
Barriers to Physical Activity

Qualitative Data on Caregiver–Daughter Perceptions and Practices

Penny Gordon-Larsen, PhD, Paula Griffiths, PhD, Margaret E. Bentley, PhD, Dianne S. Ward, EdD, Kristine Kelsey, PhD, Kenitra Shields, BA, Alice Ammerman, DrPH

Background: There is little research on household and physical environment barriers to physical activity, particularly in minority populations at high risk for obesity and inactivity. Few studies include data on caregiver and daughter dyads. Formative data were used to develop intervention strategies and pathways for the *Girls Rule!* obesity prevention intervention, in under-studied high-risk pre-adolescents.

Methods: Participants included 12 African-American girls (mean age 7.8 years) and their 11 primary female caregivers (mean age 41.8 years)—eight mother–daughter dyads and three grandmother–granddaughter dyads—for a total of 51 interviews across 23 participants interviewed from April to October 2000.

A qualitative approach was used for 51 semistructured in-depth interviews with 11 dyads (female caregiver and girl), consisting of up to three interviews per respondent (mean=2.4 interviews per respondent). Interviews were transcribed, coded, and systematically analyzed between January 2002 and January 2003 to identify recurrent patterns and themes related to physical activity.

Results: Findings indicate clear preference of the girls for sedentary, rather than active, behaviors. Caregivers were unaware of the amount of TV viewed and found positive benefits of TV viewing, including safe supervision of their daughters. Barriers to physical activity include perceived lack of affordable and accessible recreation facilities and low caregiver motivation. Potential intervention strategies identified by respondents include walking for exercise and transportation and several low-cost, favored physical activities, such as hopscotch, jumping rope, and dance.

Conclusions: These findings point toward several physical activity and obesity intervention strategies that can guide obesity prevention efforts.

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Introduction

Childhood obesity has increased dramatically in the United States,^{1–4} particularly among African-American females^{1,3,5} who have higher inactivity relative to non-Hispanic whites.⁶ It is suggested that activity is more important than diet in obesity etiology in this population.⁷ Approximately 36.7% of African-American girls aged 6 to 11 years are at risk for or overweight, compared to the population average of 27.8%.⁸ Overweight tracks from childhood through adolescence and into adulthood⁹; physical activity declines with age and pubertal development among

girls,^{10,11} especially African-American girls.¹² Health consequences of childhood overweight include psychosocial and cardiovascular risks.¹³

Overweight parents create obesigenic household environments.^{14–16} Diet and lifestyle patterns are initiated during early childhood,¹⁷ and family support and encouragement are strongly and consistently associated with childhood physical activity.^{18–20} Intervention research shows positive fitness changes associated with home- and community-based physical activity programs,²¹ with recent focus on family-based interventions.²² However, interventions have not been adequately successful in bringing about health behavior change because of a failure to identify appropriate mediating variables.²³

Qualitative data are extremely valuable for providing insight into health determinants.^{24–27} Collection of qualitative data in **both** caregivers and their children provides a rich description of the context within which diet and activity choices are made.^{26,28} Despite these strengths, there is minimal empirical research on pat-

From the Department of Nutrition (Gordon-Larsen, Bentley, Ward, Kelsey, Ammerman), Carolina Population Center (Gordon-Larsen, Bentley, Shields), and Center for Health Promotion and Disease Prevention (Ammerman), University of North Carolina, Chapel Hill, North Carolina; and Department of Human Sciences, Loughborough University (Griffiths), Loughborough, Leicestershire, England

Address correspondence and reprint requests to: Penny Gordon-Larsen, PhD, Carolina Population Center, CB#8120, University of North Carolina, Chapel Hill NC 27516. E-mail: pglarsen@unc.edu.

Table 1. Themes and subthemes derived from Girls Rule! caregiver–daughter dyad formative research

Sedentary behaviors

- Caregivers control quality rather than quantity of TV that their daughters watch.
- Caregivers are generally unaware of the amount of TV their daughters watch.
- Girls prefer sedentary, rather than physically active, behaviors with clear preference for TV viewing.
- TV is perceived to fill an important role as safe and affordable child supervision.

Barriers to physical activity

- Perceived environmental barriers, such as lack of affordable and accessible recreational resources, were believed to reduce opportunities for physical activity.
- Caregivers are poor role models for a physically active lifestyle, and acknowledge their own low motivation to be physically active.

