

# Family-Based Behavioral Treatment for Childhood Obesity: Caretaker-Reported Barriers and Facilitators

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**Background:** Family-based behavioral treatments are effective ways to promote children's weight management through healthy eating and exercise. However, programs typically have high attrition and low attendance. The aim of this study was to obtain in-depth caregiver input on barriers and facilitators to participate in a family-based, behavioral childhood obesity treatment program.

**Methods:** Three focus groups were facilitated among 21 parents/guardians at 2 school-based health centers and 1 federally qualified health center. Audio recordings were transcribed and uploaded into NVivo software to assist in thematic coding.

**Results:** Focus group participants were females aged 18-57 years, of whom 71% were black, and 81% were not married. Participants listed numerous barriers: lack of time, frustration from prior unsuccessful weight-loss attempts, and the perceived cost of healthy foods and exercise options. Facilitators included a convenient location, a supportive weight-loss program leader, and rewards for the child's progress.

**Conclusion:** Future interventions should incorporate caregivers' perspectives to develop sustainable, feasible strategies for the treatment of childhood obesity.

**Keywords:** Behavior control, community-based participatory research, focus groups, pediatric obesity, pediatrics, weight reduction programs

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## INTRODUCTION

A rapid increase in childhood overweight and obesity in the United States<sup>1</sup> has been mirrored by the early onset of obesity-related medical conditions.<sup>2</sup> Family-based behavioral treatments that concurrently target children and their caretakers are effective ways to promote weight management through healthy eating and exercise.<sup>3,4</sup> Not only are these behavioral interventions effective for children's weight loss,<sup>4,5</sup> but sustained weight loss has been documented for up to 10 years.<sup>6</sup>

The recommended initial treatment for children and adolescents with obesity is behavioral counseling<sup>7,8</sup> and compliance with behavioral change that increases the likelihood of sustained weight loss.<sup>9,10</sup> However, these programs are hindered by high attrition (27%-73% in a 2011 review<sup>11</sup>) primarily because of inconvenience, transportation difficulties, and scheduling conflicts,<sup>12,13</sup> barriers that may be exacerbated for poor and underserved populations.

The purpose of this study was to solicit parent/guardian input about important elements of a family-based pediatric weight-management program to identify barriers and facilitators to family involvement.

## METHODS

### Participants

A convenience sample of primary caretakers was recruited by their child's healthcare provider or support staff at 2 school-based health centers and 1 federally qualified health center attached to a hospital in the greater New Orleans, LA, area. Community stakeholders identified 3 clinic sites to elicit perspectives from caretakers across a variety of settings (ie, a rural elementary/middle school-based clinic, a suburban hospital outpatient clinic, and an urban high school-based clinic). Focus groups met in these 3 locations. Eligible participants were legal guardians or primary caretakers of a child between the ages of 2-19 years, who were able to understand and speak English and willing to be audio- and video-taped during the focus group discussion for transcription.

### Procedures

Upon arrival at the focus group location, parents/guardians provided written informed consent and completed a brief demographic questionnaire. Parents/guardians were told the purpose of the focus group was to gather parent/guardian perspectives on a weight-related healthy

lifestyle intervention for children to inform the development of future programs in their local clinics. Focus groups were moderated by 2 study staff members who led the focus group discussion with a series of open-ended questions intended to facilitate caretaker input on elements essential for a pediatric obesity intervention. The moderators followed a script of questions to optimize consistency across groups and focus the discussion. The discussion was audio- and video-taped to aid in later transcription. At the end of the focus group, each participant received a \$25 gift card as compensation. All study procedures were approved by the Pennington Biomedical Research Center Institutional Review Board.

### Measures

Participants completed a demographic survey about themselves and their child that assessed age, height, weight, race, marital status, education level, income level, and a basic medical history. Body mass index was calculated for adults ( $\text{kg}/\text{m}^2$ ) and children (percentile based on age, sex, height, and weight using the Centers for Disease Control and Prevention growth charts).<sup>14</sup> The moderator-facilitated focus group script contained 10 open-ended questions related to important aspects of a potential pediatric obesity intervention (Table 1). Questions included concerns about children's health, local resources available to help manage the children's weight, and facilitators and barriers to participation in a weight-management intervention. The script was vetted and approved by a task force of community and clinic stakeholders prior to the focus group meetings.

