Caregiver Characteristics of Urban African-American Children Living With Severe Asthma

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Background

What is Asthma?
- Asthma is a chronic lung disease that causes inflammation and swelling in the airways. Asthma causes recurring periods of narrowing (or wheezing) in the airways due to inflammation of the airways, chest tightness, shortness of breath and coughing. The coughing often occurs at night or early in the morning (CDC, 2016).
- Asthma affects people of all ages, it must often starts in childhood. It affects over 300 million people worldwide (World Health Organization, 2016).
- In the United States, more than 22 million people are known to have asthma. Nearly 9 million of these people are children (CDC, 2016).
- Asthma mortality is conceptualized as high symptoms days, nights, and ER related visits due to asthma (NHLBI, 2012).

Caregiver Characteristics

Psychosocial factors such as parental stress and depression have been shown to be associated with increased asthma morbidity in children living in urban communities, particularly in caregivers who have children with severe asthma (Yamamoto & Nagano, 2015). Several studies have shown similarities in caregivers of children with asthma such as exhibiting depressive symptoms, being highly stressed, having low education, and being a smoker which has been seen to contribute to childhood asthma disparities (Han, Lee, & Lee, 2015).

Methods

The data used for this analysis is baseline data from a randomized controlled study. Pediatric Asthma Alert Leader (PAAL) study for the purposes of secondary data analysis. PAAL was designed to evaluate the effectiveness of a parent-physician asthma communication intervention on reducing emergency department (ED) visits in children living in an urban community with persistent uncontrolled asthma. The study was approved by the Institutional Review Board at The Johns Hopkins University.

Eligibility criteria: 1) have had physician-diagnosed asthma based on caregiver report with validation from the child's physician. 2) have at least one emergency room visit (ER) visit or 1 hospitalization for asthma within past 12 months. 3) have mild to severe persistent asthma based on National Heart, Lung, & Blood Institute guidelines of having any of the following: a) Average of ≥7 days per week of asthma symptoms, b) ≥2 days per week with rescue medication use (budesonide, salmeterol) c) ≥1-2 days per month of nighttime symptoms: for 1 to at least 4 years of age but no more than 10 years of age; 4) Reside in the Baltimore Metropolitan Area; 5) Not currently participating in another asthma study; 7) Not have a sibling enrolled in the study. Exclusion Criteria included: 1) inability to speak and understand English, 2) no access to a working telephone or alternate telephone for follow up surveys, 3) a co-reared respiratory condition including cystic fibrosis, chronic lung disease (BPD), lung cancer, tracheostomy that could interfere with the assessment of asthma-related outcome measures; 4) children residing in foster care or where legal guardian. After determining eligibility, caregivers signed informed consent to participate in the study. Caregivers received $30.00 gift certificates for completion of the baseline survey.

Participants (N = 300) were recruited from both The Johns Hopkins University Hospital and University of Maryland Hospital in Baltimore, Maryland. Sociodemographics, health characteristics data, and caregiver interview data were examined to ascertain factors that contribute to asthma morbidity. Outcome variables that were used to conceptualize asthma morbidity were: number of daytime symptoms and nighttime symptoms in the past two weeks. Predictor variables included: 1) child age, 2) caregiver age, 3) smoking practices, 4) caregiver daily stress score 5) caregiver asthma stress score and 6) employment.

Analysis plan

Analyses were conducted using IBM Statistical Package for the Social Sciences 23.0 for Windows. Variables were screened for outliers and missing values. All data were screened for data analysis entry accuracy and to ensure that the assumptions of the statistical tests were met. Normally, issues of collinearity, and equality of variance were screened and examined using standard cut offs. Hierarchical multiple linear regression analyses with 5,000 bootstrap resamples (Wright, London, & Field, 2011) were used to examine the effect independent variables had on the asthma morbidity measures.

Social Determinants of Health

Health disparities that affect African American children and their families are often concentrated by neighborhood and social status. Thus leaving the most vulnerable to have poorer health outcomes. The social determinants of health framework acknowledges the social, physical, and economic conditions as factors that interact in a dynamic and mutual cycle and all contribute to the health of the population.

Purpose & Hypothesis

To identify common characteristics among African American caregivers who have children with severe asthma in order to properly design education asthma and prevention programs for inner city children.

Results

We hypothesize that children with severe asthma morbidity are more likely to have caregivers who smoke, are highly stressed and are of low socioeconomic status.

Discussion & Implications

Parents/Caregivers with children living with severe asthma were more likely to report higher levels of asthma-related stress. Caregivers in this study were also more likely to smoke, less educated & had low income.

Several recommendations for pediatric providers can be gleaned from these results:
- Refer parents to asthma education programs
- Refer parents who smoke to smoking cessation programs including the national quit line 1-800-QUIT-NOW
- Promote programs that help parents maintain a clean, dust free environment
- Refer parents who smoke to smoking cessation programs including the national quit line 1-800-QUIT-NOW
- Identify indoor environmental exposures that may exacerbate asthma symptoms in young children, especially pre school age children.
- For parents with high stress, refer to support groups or counseling.

References

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