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Acculturation and Quality of Life in Urban, African American Caregivers of Children with Asthma

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Abstract

Objective—Racial/ethnic minority caregivers of children with asthma are at risk for low levels of quality of life (QOL). Limited research has identified factors that contribute to lower QOL among African American caregivers. This study examined associations between acculturation (e.g., engaging in values/beliefs traditional of one's culture versus adopting mainstream cultural views) and caregiver QOL in low-income, urban African American families of children (7–12 years) with persistent asthma. We also investigated the association between caregiver QOL and child emergency department (ED) use.

Methods—Fifty-five caregivers and their children completed interview-based questionnaires in a single research session. Caregivers completed the Pediatric Asthma Caregiver Quality of Life Questionnaire (PACQLQ), the African American Acculturation Scale-Revised (AAAS-R), and reported on child asthma variables. Children completed items assessing asthma control.

Results—Higher overall QOL and emotional function subscale scores were associated with more traditional African American religious beliefs/practices ($r=.288$, $p=.033$; $r=.333$, $p=.013$). Higher emotional function subscale scores were associated with more traditional values of African American families ($r=.306$, $p=.023$). Lower QOL was found among caregivers of children who had visited the ED three or more times in the last year.

Conclusions—Less acculturation tied to religious beliefs/practices and family values (as measured by the AAAS-R) may serve a protective role in reducing the burden low-income, urban African American caregivers experience in managing child asthma. This study is the first of its kind to study acculturation in African American caregivers of children with asthma.

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Keywords

child; family; disparities; culture; emergent care; pediatric

Introduction

Pediatric asthma disparities are well-documented; African American and Latino children often experience higher rates of asthma prevalence, severity, and morbidity than non-Latino White children (1). For instance, African American children are twice as likely to have asthma, four times more likely to be hospitalized and seven times more likely to die from the disease than non-Latino White children (2). Prior research suggests that African American and Latino caregivers may experience their child's asthma as more burdensome, placing them at risk for experiencing lower levels of quality of life (QOL) as compared to non-Latino White caregivers (3). Caregiver QOL is an indicator of how much the child's asthma is impacting the caregiver. Caregivers with low QOL may find it challenging to effectively manage their child's chronic disease (4), which has implications for day to day treatment decisions. For instance, lower caregiver QOL has been linked to increased risk for child emergency department (ED) visits due to asthma among Latino families (3). In urban samples, caregivers may be managing child asthma that is more severe and in the context of broader contextual stress, such as limited access to care (5). Thus, factors not directly associated with the child's asthma may influence a caregiver's level of QOL and ability to adapt to their child's condition.

Few studies have specifically examined contextual factors that may contribute to lower QOL among urban, African American caregivers of children with asthma and could serve as targets of interventions to improve caregiver QOL. For instance, increased life stress and child asthma management stress were associated with worse QOL in a sample of urban, African American caregivers (6). In a sample of African American and Latino caregivers, more caregiver concerns related to child asthma medications were associated with lower caregiver QOL (7). Cultural factors, such as level of acculturation, have not been considered as correlates of caregiver QOL in pediatric asthma.

Acculturation is defined as the extent to which a family, usually a minority racial/ethnic group, engages in their culture's traditional values and beliefs versus adopting mainstream cultural views. In African American culture, traditional values and beliefs may include respect for elders, beliefs that family needs take precedence over individual needs, and health practices that include the use of herbal remedies and prayer (8). Caregivers who identify as less acculturated may endorse more of these traditional values or beliefs. Acculturation has been consistently linked to health behaviors among racial/ethnic minority groups (9, 10). For instance, the prevalence of smoking was higher among African American individuals who were less acculturated (more culturally traditional) than those individuals who were more acculturated (11).

To date, few studies have considered how acculturation may influence pediatric asthma outcomes. Results from one study suggested higher acculturative stress in Puerto Rican born caregivers living in the US compared to US born Latino caregivers, and that acculturative

stress may complicate effective asthma management (12). Another study found that although Puerto Rican caregivers living in the US were more acculturated than Mexican American caregivers, there was no association between acculturation and child asthma control within either group (13). Limited research, however, has focused on acculturation in African American families of children with asthma. African American caregivers who are more traditional (e.g., less acculturated) may experience more stress associated with adhering to traditional values in the context of majority culture (14), which has implications for caregiver QOL.

