

Introduction

- Asthma is a respiratory condition in which the airways between the nose, mouth, and lungs swell and become narrow¹.
- Over 5 million of children under the age of 18 suffer from asthma¹.
- Asthma is the leading cause of emergency department (ED) visits² and missed school days among children aged 5-17¹.
- Asthma is exacerbated by exposure to ozone³.
- Industrial and vehicular emissions are the primary contributors to the production of ozone, especially in urban areas³.
- Minorities bear a disproportionate burden of asthma¹.

Objectives

1. To examine whether residence in an urban environment is associated with asthma prevalence and severity amongst the pediatric population.
2. To examine if different pediatric ethnic groups in various geographical locations have more asthma-related emergency department visits.

Methods

- We conducted secondary analysis using data obtained from the Office of Statewide Health Planning and Development.
- This data was collected in 2019 from all licensed hospitals in California.
- The data consisted of counts of asthma-related emergency department visits by California zip code and by race/ethnicity.
- We administered a Kruskal-Wallis test to examine the relationship between zip code and asthma prevalence amongst the pediatric population.

Results

- There were significant differences in the number of ED visits between urban, suburban, and rural zip codes ($p < .001$).

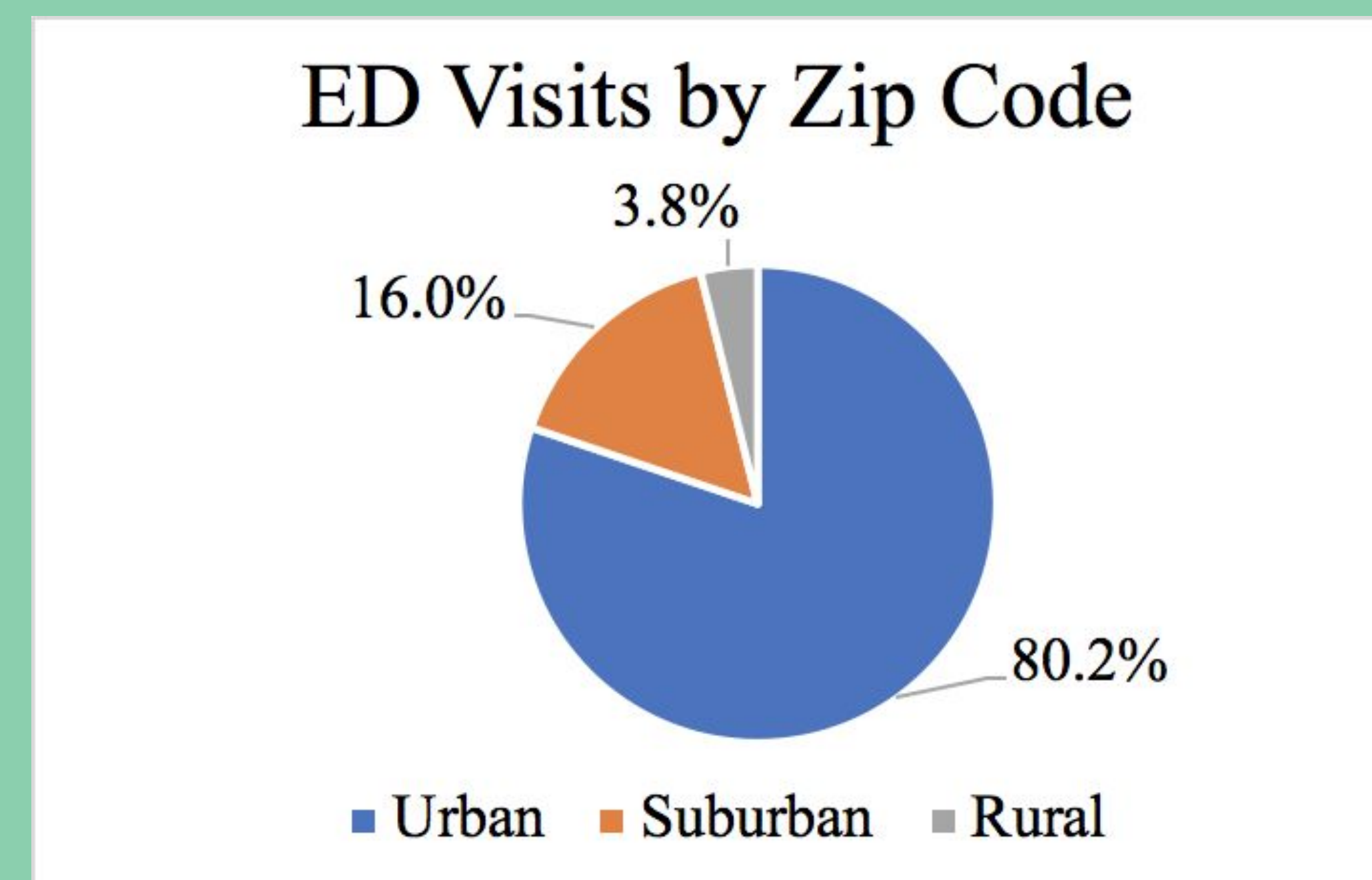


Figure 1: Of the 58,410 asthma-related visits to the ED, the majority of visits occur in urban zip codes, with the next largest number from suburban zip codes, and the lowest number from rural zip codes.

