BRIEF COMMUNICATIONS

Characteristics of African-American Male Caregivers in a Study of Oral Health in Detroit – A Brief Communication[1]

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Abstract

Objective: *The role of fathers among African-American men, particularly related to oral health, has received relatively little scholarly attention. This paper describes the characteristics of African-American men who self-identified as primary caregiver to an index child participating in the Detroit Dental Health Project.* ***Methods:*** *Of 1,021 caregiver–child pairs recruited to this oral health study, 52 were male. Data were collected at a central site in Detroit on: 1) demographics; 2) social support; 3) oral health beliefs, behaviors, and knowledge; 4) caregivers' and child's oral health.* ***Results:*** *Participants reported good availability of social support and high perceived self-efficacy to take care of their child's teeth, yet, they possessed limited knowledge on preventing oral health problems. Moreover, male caregivers had high levels of caries, missing teeth, and poor hygiene.* ***Conclusions:*** *Findings may inform the development of effective interventions aimed at male caregivers to improve knowledge and understanding of the caries process, particularly concerning their children.*

Key Words: oral health, male caregivers, health disparities

Introduction

Most studies of oral health focus on the mother as the primary caregiver and responsible agent for the child's oral health (1,2). A few studies have assessed the influence of fathers' beliefs and behaviors on the oral health of their children (3,4). To our knowledge, information on the involvement of African-American fathers in oral health care is limited to one study conducted in New Jersey (5). Additional information about African-American male caregivers and their involvement in the oral health of children could offer a basis for innovative programs to improve the oral health of low-income African-American children at high risk of early childhood caries. The purpose of this article is to describe the characteristics of African-American men who participated in an oral health study in Detroit and self-identified as the child's primary caregiver.

Materials and Methods

Sample. Data for this study were from the Detroit Dental Health Project, a longitudinal study of oral health among low-income African-Americans (6). The design was a stratified two-stage probability sample of households from the 39 census tracts in Detroit. Census tracts were selected using the 2000 census public-use data based on percent of households below 200 percent of the poverty level, the percent of households with African-Americans, and the percent of households with children under age 6 years. Trained interviewers visited each sampled housing unit to screen its residents for eligibility. Of 10,695 sampled housing units, 1,386 (14.2 percent) had an eligible African-Americanchild under 6 years of age, and 1,021 caregiver–child pairs were recruited.

The primary caregiver was defined as the self-identified person who had permanent decision-making authority about what the index child eats, how to take care of the index child's mouth and teeth, and when the index child visits the doctor or dentist, excluding those in a "babysitting" capacity for the index child. Caregivers completed an interview and received an oral/dental examination, and the index child received a dental examination at a central location in Detroit. There were 52 male caregivers in the baseline survey.

Measures

Demographic Characteristics. Demographic characteristics of the caregivers were age, education, employment status, and household income. Educational attainment was coded as less than high school and high school, combined with some college education or higher. Family income was categorized into less than $10,000, $10,000 to ~$19,999, and greater than or equal to $20,000. Relationship to the child was coded as either biological father or other. Caregivers were considered employed if they were employed full- or part-time outside the home or working full/part-time in the home and generating income.

Social Support. Social support was assessed through five questions assessing caregivers' perception of

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the availability (rated as yes/no) of someone they could count on to: a) run errands; b) lend money; c) offer encouragement and reassurance; d) supervise their children; and e) lend car or offer a ride if needed.

Oral Health Knowledge, Behaviors, and Beliefs. Oral health knowledge: Scales indicating knowledge of baby bottle use (KBU) and children's oral hygiene needs (KCOH) were constructed by averaging responses to four and six oral health statements, respectively. KBU assessed appropriate bottle use and bottle contents. KCOH concerned frequency and timing of brushing. Cronbach alpha assessing internal reliability was 0.76 for KBU and 0.77 for KCOH.

Behaviors: Caregivers who currently smoked and who had smoked more than 100 cigarettes in their lifetime were classified as smokers. Caregivers also reported the reason for their most recent dental visit as prevention, treatment, both prevention and treatment, or never visited.