### Data Analysis

The primary endpoints of the focus group discussions were qualitative concepts, themes, and quotes from the parent/guardian perspective that may aid in developing a comprehensive pediatric obesity prevention and treatment program. Each audio and video recording was transcribed and independently coded by at least 2 researchers for content analysis. Transcripts were uploaded into NVivo v.10 (QSR International Pty Ltd.) to assist in the thematic coding process. Content analysis included the following: (1) generating keywords and phrases repeated independently in another focus group, (2) grouping variables based on unifying concepts and themes, and (3) reviewing the variable groupings to ensure consistency and relevance of the proposed unifying concepts. Saturation was reached with themes repeated across multiple focus groups. Table 2 shows the checklist used to meet the consolidated criteria for reporting qualitative research developed by Tong and colleagues.<sup>15</sup>

### RESULTS

Twenty-one caretakers across 3 focus groups ( $n_1=7$ ,  $n_2=2$ ,  $n_3=12$ ) were recruited. Because of the small size of the second focus group, 2 clinic staff members joined to facilitate group discussion, but only caretaker responses were included in the analyses. Participants ranged in age from 18-57 years, 100% were female, 71% were black, 81% were not married, and all were the primary caretakers for children aged 3-18 years (Table 3).

**Table 1. Moderator Script for Focus Group Discussions**

1. What are the most important health topics pertaining to children/adolescents today?
2. Is childhood overweight/obesity a major health concern to you? Are you worried about your child being overweight or obese?
3. What resources are available to you now to help your child have a healthy weight? Does your physician ever talk about your child's weight? What about health habits like diet and exercise? Does anyone at school discuss your child's weight or health habits?
4. We are working with your school health center to create a program to help prevent and treat obesity in children. What important aspects should it include?
5. What are the most important outcomes you'd expect from a weight-management program for children? What do you want to see change in your child? For your family? For yourself?
6. What factors would encourage your child/your family to participate (facilitators)? How can we help facilitate participation? What are the potential benefits of a weight-management program for you, for your family, and for your child?
7. What factors might prevent your child/your family from participating (barriers)? How can we help overcome barriers to participation? Do you see any potential harms to your child in offering a weight-management program?
8. What logistical issues do we need to address? (ie, Where should it be held? Who should lead it? Who should participate? What should the basic structure be like?)
9. What kinds of technology would you like to use in the program?
10. Before we close the discussion, did we miss talking about anything that is important to preventing and treating obesity in children/adolescents? Any final thoughts?

### Thematic Findings

Five major themes were identified from the focus group discussions: caretaker concerns about their child, available resources to manage the child's weight, potential barriers to participation in a lifestyle intervention for overweight and obese children, ideal program aspects of a lifestyle intervention, and ideal program outcomes. Subtopics within each theme were identified and coded independently by 2 coders, resulting in a total of 40 subcodes (Table 4). Interrater reliability was high, with 97.8% agreement between the 2 raters across all codes (Cohen kappa coefficient = 0.706).

### Caretaker Concerns

Most participants reported their child's weight and eating and physical activity habits as areas of concern. Many parents/guardians whose children were a healthy weight reported concerns about their child becoming overweight in the future because of poor eating habits, physical inactivity after school, or genetic susceptibility.

Parents/guardians reported a number of general eating concerns, such as eating too much unhealthy food, not knowing what their child was eating, or not having enough time to prepare healthy meals. Parents/guardians in all focus groups reported school lunches as a major contributor to poor eating habits, specifically, not eating at school and then overeating at home: “By the time he comes home, he’s starving, and he wants to eat everything in the cabinet because he doesn’t eat at school because it’s nasty.”

