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Neighborhood poverty, urban residence, race/ethnicity, and asthma: Rethinking the inner-city asthma epidemic

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Background

Although it is thought that inner-city areas have a high burden of asthma, the prevalence of asthma in inner cities across the United States is not known.

Objective

We sought to estimate the prevalence of current asthma in US children living in inner-city and non–inner-city areas and to examine whether urban residence, poverty, or race/ethnicity are the main drivers of asthma disparities.

Methods

The National Health Interview Survey 2009-2011 was linked by census tract to data from the US Census and the National Center for Health Statistics. Multivariate logistic regression models adjusted for sex; age; race/ethnicity; residence in an urban, suburban, medium metro, or small metro/rural area; poverty; and birth outside the United States, with current asthma and asthma morbidity as outcome variables. Inner-city areas were defined as urban areas with 20% or more of households at below the poverty line.

Results

We included 23,065 children living in 5,853 census tracts. The prevalence of current asthma was 12.9% in inner-city and 10.6% in non–inner-city areas, but this difference was not significant after adjusting for race/ethnicity, region, age, and sex. In fully adjusted models black race, Puerto Rican ethnicity, and lower household income but not residence in poor or urban areas were independent risk factors for current asthma. Household poverty increased the risk of asthma among non-Hispanics and Puerto Ricans but not among other Hispanics. Associations with asthma morbidity were very similar to those with prevalent asthma.

Conclusions

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Although the prevalence of asthma is high in some inner-city areas, this is largely explained by demographic factors and not by living in an urban neighborhood.

Key words:
Inner-city asthma, childhood asthma, urban/rural, neighborhood, race/ethnicity

Abbreviations used:
CDC (Centers for Disease Control and Prevention), NCHS (National Center for Health Statistics), NHIS (National Health Interview Survey), OR (Odds ratio)

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