

A qualitative study of parental modeling and social support for physical activity in underserved adolescents

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Abstract

This study obtained qualitative data to assess how parental role modeling and parental social support influence physical activity in underserved (minority, low-income) adolescents. Fifty-two adolescents (22 males, 30 females; ages 10–14 years, 85% African-American) participated in a focus group (6–10 per group, same gender). Focus groups were audiotaped, transcribed and coded by independent raters. Inter-rater reliabilities indicated adequate agreement [inter-rater reliability (r) = 0.84]. Themes were identified for parental role modeling and parental social support. Regarding parental role modeling, adolescents reported that parents engaged in a variety of different types of physical activities with their children such as walking, cycling and playing basketball; however, activity was infrequent. Sex differences were noted in parental social support indicating that female adolescents reported receiving more emotional and negative support for physical activity (being required to play outside with a sibling), while

boys reported receiving more tangible types of support for physical activity. Adolescents also generated ideas on how to increase parental social support and in particular tangible support was highlighted as important by both males and females. This study suggests that future interventions should focus on improving parental engagement and tangible support that involve direct participation from parents in physical activities with their adolescents.

Introduction

Childhood obesity is a major public health problem in the United States, with prevalence rates increasing dramatically for children and adolescents, particularly among minority ethnic groups [1–2]. Minority adolescents have consistently demonstrated higher levels of inactivity and lower levels of physical activity than non-minority adolescents [3]. Increasing physical activity levels among youth has been an important national agenda [4]. Research indicates that children and adolescents who participate in higher levels of physical activity are less likely to display risk factors for cardiovascular disease [5, 6], more likely to have positive weight regulation [7, 8] and improved psychological well-being [9]. With unprecedented increases in the prevalence of overweight and obesity among minority adolescents [1, 2], there is urgent need for understanding how to effectively increase physical activity to reduce the incidence.

To develop effective physical activity interventions in youth, determinants of activity levels need to be better understood. Numerous demographic,

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psychological, social and physical environmental variables correlate with youth physical activity [10, 11]. Of particular interest are parental influences that include parental support, through providing both social relationships (e.g. directly supportive words), interpersonal transactions (e.g. actions) and active role modeling. Social support has been defined as aid and assistance exchanged through social relationships and interpersonal transactions [12]. Two types of social support [13] were of interest to the present study: emotional (expressions of empathy, love, trust and caring) and tangible support (help through tangible services or aid). Previous research has shown that boys' socialization emphasizes autonomy, self-reliance and independence, and they seek out and prefer tangible support [14]. In contrast, girls have been characterized as more expressive and comfortable with intimacy, and more likely to seek out and prefer emotional support [14].

The conceptual framework for specifically studying parental social support and involvement in physical activity is an integrated approach that includes tenants from social cognitive theory [15] and Eccles work on parent-child interactions [16, 17]. Social cognitive theory explains behavior in terms of a reciprocal interaction of the environment, interpersonal factors and behavior. Based on the social cognitive theory, parental role modeling and parental social support should influence adolescents' physical activity because these variables provide resources that may increase a child's confidence in his/her ability to perform a behavior. According to Eccles and colleagues [16, 17], social environmental factors such as parent responsiveness in providing the type of social support that an adolescent needs is more likely to lead to positive behavior change than experiences that constrain an adolescent's behavior. Previous research has also shown that children's physical activity is influenced by their parent's beliefs about such things as the value of exercise for their children, success expectancies and goals and perceptions of their children's physical competence [17-19].

Support for the role-modeling hypothesis was found in the Framingham Children's Study [20].

The data indicated that children with two active parents were almost six times as likely to be active as children whose parents' were sedentary. The researchers speculated that the positive relationship between parents and children's physical activity could have been due to role modeling. Freedson and Evenson obtained similar results using a comparable protocol in their examination of familial aggregation in physical activity for young children and their parents [21]. Several studies of older aged children have also found positive correlations between physical activity within families [22, 23]. From a theoretical perspective, however, role modeling is somewhat limited in that it does not adequately address the psychosocial aspects of physical activity involvement and social support from parents. Although as adolescents get older they also increasingly seek peer support, some studies have shown families to have a continued important role in providing support to adolescents in the African-American families [24, 25].