Furthermore, in African American families, the association between caregiver QOL and risk for ED visits due to asthma has not been established. Given that rates of ED use are higher among African American children than non-Latino White children (1), there is a continued need to determine factors that might contribute to these disparities. Previous research in African American families suggests that fear related to a child dying from asthma can motivate a caregiver to seek emergency care (15). African American caregivers, especially those living in low-income urban settings, may experience increased burden in caring for a child with asthma, which has consequences for daily treatment decisions, including ED use. Thus, determining the clinical utility of caregiver QOL is an important aspect in better understanding asthma management in urban, African American families, as well as targets of interventions to minimize emergent care use.

In this pilot study, we examined the association between level of acculturation and QOL among urban, African American caregivers of children with asthma. Understanding the role of acculturation in caregiver QOL may be central to developing future studies that incorporate proper cultural perspectives to improve caregiver QOL. Given previous research on acculturation and health behaviors, we hypothesized that African American caregivers who were more acculturated and reported less immersion in traditional African American culture would experience better QOL related to their child's asthma. In further determining the clinical utility of caregiver QOL among urban African American families, we also examined the association between caregiver QOL and child ED visits due to asthma.

Methods

Participants

Participants in this cross-sectional study included 55 African American caregivers and their children with asthma (Table 1). Of the caregivers, 82% ($n=45$) self-identified as the child's biological mother, 9% ($n=5$) as the child's biological father, 6% ($n=3$) as the child's step or adoptive mother, 2% ($n=1$) as the child's grandmother, and 2% ($n=1$) self-identified as the child's aunt. Inclusion criteria included: physician diagnosed child asthma, child between 7–12 years, caregiver self-identified as African American/Black, caregiver in charge of daily asthma care and living with child for past six months, and an urban address verified by zip code. Enrolled children had persistent asthma, demonstrated by a prescribed asthma controller medication or symptom severity/frequency over the last four weeks consistent with published guidelines (16). Families were excluded if there was additional pulmonary disease or significant developmental delay in the child, or severe psychiatric/medical illness in either the caregiver or child.

Procedures

The appropriate Institutional Review Board approved this study. Potentially eligible children were identified through electronic health records of a medical center based on child age and asthma diagnosis. Research assistants contacted identified families over the phone and screened for eligibility using our inclusion/exclusion criteria. Eligible families completed a research session in their homes or in our research offices, depending upon family preference. Caregivers and children completed consent and assent forms; questionnaires were administered separately to caregivers and children by trained research assistants. Families received compensation for their time.

Measures

Background information—Caregivers reported child age and gender, caregiver race/ethnicity, monthly household income, family size, and whether children were prescribed daily controller medication.

Asthma control—Families completed the Asthma Control Test (ACT) (17) which assesses frequency of daytime and nighttime asthma symptoms, activity limitation, and perception of disease control. Higher scores indicated better asthma control.

ED visits—Caregivers reported on the number of child ED visits due to asthma in the previous 12 months. There were three categories of ED visits: none, 1–2 visits, and 3 or more visits in the last 12 months.

Caregiver QOL—Caregivers completed the Pediatric Asthma Caregiver Quality of Life Questionnaire (PACQLQ), a 13-item measure assessing QOL related to child asthma (18). Although other QOL measures exist, we selected the PACQLQ given that it is the only valid, asthma-specific measure that allows caregivers to report on their own level of QOL as it relates to having a child with asthma (18). Responses on the PACQLQ ranged from 1 (*all of the time/very, very worried/concerned*) to 7 (*none of the time, not worried/concerned*); higher scores indicated better QOL. The PACQLQ included two subscales: activity limitation (4 items) and emotional function (9 items). Cronbach's alpha of .90 for overall QOL, .85 for the emotional function subscale, and .83 for the activity limitation subscale were reported.

Acculturation—The African American Acculturation Scale-Revised (AAAS-R), a 47-item measure, was completed by caregivers (19). Responses ranged from 1 (*totally disagree*) to 7 (*totally agree*). Higher scores indicated greater identification with traditional African American beliefs and values (e.g., less acculturation to the dominant culture), whereas lower scores indicated greater acculturation to the dominant culture (e.g., less immersion in African American culture). Overall and subscale scores were generated. The eight subscales were theoretically derived dimensions of African American culture and include: religious beliefs and practices, preferences for things African American, interracial attitudes, family practices, health beliefs and practices, cultural superstitions, racial segregation, and family values. See Table 2 for a description of subscales (10), the range of scores for our sample, the range of scores possible on the measure, and Cronbach's alphas for this sample.