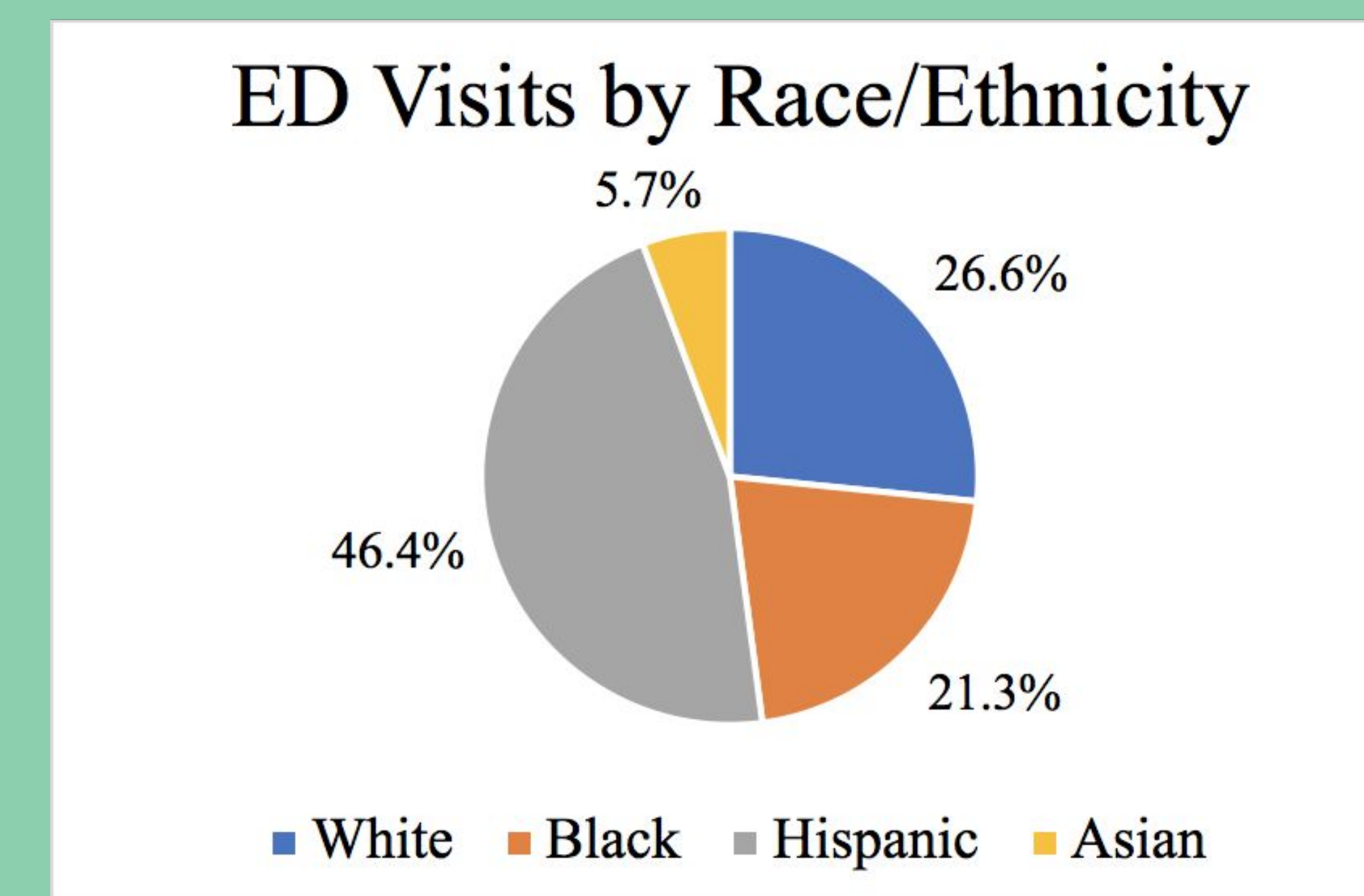


Figure 2: By race/ethnicity, the amount of asthma-related ED visits were predominantly by Hispanic children, followed by White, Black, and Asian children.