Directions for intervention

- Girls identified low-cost, low-equipment physical activities as enjoyable, such as hopscotch, jump rope, dancing, swimming, and bicycling.
- Walking for exercise and transportation emerged as a potential caregiver–daughter shared physical activity.

terns of activity among caregiver–daughter dyads. The aim of this qualitative research is to explore perceptions of sedentary behaviors, barriers to and facilitators of physical activity, and directions for intervention factors in this high-risk population.

Methods

Study Design

Girls Rule! is a church-based pilot program including formative research (April to October 2000) to inform an obesity prevention program (July 2001 to November 2002) for African-American girls, aged 6 to 9 years, and their primary female caregivers.^{29,30} Key elements from the formative data collection were used to design age-appropriate and culturally appropriate intervention strategies to be implemented among African-American caregiver–daughter dyads.

Sample

Participants were recruited in a North Carolina church representative of the subsequent Girls Rule! intervention churches (medium income, suburban neighborhood). Church pastors and liaisons disseminated screening questionnaires in their churches. Study personnel followed with phone calls to further explain the project and to schedule the consent appointment and first interview. Eligible respondents included households with a female caregiver and a female child aged 6 to 9 years; all eligible and willing dyads were included. The formative research sample included multiple face-to-face semistructured, in-depth interviews with 12 African-American girls (mean age 7.8 years) and their 11 primary female caregivers (mean age 41.8 years), for a total of 51 interviews across 23 participants and 11 caregiver–daughter dyads (eight mother–daughter, and three grandmother–daughter pairs). Data collection followed informed consent procedures established by the University of North Carolina’s School of Public Health Institutional Review Board.

Instruments

Pilot data indicated approximately 180 minutes of interview time, divided into three 60-minute parts, given caregiver schedules and the girls’ attention span. The three semistructured interviews included (1) diet and correlates; (2) activity

and correlates (including activity and TV recall); and (3) potential intervention activities and strategies. The present study focused on physical activity, neighborhood characteristics, and caregiver–daughter shared activities, largely from the second and third interviews, although all three interviews were searched. Up to three interviews per respondent were conducted (mean of 2.4 interviews per respondent); however, not all dyads completed all three interviews due to completion of all data collection within two interviews or missing data. Four interviewers, working in two pairs (consistent across dyads), used an interview guide to conduct concurrent interviews with caregivers and daughters in separate rooms. Detailed field notes were taken during interviews.

Data Analysis

Data were analyzed between January 2002 and January 2003. All interviews were recorded and transcribed, and then entered as text and coded using QRS NUD*IST (NVIVO Software for Qualitative Research, London, 1998). Text data were carefully read and systematically analyzed by investigators to identify recurrent activity-related patterns and themes originating from the research team’s original research questions and hypotheses.^{31,32} Individual researchers read all interviews and the team evaluated main codes and text samples to support the codes.

Coded text was extracted from all interviews and comparisons made across data using a matrix-based analysis approach,³² which allows systematic analysis of the data and avoids selectivity. The matrices allow both responses and lack of responses regarding a particular code to be examined across cases.²⁶ Analysis protocol included checks for consistency between codes and coding of interviews, including double coding (by two coders) half of the interviews to ensure agreement and consistency. Cases of disagreement were discussed to generate consensus on coding.

A total of six major categories related to physical activity were identified: (1) shared activity (two subcategories); (2) barriers to activity (eight subcategories); (3) knowledge of the health-promoting effects of activity (four subcategories); (4) need for change in activity (three subcategories); (5) facilitators to activity (six subcategories); and (6) control of behaviors related to activity by caregivers (three subcategories).

Results

Three important themes (Table 1) identified through the six major thematic categories included: (1) sedentary behaviors, (2) barriers to physical activity, and (3) potential intervention strategies. Selective, representative quotations are presented below.

Sedentary Behaviors

Findings indicate that caregivers were more concerned with the **types** of TV programs, as opposed to quantity of TV, watched by their daughters. For example, when asked about the amount of time spent watching TV, a caregiver stated, "It's fine as long as she watches kids' shows." Another caregiver stated, "They are limited in what they can watch, but we don't limit how much they can watch." Viewing rules also included completion of homework, without regard for quantity. A daughter noted, "I have to do my homework before I watch TV. If I don't do my homework, I don't watch TV." Caregivers reported that TV filled an important role as a "baby-sitter," indicating no advantages for turning the TV off. For example, a caregiver stated, "So it's [TV] pretty much to pacify them [the children] while I'm getting something done."

