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Closing the gap

Understanding African American asthma knowledge and beliefs

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ABSTRACT

Background: African American children are disproportionately affected by asthma (13% vs 8% non-Hispanic white Americans) and experience 30% higher asthma-related deaths than whites. Knowledge regarding asthma and asthma treatment among African Americans has been postulated as a potential contributor to this observed health disparity. Compared with the amount of studies on asthma, few investigations provide insight into the baseline knowledge and beliefs of African Americans regarding asthma.

Objective: Assess knowledge and beliefs regarding asthma symptoms, diagnosis, treatment, prognosis, and stigmas in a general community sample of African Americans.

Methods: Using community-based participatory research techniques, we developed and implemented a cross-sectional survey to explore asthma knowledge and beliefs among African American adults in a Midwestern city.

Results: Among the 158 African American adults who completed the survey, general asthma knowledge was good, with awareness of the genetic contribution to asthma and general asthma symptomatology (eg, 92% aware of nighttime cough as a symptom). However, asthma-related misconceptions were also revealed. Thirty-three percent of respondents were concerned about addiction to asthma medication, and 60% of respondents believed that inhaled corticosteroids were dangerous or did not know.

Conclusion: This study reveals important insights into asthma knowledge and beliefs among African Americans that may be used to address disparities in asthma outcomes in this population.

Introduction

Asthma remains a common and serious public health problem affecting 24 million people in the United States. The disease accounts for 1.6 million emergency department visits and 10.5 million physician's office visits each year in the United States.[1] Asthma prevalence rates are higher among specific populations such as children, females, ethnic minorities, and those living below the poverty level; many of these groups also have higher rates of asthma-related morbidity and mortality.[2] African Americans with asthma experience disproportionate rates of morbidity and mortality compared with whites.[3] African American patients with asthma are hospitalized at twice the rate of whites (29.9 per 10,000 in African Americans compared with 8.7 per 10,000 in whites).[4] Death rates among African Americans attributable to asthma are 23.9 per million, in comparison with 8.4 per million in whites.[5] For children, number of missed school days is an indication of morbidity and impact on family life. Recent data indicate a higher prevalence of minority children missing school because of asthma: 60% to 70% among African American children in comparison with 40% to 50% among white children.[6] Although asthma knowledge and the ability to manage the disease have been described as factors influencing this observed health disparity, surprisingly few studies have investigated the knowledge and beliefs of African Americans about asthma and asthma treatment. Cultural differences in beliefs and knowledge have been shown to affect patient management of diseases.[7-9] Therefore, the impact of cultural differences on the choices families make with regard to asthma self-management, therapeutic interventions, environment, and health care use are important to consider in addressing gaps in health outcomes.

Community-based studies regarding asthma knowledge are limited, and fewer studies target African American populations. Deis et al[10] conducted a survey among parents/caregivers (n = 229) of patients with asthma who presented to 2 different pediatric emergency departments to assess medical knowledge regarding medications, asthma action plans, and spacer devices. They identified differences in what parents understood about the purpose of inhaled corticosteroids (29% responded it would open airways immediately; 24% responded they did not know) as well as lack of daily inhaled corticosteroid use in children with persistent asthma. They also identified a desire for asthma education. Forty-four percent of their study population was African American, 34% white, and 16% Hispanic. Of interest, they found that non–African Americans were more likely to receive a written action plan and have a scheduled preventive asthma

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care visit.[10] In a community-based study, Brown et al[11] interviewed 221 African American and Afro-Caribbean women in 10 Brooklyn area beauty salons regarding a number of common disease processes (asthma, heart health, breast health, prostate health, secondhand smoke, and sexual health). This study found that participants had a good knowledge base regarding factors and symptoms of common diseases; however, the study was limited in gauging the broad knowledge of asthma, because it only assessed knowledge regarding secondhand smoking and asthma.[11] In another community-based study conducted by Malone et al,[12] they aimed to characterize asthma knowledge in "high-risk neighborhoods." There was lower asthma knowledge overall in high-risk neighborhoods compared with the general Chicago community sample. Notably, within the high-risk neighborhoods, 85% of individuals surveyed were African American.[12] This study is not representative of asthma knowledge in the general African American population, because the African American population comprises those with varied financial and social backgrounds. Therefore, understanding asthma knowledge among a well-represented population of African Americans is important for tackling current asthma-related health disparities in this group.