The AAAS-R is a revision of the original 74-item AAAS (20). The original AAAS was validated in a sample of 183 adults (118 African American). Twenty-six items that previous participants found “objectionable” were dropped when the scale was revised; factor analysis was used to determine the eight subscales resulting from administration of the retained items among 520 participants (19). The validity of the AAAS-R was established by dividing participants into three segregation groups (e.g., low, moderate, high) based on racial segregation subscale scores (i.e., extent to which a person grew up and lives in an African American neighborhood) (19). Scores on all other AAAS-R subscales (e.g., family values, interracial attitudes) differed significantly across the three segregation groups in the expected direction; participants living in predominately African American neighborhoods had scores on other subscales that were indicative of more traditional African American values and beliefs. Thus, the AAAS-R was included in this study because it is one of the only well-established measures of acculturation specific to African American individuals.

Statistical Analysis

Analyses were performed using IBM SPSS Version 21.0 (IBM Statistical Product and Service Solutions 21.0; IBM Corp., Armonk, NY). Correlational analyses were used to test continuous variables (e.g., family size, child age, asthma control scores) as covariates in associations with the PACQLQ and AAAS-R. An analysis of variance (ANOVA) was used to determine differences in the PACQLQ and AAAS-R across income level and caregiver type (e.g., mother, father, grandmother). Pearson correlational analyses were used to test associations between the PACQLQ and AAAS-R, controlling for covariates as appropriate. An Analysis of Variance (ANOVA) was used to test for differences in caregiver QOL scores across number of child ED visits. Bonferroni adjusted post hoc analyses were used to pinpoint differences between groups; eta squared (η^2) was reported as the effect size estimate.

Results

In this sample, mean overall QOL from the PACQLQ was 4.90 (SD = 1.40; Range 1.92 to 7.0), mean QOL on the emotional function subscale of the PACQLQ was 5.05 (SD = 1.39; Range 2.0 to 7.0), and mean QOL on the activity limitation subscale of the PACQLQ was 4.56 (SD = 1.77; Range 1.0 to 7.0). See Table 2 for descriptive information on the AAAS-R, including the sample mean, obtained range of scores, possible range of scores, and Cronbach's alpha for the total and subscale scores. No significant covariates emerged.

Caregiver QOL and Level of Acculturation

Correlational analyses revealed a significant association between overall QOL scores and the Religious Beliefs and Practices subscale of the AAAS-R ($r = .288$, $p = .033$), such that better caregiver QOL was associated with more traditional African American religious beliefs and practices (see Table 3). Higher QOL scores on the emotional function subscale were associated with more traditional African American religious beliefs and practices ($r = .333$, $p = .013$) and more traditional African American family values ($r = .306$, $p = .023$).

Caregiver QOL and Child ED Visits Due to Asthma

Overall QOL and subscale scores differed across number of ED visits such that higher QOL was found in caregivers whose children had not been to the ED due to asthma in the last year (see Table 4).

Discussion

Acculturation and QOL

Our study provides preliminary support for the association between acculturation and QOL related to pediatric asthma among low-income, urban African American caregivers. Specifically, we found that caregivers with more traditional religious beliefs and practices experienced higher overall QOL and scores on the emotional function subscale, and that caregivers with more traditional family values reported higher scores on the emotional function subscale. These findings were counter to our hypothesis; we expected that caregivers who were less acculturated would experience worse QOL due, in part, to prior research (7) and the potential stress associated with adhering to traditional values in the context of majority culture (14).

For African American caregivers, our findings suggest that less acculturation tied specifically to religious beliefs/practices and family values may serve a protective role in reducing the burden associated with caring for children with asthma. African American caregivers who hold more traditional values tied to religion may be better able to adapt to their child's asthma through "religious coping" (21). Religious coping has been defined as using religiosity to cope with stressors and to provide comfort during such times, often seeking guidance from a higher power (e.g., God) (21). Further, in traditional African American families, families are defined more broadly to include extended family networks that offer support and play a role in the care of children (22). For families of children with asthma, this may include extended family support related specifically to caring for a child with a chronic disease (e.g., symptom management). Thus, African American caregivers who hold more traditional religious beliefs/practices or family values may experience their child's asthma as less burdensome and experience better QOL.