Caregivers reported that the girls watched a substantial amount of TV. For example, "I would say an hour or 2 hours at the most [after school] . . . 1.5 hours [after dinner]," and on the weekend, "If it's raining outside, all day," were reported by two different caregivers. In general, caregivers did not find the quantity of TV that their daughters viewed to be an issue; several caregivers made statements such as, "I don't think she needs to reduce it," "I think it's the right amount," and "I don't think they watch it an excessive amount of time." The girls were under the impression that there were no limits on TV quantity, and statements such as, "I can just stay up and watch TV," and "I don't think so. I don't know [whether there are rules around TV use]." There was also a clear disjunction between the caregivers' perceived control of TV and reported TV viewing. For example, one caregiver stated that her daughter watched 2 to 3 hours TV total on the weekend, while her daughter stated that she watched TV from "8:00 AM . . . until I fall asleep." One caregiver expressed dismay when she actually counted the number of hours of TV that her daughter watched, stating "3 hours a day, yes, that would be like 8 shows. Wow. I don't think she watches that much."

The majority of girls indicated that they did not like to play outdoors and preferred to watch TV, making statements such as "[my favorite thing is to] lay down and watch TV," and choosing to "[p]lay games, play on the computer . . ." rather than outdoor activities. Caregivers also stated that although they try to encourage their girls to play outside, they "can't get them to go

outside." The girls reported using TV to meet specific needs, such as falling asleep or as a pick-me-up when feeling sad (e.g., "I have to look at the TV when I go to bed because it's the only way to get me to go to sleep"). If not watching TV, there was indication of substitution of other sedentary behaviors. As one caregiver reported, "Oh yeah, she'd find something else to do. If I said 'no TV,' they would run to that computer."

Barriers to Physical Activity

Perceived lack of recreation-related neighborhood and household facilities and equipment was an issue. One caregiver stated, "I have tried to get [my daughter] in several activities at the park recreation department. They don't get enough kids so she can't get involved because enough kids don't sign up." Another stated, "[I would like to see] a lot more organization and a lot more availability for minorities. There is nothing around here at all. And what there is to do, half the time we can't afford it." Caregivers reported that their neighborhoods were considerably nonconducive to an active lifestyle. Common statements included: "(The traffic) is very bad . . . to be honest that's why I don't walk a lot," "I don't feel safe . . . people fly up and down the hill and act like the children are not there," and "We have also posted on our street 'no 18-wheeler trucks,' but they continue to come up the street." Several caregivers reported lack of sidewalks and streetlights in their neighborhoods, dogs that were not properly restrained, and drinking and vagrancy. Other issues included the lack of same-age children in the neighborhood and unwillingness of parents to allow their children to play outside unsupervised.

The lack of role modeling of an active lifestyle was identified as a key theme. A large number of caregivers reported that despite knowledge of positive health benefits, they did not have the motivation to be physically active. One caregiver stated, "I'm the one who is lazy and I can't make her run outside and make her do exercise while I sit there and watch TV. So I can't blame her if she wants to come inside and watch TV because she learns from example." Another caregiver stated, "I can hear my body telling me to get outside . . . I can literally hear it telling me what I need to do and I'm not listening. I enjoy being myself and sitting still." Several caregivers reported that they did not participate in active games or use recreational facilities with their daughters, stating, for example, that while at parks or playgrounds, they just "observe."

Directions for Intervention

The girls identified a number of physical activities that they particularly liked and were potentially good candidate intervention activities. Favorite activities included hopscotch, jumping rope, dancing, swimming,

and bicycling. Other activities mentioned included soccer, basketball, skating, or riding a scooter.

In addition to the activities that the girls identified that they liked doing on their own or with their peers, the caregivers and girls were also asked to identify activities that they could enjoy participating in together. Interestingly, this question identified far more sedentary activities (e.g., watching TV and eating) than physical activities. The top choice of shared activities, among caregivers of all ages, was walking for exercise and transportation. The caregivers made statements such as the following: "If we are going to the game that day, we will just walk on down to Kenan stadium." "We might walk to the store once or twice a week together." "I think [that] . . . walking and taking some time for yourself physically and mentally are important." In other cases, walking was seen as a physical activity purely for exercise purposes. One caregiver said, "I think that's very important, family group kind of things where you get exercise." Another caregiver stated, "I only see myself walking [for exercise]."

Despite this interest in walking, walking was not an activity that was regularly included in their schedules because of time, motivation, or pedestrian safety. One caregiver reported, "[Walking] is not a routine." Another caregiver reported, "Now we used to try and walk at least two nights a week . . . That didn't last . . . but a month." While a daughter stated, "Yeah, I love going on walks. But as a matter of fact, you get too hot and sweaty."