Previous studies suggest that the association between social support and physical activity may be different for boys and girls. Parental support may be particularly relevant for girls; for instance, parent encouragement has been shown to influence activity patterns of girls to a greater extent than boys [26-28]. Similarly, Wu and colleagues [29] found that girls reported significantly more positive social support for physical activity from parents as compared with boys. One study, however, found that parents reported providing significantly higher levels of social support to boys as compared with girls [30]. Although minorities were included in some of the above studies, none of the previous studies solely focused on minority and low-income youth.

Previous studies by Wilson *et al.* [14, 24, 25] documented differential effects of the type of social support on adolescent African-American males and females across several different health behaviors. In these previous studies, boys demonstrated significantly lower blood pressure in response to the tangible social support than emotional support while girls showed more positive responses to either type of support [14]. In another study, girls who were compliant with health behavioral recommendations

reported receiving significantly higher levels of emotional family support than boys who were compliant [24]. More research is needed, however, that examines the relationship between sex and social support and how it relates to physical activity in minority and underserved youth [31]. The present study expands on previous research by specifically focusing on understanding the role of parental support and role modeling on sex differences in underserved adolescents' physical activity behaviors.

Methods

Participants and sampling methodology

Two principles of sampling, aimed at appropriateness and adequacy, were considered as part of the sampling framework [32]. Regarding appropriateness, a total of 10 groups (five male and five female) with up to seven participants per group were conducted at two middle schools in an urban county and the Department of Recreation and Parks in a rural county in South Carolina. These locations were chosen because they serve a large proportion of children from low-income families and they had an existing after-school program for sixth graders of age 10–14 years. Demographic data are depicted in Table I.

Because we sought to identify a wide array of parental influences, participants were recruited with varying levels of daily physical activity participation and living arrangements. Regarding adequacy, a total of 22 males and 30 females ($n = 52$) were needed to achieve data saturation. Data saturation occurred when no new information was ascertained from the respondents [32]. The University of South Carolina Institutional Review Board approved this study prior to participant recruitment. Students received a gift certificate worth \$5 for participation.

Focus group questions

Consistent with the work of Eccles *et al.* [16, 17] and social cognitive theory [15], focus group questions were developed for the present study to specifically expand understanding of parental social support and role modeling on physical activity in

Table I. Demographic and baseline characteristics

Variables	Numbers	Percentages
Geographic location		
Urban	28	54
Rural	24	46
Gender		
Males	22	58
Females	30	42
Age (years)		
10	2	4
11	11	21
12	31	60
13	6	12
14	1	2
Missing	1	2
Ethnicity		
African-American	38	73
Caucasian	8	15
Hispanic	1	2
Other	5	10
Free or reduced lunch program	45	87

underserved adolescents (see Table II). It was expected that parental role modeling and parental social support should positively affect physical activity in youth because these variables enhance a child's confidence in his/her ability to be active. The focus group questions with respect to role modeling were developed to explore what types of activities parents engaged in with their adolescents and how active their parents were on a daily basis. With respect to parental social support, several questions assessed what types of support (emotional, tangible and other) the adolescents perceived getting from their parents and what types of support they would like their parents to provide more frequently to assist them in being active on a daily basis. Several questions also probed about how adolescents and parents could be more active together (reciprocity). Finally, a question concerning environmental barriers was asked to determine how the home environment could be improved for the development of future interventions.