Furthermore, our study demonstrates the importance of recognizing heterogeneity in acculturation across urban, African American caregivers. To our knowledge, this is the first study to specifically consider acculturation in African American caregivers of children with asthma. Consistent with previous reports (19), we did not find an association between the AAAS-R and income level, suggesting that the scale captured aspects unique to African American culture and not socioeconomic status. We also found a range in level of acculturation reported by our sample; means on the AAAS-R scales were similar to those of a previously published report of health behaviors related to diet (10) and the original validation study of the revised AAAS (19). Healthcare providers and researchers working with African American families should consider level of acculturation versus relying solely on a caregiver's self-identified racial or ethnic background. As seen in this study, families will vary on how much they self-identify with their culture, which may have implications for their ability to cope with a particular health condition, such as childhood asthma.

QOL and Child ED Visits

We found a significant association between caregiver QOL and child ED visits. Specifically, we found lower levels of QOL in caregivers of children who had had at least three ED visits due to asthma in the last 12 months as compared to caregivers of children that did not have any ED visits due to asthma in the last 12 months. The difference between QOL in caregivers of children with none versus three or more ED visits was at least .50 on overall QOL and both subscales. A difference of .50 is considered the minimally important difference threshold for QOL scores (23). Previous reports have documented an association between QOL and ED visits in Latino caregivers in mainland US and caregivers in Island Puerto Rico (3). Results of this study suggest that a similar association may exist among African American families in that caregivers who experience low levels of QOL may be more likely to take their child to the ED. One possible explanation for this association is that when caregiver QOL is compromised, caregivers may have fewer emotional resources to appropriately care for their child's asthma at home (24).

Limitations

Our study had several limitations, including that it was a cross-sectional study and correlational in nature. We were unable to determine directionality between acculturation and caregiver QOL and between caregiver QOL and ED use. We have suggested that lower caregiver QOL may contribute to increased ED use; it is also the case, however, that more frequent ED visits may contribute to decreased caregiver QOL. Our sample size was also limited and may have been underpowered to detect significant associations between variables of interest. The AAAS-R and PACQLQ were both self-reported measures completed by the caregivers at one time point. Self-report measures are subject to social desirability and given that caregivers completed both measures, method bias is a potential concern. Caregivers also reported on the number of child ED visits in the last 12 months.

Furthermore, we defined acculturation and QOL through the use of well-established measures (e.g., AAAS-R, PACQLQ). However, it is possible that other social and cultural factors (e.g., racial identity) that were not accounted for in our study may have influenced our assessments of acculturation and QOL. Our study did not take into account the potential influence of caregiver mental health on our outcome variables. Additionally, this study was focused on caregivers of school-aged children from 7–12 years of age. Associations between acculturation and caregiver QOL may be different for caregivers of young children or adolescents. Finally, as children in the study had persistent asthma, findings may not generalize to caregivers of children with exercise-induced asthma.

Future Directions and Clinical Implications

Our study provides preliminary support for the importance of considering level of acculturation as a correlate of caregiver QOL among urban, African American families. Further investigation is warranted to confirm the association between acculturation and caregiver QOL in larger samples of African American families of children with asthma, as well as the mechanism of this association. It may be that caregivers with more emotional support, such as through extended family or churches, are better able to cope with the stress of managing their child's asthma and, therefore, have a higher QOL score on the emotional

subscale. We suggest that future research include a comparative group of caregivers as well (e.g., non African-American) to determine how family values, including religious beliefs, may be associated with QOL among caregivers from other backgrounds.

Future studies should also consider whether other aspects of acculturation are associated with caregiver QOL, as our findings are specific to religious beliefs/practices and family values. For instance, higher levels of acculturation and limited opportunities to socialize with individuals of the same cultural group has been associated with an increased risk of lifetime psychiatric disorders among African American adults (25). Qualitative approaches, including in-depth interviews and focus groups, may serve useful in further understanding the association between acculturation and caregiver QOL, as well as processes and decisions specific to ED use within families. Aspects of daily asthma care should also be considered in the association between acculturation and caregiver QOL. For instance, the use of complementary and alternative medications (CAM) are often prevalent among African American families and have been linked to poorer asthma control among children (26). We also suggest that future research consider how caregiver anxiety and/or depression may influence the association between acculturation and asthma-related caregiver QOL in larger samples of African American families.