Beliefs/Attitudes: The oral health self-efficacy scale was created by averaging responses to nine items assessing the level of confidence in having children's teeth brushed before bedtime under various stressful situations (7). One variable indicating oral health fatalistic beliefs identified caregivers who agreed that "most children eventually develop dental cavities."

Caregivers' Clinical Oral Health Status. Caregivers' clinical oral health status was assessed as dental caries experience measured by the number of decayed, missing and filled surfaces (DMFS) and oral hygiene score. Four calibrated dentists conducted examinations using the International Caries Detection and Assessment System. The stage of carious process was measured for each tooth surface, resulting in two summary indexes, D2MFS and D_TMFS. D2MFS represented the number of cavitated surfaces, plus filled surfaces and missing surfaces because of caries. D_TMFS was the number of surfaces with cavitated and non-cavitated lesions, plus filled surfaces and missing surfaces because of caries. In addition, caregivers' oral hygiene was assessed by applying a two-tone disclosing solution to tooth surfaces. Scoring was determined by location of stained plaque on the facial and lingual tooth surfaces.

Analysis.

Weighted analyses adjusted for unequal probability of selection into the study and for differential nonresponse. Analysis was primarily descriptive, presenting frequency distributions, means, and standard errors (SE) of study variables. Statistical analyses of data were conducted using Stata software (8) with accounting for clustering effects because of the complex sample design.

Results

Most caregivers (74 percent) had a high school education or higher (Table 1). A substantial proportion had very low incomes and only 29.5 percent were employed. Approximately 73 percent reported being the child's biological father, and participants reported good availability of support.

Table 1
Demographic Characteristics, Social Support, and Oral Health Knowledge, Behaviors, and Beliefs of Male Caregivers

Demographic characteristics Variables	Male caregivers ($n = 52$)
Age (Mean; SE)	31.2 (1.78) Range = 18-70 years
Education	% (SE)
Less than high school	25.5 (0.04)
High school diploma	44.3 (0.07)
Some college or more	30.2 (0.07)
Income	
Less than $10,000	27.0 (0.05)
$10,000 to ~$19,999	35.0 (0.07)
More than $20,000	38.0 (0.07)
Employment status	
Employed	29.5 (0.04)
Relationship to the child	
Biological father	72.7 (0.07)
Other	27.3 (0.07)
Social support	
Run errands	82.7 (0.05)
Lend money	75.1 (0.07)
Offer encouragement and reassurance	88.0 (0.04)
Supervise their children	91.8 (0.04)
Lend car or offer a ride if needed	83.9 (0.06)
Oral health knowledge	
KBU	2.8 (0.22)
KCOH	1.4 (0.08)
Oral health behaviors	
Reason to visit dentists	
Preventive	28.2 (0.10)
Both preventive and treatment	25.1 (0.07)
Treatment	19.6 (0.05)
Never visit dentists	27.1 (0.06)
Smoker	
Yes	57.4 (0.05)
Oral health beliefs/attitudes	
Self-efficacy	3.2 (0.10)
Oral health fatalism	
Yes	77.2 (0.04)

KBU, knowledge of baby bottle use; KCOH, knowledge of children's oral hygiene; SE, standard error.

Table 2
Clinical Oral Health Outcomes for Male Caregivers

Variables	Male caregivers oral health status ($n = 52$) Mean (SE)
Number of teeth	29.8 (0.47)
Number of non-cavitated lesions (D1)	19.6 (1.97)
Number of cavitated lesions (D2)	11.6 (2.75)
Number of filled lesions (F)	3.4 (0.74)
Number of missing surfaces because caries (M)	7.9 (2.73)
Number of tooth surfaces with cavitated and non-cavitated lesions, fillings, and missing tooth surfaces (D_TMFS)	42.4 (3.60)
Number of tooth surfaces with cavitated lesions, fillings, and missing tooth surfaces (D_2MFS)	24.5 (4.01)
Oral hygiene index	0.7 (0.03)

SE, standard error.