Focus group procedures

Four trained moderators conducted the focus group sessions, using a standardized protocol of questions

Table II. Focus group questions

Focus group questions	Social Cognitive Theory construct
1. What are some physical activities that you like to do after school?	Icebreaker
2. In what ways are you physically active with your brothers or sisters or any other kids that live with you?	Icebreaker
3. What types of physical activities do your parents do?	Role modeling
4. How do your parents/guardians help you to be physically active?	Social support
5. Out of all the ways that your parents/guardians help you be physically active, what ways do you like, dislike?	Social support
6. Are there other things that your parents/guardians could do to help you be more physically active?	Social support
7. Are you and your parents/guardians ever physically active together?	Reciprocity
8. Do you think your parents/guardians would feel good or bad if you asked them to do some kind of physical activity with you?	Reciprocity
9. What are some things that you think could make it hard for you to be physically active outside of school?	Environmental barriers

and probes (see Table II). Prior to conducting actual focus groups, the moderators attended a training workshop that outlined the key elements for conducting focus groups with adolescents and standardized the protocol for this specific study. In addition, all moderators role-played one focus group, using the list of questions for this specific study. Moderators were trained to use reflective listening to confirm the themes that the student participants expressed during the focus group sessions.

Ten focus groups (five male and five female) were conducted, five each at two separate middle schools and five at a Recreation and Parks Center. Each of the focus groups was composed of five to seven students. The focus group sessions were conducted in private rooms (e.g. classrooms). Prior to each session, research staff obtained informed consent from the parents and the child participants. Participants were told that their participation was voluntary and that they were not obligated to answer any of the questions they did not want to. At the beginning of each focus group session, all participants were asked to complete a short demographic survey. Staff assisted in separating friends into different focus groups at each site. Confidentiality of responses was stressed. The sessions lasted ~1 h and were audiotaped and transcribed verbatim to facilitate systematic analysis of the discussions.

Focus group analyses and interpretation

The 10 recorded focus group sessions were transcribed by an outside agency and checked for accuracy against original recordings. Before the coding of the transcripts, the research team created a coding scheme to identify and categorize themes related to parental role modeling and parental social support based on previous qualitative methods [33]. The coding scheme divided the focus group data into two ‘levels’. In the first level, the data were categorized according to sex and location (urban versus rural). The second level of categorization was based on the specific focus group questions. More specifically, the data were coded by responses to each specific question using the coding scheme as a guide. The research team also developed a set of decision rules to standardize the coding procedure. For example, if a participant stated that their parental social support was expressed through words of compassion, understanding, confirmation and acceptance (e.g. cheering for the child, praising the child’s efforts, watching the child play), the information was coded as emotional support. Tangible support was defined as providing resources or specific suggestions (i.e. problem solving) for being more active. An additional category of support was established that included negative approaches to receiving support such as being required to go outside

against one's desire to do so. After development of the coding scheme and the decision rules, four independent raters coded the transcripts. Inter-rater reliability was calculated on the basis of percent agreement [inter-rater reliability (r) = 0.84]. Before the analysis of the data, the raters met to discuss any discrepant codes until consensus was met in regard to the final codes.

The qualitative software QSR NVivo was used to perform content analyses of the themes derived from the focus group data. Each focus group transcript was imported into QSR NVivo as a rich text document. Next, the exact coding scheme used to code transcripts was developed in QSR NVivo. Each rich text transcript was then coded based on the consensus of coding pairs. Once codes were applied to all transcripts, QSR NVivo was used to extract coded participant responses by the matrix intersection of sex, location, question and response nodes. Separate analyses were conducted for boys and girls. Information provided by the participants was determined to be a 'theme' if more than half of the participants repeated the same or similar comment.

Results

Physical activity preferences

The participants were asked what types of physical activities they liked to do after school as an ice-breaker. In response, the majority of boys mentioned sport-related activities such as basketball, baseball, football and soccer. It should be noted that within the boy groups sedentary behaviors, such as playing video games, were mentioned despite the adolescents being told to focus on anything they do that makes them move, sweat or breathe harder. For girls, a wide range of physical activities were provided, which included both sports and recreational activities such as riding bikes, walking, jumping rope, swimming and basketball.

Parental role modeling

When asked 'what types of physical activity do your parents or guardians do', the adolescents consistently mentioned that their mothers engaged in

walking, riding bikes and running. Fathers were less likely to be mentioned as being active; however, when discussed, fathers participated in sports-related activities, such as basketball. Grandparents were also mentioned as being physically active; however, no specific themes were identified for the types of activities they participated in.