The aim of this study was to understand the knowledge and beliefs among the general population of African American adults in a metropolitan area using community-based research techniques.

Methods

We conducted a cross-sectional study among African American adults in the Kansas City, Missouri metropolitan area (local census data from 2016 reported a total population of 459,787 and 29.9% African American), using a survey questionnaire to explore the attitudes, beliefs, and knowledge about asthma common among this group. Survey development used a community-based participatory research approach, which was previously described in detail.[13] The questionnaire was developed by a community action board (CAB) comprising members of a local predominantly African American church, members of a nonprofit health organization, community members who either have asthma or have a child with asthma, and academic researchers. The CAB worked collaboratively to (1) determine potential barriers and content areas in the survey; (2) develop culturally appropriate, relevant, clear, and concise questions related to the topics; (3) determine best methods for administration of the survey (electronic vs paper format); and (4) identify appropriate venues for data collection. Themes and questions for inclusion in the survey were considered by the CAB members in light of whether they believed that they addressed misconceptions and beliefs regarding asthma, gaps in asthma knowledge, and attitudes regarding asthma that were relevant in the local African American community and the African American community at large. The CAB considered a variety of themes, and questions based on previous literature as well as new themes or questions were identified.[12,14,15] The CAB developed a 37-item survey, "Asthma Related Attitudes, Knowledge and Beliefs," to be conducted in the community. Survey questions used Likert-type response options of "strongly agree," "agree," "do not know/not sure," "disagree," and "strongly disagree." The survey was conducted among a random convenience sample of adult self-identified African American participants during community events within the Kansas City metropolitan area. The study was approved by the Children's Mercy Hospital Institutional Review Board and was conducted in accordance with ethical standards. Per the Children's Mercy Hospital institutional review board, no consent was required for participation in the study because no identifying data were collected. The survey was conducted concurrently with another separate survey designed to explore research knowledge and barriers to African American research participation.[13]

Statistical Analysis

For data analysis, the Likert scale responses for "strongly agree" and "agree" were collapsed into 1 single category of "agree"; responses of "disagree" and "strongly disagree" collapsed into the "disagree" category. Descriptive data were summarized as frequencies for all survey responses.

Results

The total number of participants surveyed was 169, with a 95% response rate. Among those who declined to participate, the most common reason reported for unwillingness to participate was lack of time. Among the 169 participants who completed the survey, 11 did not self-identify as African American. Data for these respondents were excluded from this analysis. Demographic information is presented in Table 1 and indicate a range in age, education, and economic status among respondents.

Experience with asthma was highly prevalent among the participants. Thirty-eight percent reported a personal diagnosis of asthma, 78% reported they have a family member with asthma, and 59% reported that they have cared for someone with asthma (Table 1). Most survey respondents indicated general knowledge of asthma pathophysiology, presentation, and triggers (Table 2). Most survey respondents agreed that asthma was genetic (72%) and was not contagious (84%). A little over half agreed that there was an

Table 1
Demographics of Study Participants

	Number (%) of study participants
Total number	169
Race	African American: 158 (93.4%)
	Non–African American: 11 (6.6%)
Ethnicity	Hispanic: 2 (1.1%)
	Non-Hispanic: 155 (91.7%)
	Did not report: 12 (7.1%)
Age groups (years old)	18-25: 12 (7.2%)
	26-35: 76 (45.5%)
	36-45: 33 (19.8%)
	46- 60: 42 (25.2%)
	60-75: 4 (2.4%)
	Total < 40: 121 (72.5%)
	Total > 40: 46 (27.5%)
Highest level of education[a]	Grade school: 9 (5%)
	High school or GED: 61 (36%)
	Post-high school education or technical education: 7 (4%)
	College and above: 91 (54%)
	Some college: 45 (26%)
	Associate's degree or technical school certificate: 27 (16%)
	Bachelor's degree (BA, BS): 10 (6%)
	Some graduate school or graduate degree: 9 (7%)
Insurance[a,b]	Medicare: 29 (17%)
	Medicaid: 51 (30.2%)
	Private or some private: 59 (35%)
	No insurance: 37 (22%)
Experience with asthma	Personal diagnosis of asthma: 64 (38.3%), 2 did not report
	Family member with asthma: 124 (78%), 10 did not report
	Cared for someone with asthma: 98 (59.8%), 5 did not report

[a]N = 1 did not report.
[b]Respondents were able to mark all that apply.