

ASSOCIATION OF SOCIAL AND ENVIRONMENTAL FACTORS WITH PEDIATRIC ASTHMA

Sheryl Magzamen, *University of Oklahoma Health Science Center, USA*

Sara Gale, *University of California, Berkeley, USA*

John Radke, *University of California, Berkeley, USA*

Ira Tager, *University of California, Berkeley, USA*

Background and Aims: Asthma is the most common chronic disease of childhood, affecting approximately seven percent of children in the United States. Evidence has indicated that the social environment and physical environment contribute to asthma prevalence as well as asthma-related morbidity.

Methods: We implemented a geographic information system to determine the relation between ecological level factors and asthma diagnosis and emergency department use in a school-based cohort of adolescent students in Oakland, CA. Social factors were derived from Census 2000 variables from students' census tract; environmental exposures were calculated from distance to non-residential land use designations, toxic release inventory (TRI) sites, and major roadways in the area.

Results: Over a two-year period, 4,017 students completed a brief, in-class asthma survey and provided residential addresses that were able to be geocoded. Controlling for individual level variables, students diagnosed with asthma who resided in the 1st and 2nd quartiles of distance to industrial areas had increased odds of emergency department visits (OR: 1.84, 95% CI: 1.01, 3.36; OR: 1.76, 95% CI: 1.05, 2.94, respectively) ; elevated and non-significant effects were found for asthma diagnosis. Distance to closed-access freeways was not significantly associated with either outcome. With regard to social factors, increases in percent of census tract residents who were currently married was associated significantly to decreased odds of diagnosed asthma (OR: 0.98, 95% CI: 0.96, 0.99). Increases in percent of census tract residents with household income less than \$25,000 was significantly associated with odds of asthma diagnosis (OR: 1.03, 95% CI: 1.01, 1.05). When social factors were included in the model, environmental factors were no longer significantly related to outcomes.

Conclusion: Both the physical and social environments are associated with asthma outcomes among adolescents in an urban community. Ecological factors measured have distinct relations with prevalence and morbidity outcomes.