Parental social support

Table III provides a summary of the adolescents' perceptions of received versus desired types of social support given by parents/guardians. When asked how their parents/guardians helped them to be physically active, boys most commonly reported receiving tangible support such as getting rides to sporting activities. Girls most commonly also reported receiving tangible support, closely followed by negative and then emotional support. Although both boys and girls reported receiving tangible support, only the girls reported getting emotional support (encouragement) or negative support such as feeling forced to be active with siblings.

Table III. Perceived parental social support received versus desired

Themes	Example of statement
Boys' received support Tangible	'My dad gives me rides to my soccer games'.
Boys' desired support Tangible	'I want to play more basketball with my dad'.
Emotional	'If they say they are coming to watch they need to show up I never have anyone cheering for me'.
Girls' received support Tangible	'My mom took me to get my physical and signed me up to play basketball at the YMCA'.
Emotional	'She cheers for me and my sister sometimes like "Go Go You Got It".'
Forced	'She tells me to go outside and play with my sister'.
Girls' desired support Tangible	'I wish she would sign me up to play more things at the YMCA'.

Probing revealed that both boys and girls desired receiving more tangible support from parents/guardians. Boys most commonly reported wanting to be more physically active with their fathers, while girls most commonly reported wanting to have their parents sign them up to become more involved in sports. In addition to this difference, only the boys commonly said that they would also like to have more emotional support. As one male participant quoted ‘... I never have anyone cheering for me’.

Suggestions for improving parental support

Table IV provides of summary of the ideas that adolescents gave for increasing positive social support from parents/guardians. When adolescents were asked about other things their parents could do to help them to be more physically active, boys most commonly suggested giving more positive emotional support closely followed by tangible support. Although the boys wanted tangible support, a recurring theme was that they also wanted more creativity from their fathers when engaging in physical activities with them. Boys also indicated that having money would help them be more active. Girls most commonly suggested they would like parents/guardians to decrease the amount of negative or forced support, followed by increasing tangible support. Similar to the boys, the girls want

their parents to engage with them in different non-traditional ways of being active such as walking in different locations than they typically do with their parents/guardians. Girls also indicated that having money and engaging more directly in activities with their parents/guardian were also desirable. Based on the responses to probes, girls most commonly said that they were comfortable with the amount of emotional support that they were receiving.

Environmental barriers

When the adolescents were asked about the things that made it hard for them to be physically active outside of school, boys most commonly stated that it was not safe in their neighborhoods and that it was hard to be active when the weather was bad. Girls most commonly stated that being physically active was just not fun, followed closely by they had no one to play with, too much homework and were too tired often times to be active. When asked about the things that made it hard for their parents to be physically active with them, both boys and girls commonly stated that their parents work was a barrier, followed by being too busy doing other things and being too tired.

Discussion

The results of this qualitative study demonstrated that regarding parental role modeling, adolescents reported that parents engaged in a variety of different types of physical activities with them such as walking, cycling and playing basketball; however, this activity was very infrequent. Regarding parental social support, adolescents reported that parents helped them to be physically active through emotional support, tangible support and negative approaches (e.g. being required to go outside and play with a sibling). Sex differences were noted in parental social support indicating that female adolescents reported receiving more emotional and negative support for physical activity, while boys reported receiving more tangible types of support for physical activity. Adolescents also generated ideas on how to increase parental social support

Table IV. *Suggestions for increasing parental social support*

Themes	Example of statements
Boys' ideas	
Tangible support	'I wish there were different ways I could play so my Dad wouldn't beat me all the time'
Emotional support	'I wish they could cheer for me'
Girls' ideas	
Tangible support	'I want to walk around the mall with my mom instead of always around the block'
Forced support	'I wish my Mom would not make me be active'

for physical activity and in particular tangible support was highlighted although boys and girls had different ideas on the types of tangible support they wanted.