Finally, our study highlights the clinical utility of QOL assessments in the treatment of pediatric asthma. Level of caregiver QOL may have implications for ED use among African American children with asthma. Future research should continue to examine factors, including acculturation, which may influence caregiver decisions related to ED utilization, especially among caregivers with low QOL. Healthcare providers and clinicians may wish to include discussions about caregiver burden and functioning in their routine visits with pediatric patients. Discussions related specifically to caregiver QOL and adaptation to child asthma may identify families of children at increased risk for emergent care utilization. Further, a continued focus on improving caregiver QOL in African American caregivers may be one way to minimize pediatric asthma disparities.

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Table 1

Child and Caregiver Demographic Characteristics (n=55 dyads)

Demographic variable	
Child	
Age, mean year (SD)	9.67 (1.50)
ED visits in last 12 months, n (%)	
0 visits	17 (31%)
1–2 visits	23 (42%)
3 or more	15 (27%)
Asthma Control Test (ACT) scores, mean (SD)	19.05 (5.06)
Prescribed controller medication, n (%)	37 (67%)
Caregiver	
Biological mother, n (%)	45 (82%)
Family size, mean (SD)	4.33 (1.63)
Monthly income, n (%)	
< \$1,000	20 (38%)
Between \$1,000 and \$1,999	14 (26%)
Between \$2,000 and \$3,999	15 (28%)
> \$4,000	4 (8%)
Marital status, n (%)	
Married	9 (16%)
Separated	4 (7%)
Divorced	3 (6%)
Widowed	2 (4%)
Never married	37 (67%)
Education (highest grade completed), mean (SD)	12 th (2 grades)

Table 2

Caregiver scores on the AAAS-R (n = 55)

Survey score, # items	Mean (SD)	Range for sample	Range possible	Cronbach's alpha
Total AAAS-R score, 47 items	194.62 (32.33)	72–248	47–329	.83
Subscales:				
Religious Beliefs and Practices (agreement with traditional African American religious beliefs and practices), 10 items	54.27 (10.93)	25–70	10–70	.75
Preferences for things African American (such as media and people), 9 items	32.56 (10.23)	12–59	9–63	.72
Interracial Attitudes (agreement with traditional attitudes about whites), 7 items	14.67 (7.80)	7–34	7–49	.83
Family Practices (participation in traditional African American family practices such as informal adoption), 4 items	15.09 (7.57)	4–28	4–28	.69
Health Beliefs and Practices (agreement with cures and beliefs defined as traditional or “folk”), 5 items	20.67 (6.55)	5–35	5–35	.56
Cultural Superstitions (agreement with traditional African American cultural superstitions), 4 items	13.98 (7.06)	4–28	4–28	.73
Racial Segregation (whether the person grew up and currently lives in a mostly African American environment), 4 items	20.18 (6.79)	4–28	4–28	.72
Family Values (agreement with traditional values of African American families), 4 items	23.18 (4.51)	4–28	4–28	.52

Note. Higher scores indicate greater identification with traditional African American values (e.g., less acculturation).

Table 3

Pearson's correlations (r) between PACQLQ and AAAS-R scores

AAAS-R scores	Overall QOL	Emotion Function Subscale	Activity Limitation Subscale
Total Score	.17	.20	.07
Religious Beliefs and Practices	.29 *	.33 *	.15
Preferences for things African American	.13	.10	.16
Interracial Attitudes	-.14	-.10	-.17
Family Practices	.01	.07	-.10
Health Beliefs and Practices	.11	.14	.02
Cultural Superstitions	.04	.03	.05
Racial Segregation	-.05	-.06	-.01
Family Values	.26	.31 *	.12

*
 $p < .05$

Table 4

Mean PACQLQ scores by number of child ED visits

	No ED Visits ^a (n=17)	1-2 ED Visits ^b (n=23)	3 or more ED Visits ^c (n=15)	<i>F</i>	<i>p</i>	η^2	Post hoc comparisons
Overall Caregiver QOL, <i>M</i> (SD)	5.39 (1.29)	5.08 (1.51)	4.06 (.98)	4.45	.016	.15	a>c; a=b
Emotion Function Subscale	5.52 (1.33)	5.21 (1.52)	4.28 (.95)	3.71	.031	.13	a>c; a=b
Activity Limitation Subscale	5.12 (1.71)	4.79 (1.83)	3.57 (1.39)	3.78	.030	.13	a>c; a=b

Note. PACQLQ=Pediatric Asthma Caregiver Quality of Life Questionnaire; higher scores indicate better quality of life (QOL). Bonferroni adjustments were made for post hoc comparisons.