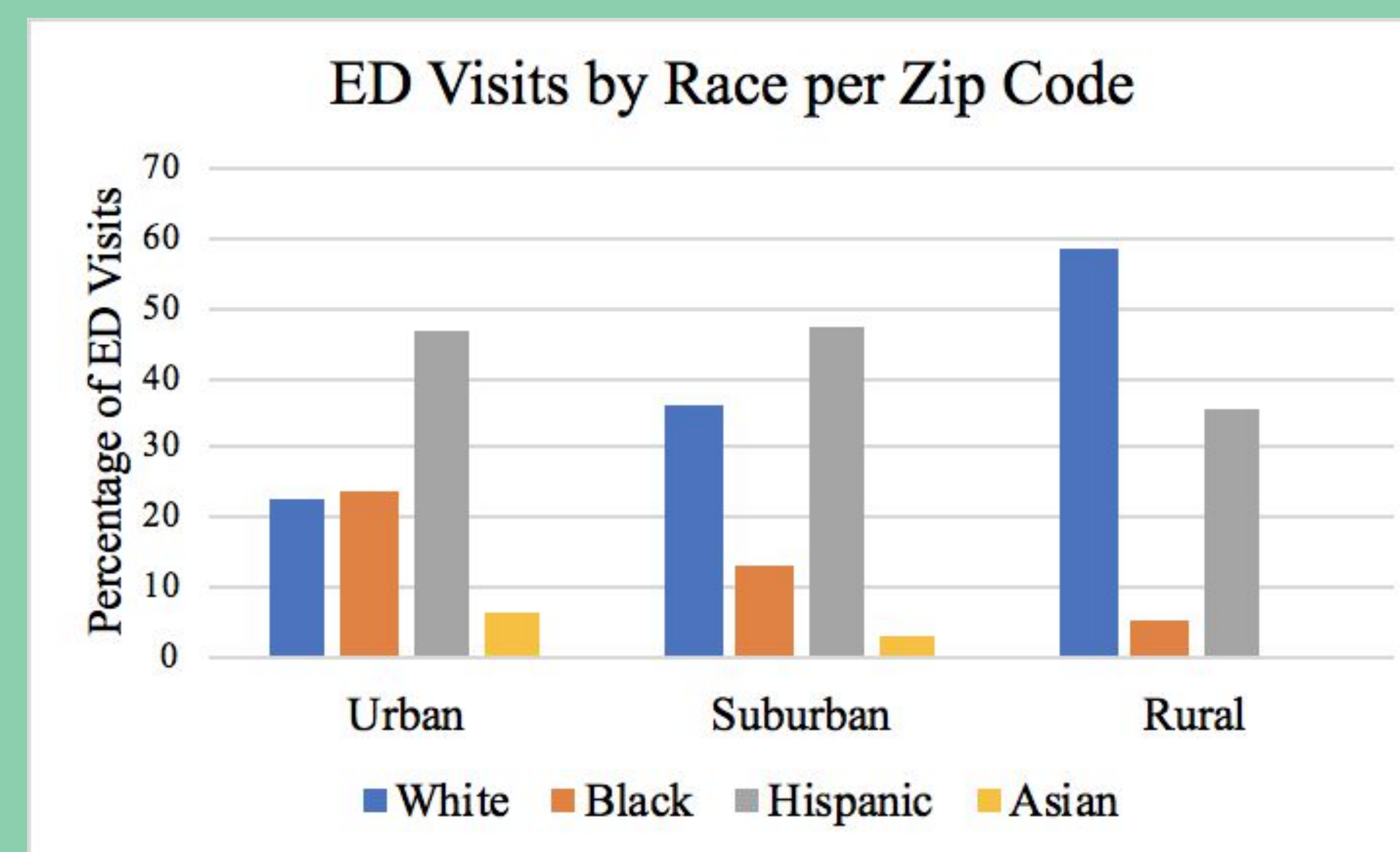


Figure 3: In urban and suburban environments, Hispanic children comprise the most asthma-related ED visits compared to other ethnicities. In rural environments, White children comprise the most asthma-related emergency department visits compared to other ethnicities.

Conclusions

- There is a disproportionate number of pediatric asthma ED visits between urban, suburban, & rural zip codes.
- The number of asthma-related ED visits is disproportionately comprised of Hispanic children in urban and suburban zip codes, and White children in rural zip codes.

Policy Implications

- Future policies should address the disproportionate levels of air pollution in urban & suburban environments, especially among children and minorities.

Acknowledgments

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References

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