Some parents/guardians expressed concerns about extreme eating, such as hoarding food or binge eating to the point that parents/guardians sought medical attention for their child or stored food in locked cabinets: “I’ve done everything. I’ve put locks on cabinets, and she has literally broken the hinges off of the cabinets. . .to get the food.” Parents/guardians also reported a variety of health concerns such as stress, anxiety, asthma, attention-deficit/hyperactivity disorder, autism spectrum disorder, learning disorders, bipolar disorder, eating disorders, and traumatic life events that they believed were associated with their child’s current weight. Some parents/guardians attributed weight problems to medications the child was taking to control other health problems.

Parents/guardians were concerned that their child was at risk for developing serious chronic diseases, especially diabetes, high blood pressure, high cholesterol, and heart disease: “I’m diabetic, my family is diabetic, and I don’t want her to go through the same thing.”

Finally, many caretakers stated that their child was frequently bullied at school. Some reported that incentivizing healthy behaviors for an overweight child caused sibling conflict because healthy-weight siblings were upset that they did not receive the same opportunities to win incentives: “And the more they tell her she’s fat, ugly, stupid, ADHD, special education, the more she brings food into her mouth.”

### Currently Available Resources

Parents/guardians listed a variety of resources they were using or knew were available in their community to promote a healthy weight. However, parents/guardians reported being unable to take advantage of these resources: “We [have] lots of resources. We’re just not accessing them as we should.” A minority of parents/guardians perceived that they did not have resources available to them: “No, basically I’ve been on my own since they was little. . .only thing I have is the school, is her school.”

### Barriers to Participation in a Pediatric Obesity Intervention

Caretakers reported a number of perceived barriers that would limit future participation in a pediatric obesity intervention for their child, mainly a lack of time. Parents/guardians reported that long work hours and busy schedules limited their ability to engage in healthy behaviors with their child and would limit their ability to attend a weight-management program with their child. In addition, parents/guardians reported that their children were busy with school, homework, and extracurricular activities that left little time for exercise or attending a lifestyle intervention. Some parents/guardians stated that the time burden could be partially

attenuated by scheduling program sessions far in advance and providing transportation assistance.

Another major barrier to making healthy changes was parent/guardian-reported feelings of helplessness and frustration after numerous failed weight loss attempts in the past. Some parents/guardians reported feeling alone and in need of additional assistance for a successful lifestyle change. Some parents/guardians believed their child engaged in adequate healthy activities but were still gaining weight, so they felt at a loss for what to do next: “We’ve seen nutritionists; we’ve seen endocrinologists as well. We’ve been through it all. We’ve been through Weight Watchers; we’ve been through many programs. I’ve spent thousands of dollars on this. . . .And it seems like instead of her losing the weight, she’s increased. And, which is a really big concern for me because at her age, I’m thinking she might have a heart attack soon, you know, with the weight gain.”

Parents/guardians reported difficulty convincing their child to try new foods or eat vegetables. Parents/guardians also reported that their child’s activity preferences were not conducive for physical activity. Many parents/guardians said their child did not like organized sports or playing outside. Most parents/guardians complained that their child was too focused on technology-related sedentary activities, such as playing video games, smartphone applications, and tablet games.

Parents/guardians reported their child had issues with authority or was unmotivated to engage in healthy behaviors instructed by adults who, regardless of their expert status as a doctor, parent/guardian, or teacher, were also overweight or did not undertake the healthy behavior themselves: “Okay, my daughter, when she goes the doctor, the doctor tells her she’s overweight. But then the doctor’s overweight, so, you know, she’s not taking you seriously, doctor. And she says, ‘How she going to tell me to lose weight? She needs to lose weight!’” Child mental health issues, such as poor attention or bingeing behavior, exacerbated some of these attitudes and problem behaviors. Some parents/guardians also reported a general lack of parent/guardian-child communication: “I have no idea what my daughter’s sleep habits are. I really don’t. ‘Cause she’s in her room, I’m in my room. I’m not home. I work in the evenings. So she’s at home, I’m at work.”