The present study showed that boys preferred sport-related activities such as basketball, baseball, football and soccer. For girls, a wider range of physical activity preferences was expressed, which included both sports and recreational activities (i.e. riding bikes, swimming and jumping ropes). These findings are consistent with a previous study that also found that boys usually prefer sport-related activities while girls more often prefer leisure activities when reporting their physical activity preferences [34]. Taken together, these findings have important implications for increasing parental understanding of sex differences in physical activity preferences. In particular, girls expressed interests in having their parents or guardians sign them up for more organized sport-related activities, while both boys and girls also indicated wanting more tangible support for physical activity in general. These findings expand on past research by emphasizing a greater need to provide opportunities and resources for physical activity in underserved adolescents [24–30]. Interestingly, the boys really preferred being active with their fathers rather than having more opportunities to be active on their own. Girls, in contrast, wanted more opportunities to be active in organized sports on their own.

The study findings also indicated that mothers were more active with their children than fathers. This finding is not consistent with a previous study that found fathers were more active with their children than mothers [20]. The present study, however, included older children as compared with this previous study. It is also important to note that a majority of the participants in this study lived in single-parent female-lead households. As a result, fathers may have been less likely to be seen engaging in physical activity, as a result of being absent from the home. Thus, future research should focus on developing parental support strategies that are feasible for single parents for increasing physical activity in minority and low-income adolescents. It is interesting to note that both boys and girls in-

dicated that they wanted their parents or guardians to be more directly engaged in physical activities with them.

The findings from this study demonstrate that social cognitive theory [15] and Eccles' work [16, 17] provided a useful framework for exploring how to expand resources for physical activity among adolescents in underserved populations. Parents play a key role for their children and can provide opportunities and encouragement to their youth for being physically active. Specifically, with respect to the social support findings in the present study, girls reported receiving a greater variety of types of social support from parents/guardians including negative support than boys. This finding expands on past literature that indicates sex differences in the type of social support that boys versus girls prefer and seek out. For example, although previous studies showed differential effects of type of social support on African-American males' and females' health behaviors [14, 24, 25], the present study indicates that tangible support is important to both boys and girls. The present study is consistent with previous studies in demonstrating that the boys were more likely to report receiving tangible support from parents or guardians while girls were more likely to report receiving both tangible and emotional support from parents or guardians. In contrast to previous studies, the findings from the present study suggest, however, that both boys and girls indicated that they preferred receiving more tangible support from their parents or guardians and that boys, in particular, would like them to engage more directly in physical activities with them. Interestingly, girls demonstrated a concern with being forced to engage in activities outside which were often times associated with caring for younger siblings. Future interventions should consider including components that specifically address expanding tangible support from parents for girls in particular such as paying fees to participate in organized group sports or physical activity opportunities.

This study had several limitations that need to be addressed. First, researchers assessed only the students' perceptions of parental role modeling, social support and barriers. To more completely understand

the role of parental role modeling and parental social support on physical activity in adolescents, it would have been useful to assess parental perceptions as well. Second, participants were allowed to volunteer for the study which limits generalizability. However, three separate locations were included in the present study to increase our reach in obtaining underserved youth. More specifically, the results may be generalizable only to other African-American and low-income adolescents, but not necessarily to adolescents of other ethnic backgrounds or who have families with higher income levels. Finally, given that the adolescents were interviewed in groups, this could have lead them to report more social desirable responses than if they had been interviewed individually.

In summary, the findings from this qualitative study suggests that parental role modeling and parental social support are important theoretical elements to consider in designing programs to increase physical activity among underserved adolescents and can inform specific intervention components and strategies for this particular population group. The study expands on past research by using tenants from social cognitive theory and Eccles' work [15–17] in understanding the specific role of parents in providing positive engagement in and support for their adolescents to be physically active. The findings from this study suggest that interventions should focus on improving parental engagement in activities with their adolescents and suggest that increasing positive tangible support for physical activity is important for both boys and girls. Future research is needed to develop family-based interventions that focus on developing positive social relationships and communication between adolescents and their parents. Incorporating social support strategies that promote direct parental involvement in activities seems a promising approach for future interventions targeted at underserved youth.

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Conflict of interest statement

None declared.

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