
G. ABSTRACT: ASTHMA, ENVIRONMENTAL RISK FACTORS, AND HYPERTENSION AMONG ARAB AMERICANS IN THE METRO DETROIT AREA

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Background. The importance of environmental risk factors in asthma etiology has been well documented, and certain environmental risk factors have also been associated with hypertension. However, few previous studies have examined the relationship between hypertension and asthma.

Study Population. This study explores the relationships between hypertension, asthma and environmental risk factors in a population of 600 Arab American adults in the metropolitan Detroit area.

Methods. An Environmental Risk Index (ERI) was used to quantify household environmental risk factors associated with asthma; physician-diagnosed hypertension was self-reported. Asthma status was determined using responses to a validated symptoms checklist and self-reported diagnosis by a physician.

Results. Hypertension was significantly associated with asthma after adjusting for age, sex, healthcare access, socioeconomic status (SES) and marital status. The prevalence of asthma and hypertension was not significantly different among men and women in the study population. Comparing the relationship between environmental risk factors and asthma revealed that ERI was significantly associated with asthma among participants with and without hypertension; however, the relationship between environmental risk factors and asthma was stronger among participants with hypertension. This interaction was stronger among women in the study population and was statistically significant adjusting for age, healthcare access, SES and marital status.

These results are consistent with the disproportionate asthma risk associated with obesity among women. Specific risk factors implicated in this relationship will be discussed. An additional consideration was the impact of other potentially mediating factors, such as age and time spent at home. Age was positively associated with asthma and hypertension in the study population; however the relationship between ERI, hypertension and asthma did not vary significantly by age. Using full-time employment as a surrogate for time spent outside the home showed that the relationship between ERI, asthma and hypertension was stronger among study participants who spent more time at home. This effect modification was statistically significant controlling for age, healthcare access, SES and marital status.

Conclusion. Results suggest that hypertension may impact asthma not only through shared risk factors, but also through an increased vulnerability to environmental stressors. These findings also suggest that household risk factors may have a stronger adverse effect among individuals who spend more time at home, possibly due to prolonged duration of exposure or a greater degree of vulnerability among those individuals.

This is an abstract of a proposed presentation and does not necessarily reflect EPA policy.
