

# Physical and sexual abuse linked to asthma in Puerto Rican kids

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Children who are physically or sexually abused are more than twice as likely to have asthma as their peers, according to a recent study of urban children in Puerto Rico. In fact, physical and sexual abuse was second only to maternal asthma in all the risk factors tested, including paternal asthma and indicators of socioeconomic status.

"To our knowledge, this is the first report of a direct association between childhood abuse and asthma and asthma-related outcomes," wrote Robyn T. Cohen, M.D., M.P.H., lead author of the paper of the Channing Laboratory of Brigham and Women's Hospital in Boston.

The article was published in the first issue for September of the *American Journal of Respiratory and Critical Care Medicine*, a publication of the American Thoracic Society.

"We wanted to explore whether exposure to stress and violence is associated with an increased risk of asthma in urban children living in Puerto Rico," said principal investigator, Juan C. Celedón, M.D., Dr.P.H. "We already know that there is a high prevalence of asthma in Puerto Rican children, and many studies have linked stress and exposure to violence to health problems in childhood, including asthma."

The researchers interviewed 1,353 parent-child pairs in between 2001 and 2003, and re-interviewed nearly 90 percent of the same pairs two years after their initial interviews. They used validated questionnaires to elicit information about stress and violence in the children's lives

(whenever possible, without the parent present), and used doctor-diagnosed asthma, allergic rhinitis, use of prescription medication for asthma and physician visits for asthma and/or allergic rhinitis within the previous year to assess the children's asthma/allergy status.

"Children with a history of abuse had higher frequencies of all outcomes of interest than those without a history of abuse," wrote Dr. Cohen.

"After adjusting for relevant covariates, history of abuse was associated with an approximate doubling of the odds of current asthma, healthcare use for asthma, and allergic rhinitis." For example, whereas 15 (20 percent) of the 75 children with a history of abuse had current asthma, 128 (11.5 percent) of 1,117 children without history of abuse had current asthma.

The study did not, however, find a link between neighborhood violence and asthma, as other studies have done in the past. The researchers suggest that the discrepancy may be the result of the fact that "it is not simply the exposure to a particular stressor but the physiological response to that stressor that predicts physical health outcomes."

Individual responses to stressors such as community violence will vary, and according to some data, Puerto Rican culture itself may have protective features. "Latino culture places an emphasis on certain values and social supports that may buffer the effects of poverty and community violence experienced by children in Puerto Rico," said Dr. Cohen. Direct physical or sexual abuse, however, could cause a breakdown of those buffering systems.

The investigators postulate that abuse may alter the hypothalamic-pituitary-adrenal (HPA) axis, which in turn may depress the glucocorticoid response, resulting in decreased suppression of airway inflammatory responses. Other studies have supported this possibility, especially among patients with post-traumatic stress disorder.

But while the exact pathway remains unclear, and beyond the scope of a cross-sectional study has yet to be ascertained, there is immediate relevance of the findings for social workers and physicians: "Our findings highlight the importance of both screening for illnesses such as asthma in children who are abused and of being aware of the possibility of abuse in children with asthma," wrote Dr. Cohen.

Source: American Thoracic Society

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