Discussion

The findings suggest that there are many household and environmental factors predisposing these girls to inactivity. The girls reported frequent participation in, and enjoyment of, sedentary behaviors, largely watching TV. There were substantial perceived environmental barriers to activity (e.g., lack of facilities, lack of sidewalks, traffic safety) and caregiver and daughter motivational barriers, including preference for sedentary behaviors. However, findings point toward important potential intervention strategies, particularly within the caregiver–daughter relationship, likely to be acceptable in this and similar settings.

Frequency of TV viewing is high among U.S. children,^{6,33,34} particularly African-American youth.^{6,35} While not without controversy, TV viewing has been shown to be associated with overweight.^{33,36,37} That the children in this study already selectively seek out and prefer sedentary pastimes, such as TV viewing, speaks to the critical need for educational and intervention strategies with children (and parents) at a very young age. The caregivers perceive disadvantages to reducing TV time for their daughters; thus, intervention strategies must also involve safe and inexpensive child care and/or supervision.

Inactive children are likely to remain inactive throughout childhood, adolescence, and young adulthood,^{38–40} and are at high risk for obesity. Prepubertal girls have lower physical activity levels than do boys,^{41,42} with declines in activity starting at around age 9 to 10 years⁴² and continuing throughout adolescence and young adulthood.^{11,43–46} Minority adolescents, particularly girls, have especially low levels of moderate-to-vigorous physical activity.^{6,11,12} Early intervention is critical.

Although the sample is small, this study uses detailed qualitative information from caregivers and daughters that is exceedingly rare. Limitations included no direct measures of physical activity and anthropometrics. However, the aim of the research was to examine the underlying factors related to obesity prevention, sedentary behaviors, barriers to physical activity, and directions for interventions, objectives for which qualitative data are most suited. In addition, accurate behavior data from recall surveys are notoriously difficult to obtain from preadolescent children.⁴⁷

Findings from this qualitative assessment provide significant insight for the development of the Girls Rule! intervention and can help inform similar obesity prevention efforts in this very high-risk and understudied population. Clearly caregivers play a crucial role, both in terms of their own behavior modeling and control or influence over the household environment. Perceived parental enjoyment of physical activity is particularly important in encouraging girls to be active.²⁰ It is apparent that many caregivers are not aware of the amount of time that their daughters spend watching TV, and actually find TV to fill a beneficial role as safe and inexpensive "baby-sitting." The disadvantages to TV viewing reduction and preferences for sedentary behaviors must be addressed in intervention efforts, as these are strong barriers to reducing inactivity.

There is a perceived lack of affordable and culturally appropriate neighborhood recreational programs and facilities to provide the necessary opportunity and impetus for physical activity for these African-American girls. Indeed, there is great recent attention to such environmental correlates,^{48–52} and empirical research shows a positive link between recreation facilities and activity patterns.^{53,54} There is also a clear need to address individual barriers, such as motivation for activity and preference for inactivity. Many of the girls stated a preference for sedentary activities, but also described active play and games (such as jumping rope and dance) that they enjoy, particularly when part of a broader social experience.

Responding to these insights, the Girls Rule! intervention included activities of preference and initiation to new activities. Sessions with the caregiver and daughter were held concurrently, providing supervision and activity opportunities for the daughters. Educational

What This Study Adds . . .

Qualitative data are important to the development of health behavior interventions.

This paper presents qualitative data on household and environment barriers to physical activity in African-American, female caregiver–daughter pairs, providing a rich description of the context within which physical activity choices are made.

efforts for caregivers included positive role modeling, strategies to reduce TV, and fitness sessions. Girls and caregivers were encouraged to go on walks together as a way to motivate each other and enjoy family time together—choosing walking trails, shopping malls, and other avenues where poor sidewalks and traffic issues were not barriers.

Conclusions

Findings highlight considerable individual and environmental barriers to activity among African-American female pre-adolescents. Potential intervention strategies include raising caregiver motivation for physical activity, increasing awareness of the importance of activity, countering perceptions of the positive role of TV, and increasing affordable and accessible physical activity options at the environment (e.g., sidewalks, traffic safety) and individual levels (e.g., low-cost activities, such as jumping rope, hopscotch, and walking).

We have no competitive interests. Our involvement follows: PGL and PG drafted the manuscript; PGL, PG, MEB, DSW, and AA participated in study design; KK and KCS were involved in data collection; PGL, PG, and MEB were involved with data analysis and interpretation; and all read and approved the final version of the manuscript.

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