far-reaching beyond health itself to the very core of educational opportunities and quality of life for Hispanic American children. The prevalence may be somewhat lower in Hispanic children than in other ethnic groups, but the condition's outcomes and its aftermath are disproportionately more severe. Such severe outcomes are from barriers to healthcare access, environmental stressors such as low-income neighborhood pollution, and cultural barriers. Asthma exacerbates existing disparities in academic performance among Latino children, who bear the added burdens of acculturative stress, lower

medication adherence, and increased absences due to poor asthma management. Efforts should be directed toward targeted interventions focused on improved access to health care and asthma education, along with a reduction in environmental triggers, to help close the gaps not only in health but also in academic achievement. After all, effective asthma management is not only crucial to improving the health of these children but also their academic success and eventually opportunities that life can give them.

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