Caregivers' scores on KBU was 2.8 (SE = 0.22) out of a possible total score of 5.0. The score on KCOH was 1.4 (SE = 0.08) out of a possible score of 5. These are relatively poor scores indicating limited knowledge about putting a child to bed with a bottle, filling bottle with sweetened liquids, the importance of brushing primary teeth, and using fluoride.

About 27 percent of male caregivers never visited the dentist, and 20 percent had treatment visits only. However, more than half the caregivers had either preventive treatments (28 percent) or both preventive and treatment visits (25 percent). A large proportion (57 percent) of the participants smoked cigarettes. The 2004 Michigan State Risk Factory Survey (9) reported that 23.6 percent of Blacks smoked cigarettes employing the same definition of smoking used in this study.

Male caregivers reported high self-efficacy in being able to brush their child's teeth with a mean score of 3.2 (SE = 0.10) out of a possible 4.0, corresponding to being moderately to very confident about toothbrushing. Most (77 percent) agreed that "most children will develop dental cavities."

Clinical oral health status was poor with high levels of non-cavitated and cavitated lesions, missing teeth, and poor hygiene (Table 2). Participants had very few filled surfaces indicating poor access to dental care.

Discussion

Relatively little is known about the social context, oral health, and oral health beliefs of African-American male caregivers, especially those living in poverty. Thus, our findings provide new information to the existing literature. Our findings correspond to Broder *et al.*'s (5) by showing that fathers have low incomes and tend to be unemployed. Furthermore, fathers in both studies scored relatively high on perceived dental self-efficacy, although the fathers in Broder *et al.*'s study were more knowledgeable about early childhood caries than fathers in our study. The added benefit of the current study includes that our sample is representative of a defined population (rather than a sample of convenience drawn from social programs in New Jersey as found in Broder *et al.*'s). Additionally, we describe the clinical oral health status of our participants as well as the prevalence of perceived social support.

One encouraging finding from this study is that participants had slightly better oral health status in terms of dental caries experience compared with African-Americans generally. The National Health and Nutrition Examination Survey (NHANES) 1999-2002 (10) shows that the mean number of DFMS for African-Americans (the measure that most closely approximates D2MFS in this study) was 39.6 (SE = 0.74) compared with 24.5 (SE = 4.01) in this study. More alarming is the high prevalence of smoking in this sample. The smoking rate among study participants was more than twice the prevalence among African-Americans in Michigan. Given the higher risk of oral cancer among African-American men and worse health outcomes compared with White men, greater attention should be paid to fostering smoking cessation in this group. Additionally, as the majority of participants reported visiting the dentist in the past 2 years (73 percent), dentists should be more vigilant about referring patients to such programs.

Participants in this study generally reported high perceived self-efficacy to brush their child's teeth, although knowledge of how to prevent caries was poor and fatalism about tooth decay was high. This attitude may reflect the poor oral health status of their children. Given the high level of perceived social support and self-efficacy, an intervention aimed at male caregivers based on improving knowledge and understanding of the caries process and reducing fatalism about caries among their children could be highly effective. African-American male caregivers could benefit from interventions aimed at improving their own oral health, despite the challenges of living in poverty.

African-American male caregivers represent a small but understudied group. The role that men play in caring for children is increasingly important, particularly given that growing numbers of men assume child-care responsibilities. There are several limitations to the study. The sample size is small, generalizability of the findings is limited to individuals living in the poorest areas of Detroit, and further work is needed on the scales used to assess beliefs and attitudes among the participants who may have low health-literacy skills. Nevertheless, insights into oral health status, attitudes, and behaviors, as well as resources available through human capital, self-efficacy, and social support provide preliminary

understandings about strengths possessed, and also where vulnerabilities may exist among African-American males living in high-poverty areas. Because of the limitations in the sampling methodology and small numbers, our analysis is limited to a descriptive profile of these caregivers that will lead to more definitive studies in the future. Future research is needed to examine how such characteristics influence and impact children's oral health.

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