Although parents/guardians reported accessibility to healthy food resources, they reported barriers to purchasing fresh fruits and vegetables. Specific concerns included the cost of fresh produce, the expiration of fresh produce before use, or their child’s dislike for vegetables. Parents/guardians also reported cost as a barrier to exercise. The main exercise-related cost complaint was that parents/guardians would have to pay for childcare for younger siblings so that parents/guardians could take an older child to the gym or other organized activities.

The final barrier identified by parents/guardians was a general lack of support for encouraging healthy weight, diet, and physical activity from school and government policies. For instance, many parents/guardians reported that their child did not have physical education or recess at school, and when he or she did, the child was not physically active: “I really wish the physical education department here was better than it is because there’s many days that my

**Table 2. Consolidated Criteria for Reporting Qualitative Studies Checklist<sup>15</sup>**

Item	Guide Questions/Description	Response
<b>Domain 1: Research Team and Reflexivity</b>		
<b>Personal characteristics</b>		
1. Interviewer/facilitator	Which author/s conducted the interview or focus group?	Staiano, Marker, Frelier
2. Credentials	What were the researchers' credentials (eg, PhD, MD)?	Staiano: PhD, MPP Marker: BA Frelier: BS
3. Occupation	What was their occupation at the time of the study?	Staiano: assistant professor Marker: project coordinator Frelier: research assistant
4. Sex	Was the researcher male or female?	Female
5. Experience and training	What experience or training did the researcher have?	Staiano: previously administered and oversaw 6 focus groups Marker: previously administered 1 focus group
<b>Relationship with participants</b>		
6. Relationship established	Was a relationship established prior to study commencement?	The focus group was recruited by each site's clinic coordinator who had a prior professional relationship with each parent/guardian.
7. Participant knowledge of the interviewer	What did the participants know about the researcher (eg, personal goals, reasons for doing the research)?	Parents/guardians were told the purpose of focus groups was to gather parent/guardian perspectives on a weight-related healthy lifestyle intervention for families with plans to develop a program with local clinics.
8. Interviewer characteristics	What characteristics were reported about the interviewer/facilitator (eg, bias, assumptions, reasons, and interests in the research topic)?	None
<b>Domain 2: Study Design</b>		
<b>Theoretical framework</b>		
9. Methodological orientation and theory	What methodological orientation was stated to underpin the study (eg, grounded theory, discourse analysis, ethnography, phenomenology, content analysis)?	Content and thematic analysis
<b>Participant selection</b>		
10. Sampling	How were participants selected (eg, purposive, convenience, consecutive, snowball)?	Convenience sampling
11. Method of approach	How were participants approached (eg, face-to-face, telephone, mail, email)?	Face-to-face, telephone, flyer distribution to children, and email
12. Sample size	How many participants were in the study?	21
13. Nonparticipation	How many people refused to participate or dropped out? Reasons?	No participants who attended focus groups refused consent.
<b>Setting</b>		
14. Setting of data collection	Where were the data collected (eg, home, clinic, workplace)?	Clinic adjoined to hospital, clinic adjoined/adjacent to school

Table 2. Continued

Item	Guide Questions/Description	Response
15. Presence of nonparticipants	Was anyone else present besides the participants and researchers?	In one group, a nurse practitioner and a nurse/clinic coordinator were present.
16. Description of sample	What are the important characteristics of the sample (eg, demographic data, date)?	See descriptive characteristics (Table 1)
<b>Data collection</b>		
17. Interview guide	Were questions, prompts, and/or guides provided by the authors? Was it pilot tested?	Moderators used a script; the script was vetted and approved by a task force of community and clinic stakeholders.
18. Repeat interviews	Were repeat interviews carried out? If yes, how many?	No
19. Audio/visual recording	Did the researchers use audio or visual recording to collect the data?	Yes, both a video camera and an audio recorder were used to facilitate transcription.
20. Field notes	Were field notes made during and/or after the interview or focus group?	Some field notes were made, but the predominant method of recording was via transcription of the audio and video recordings to avoid interfering with the discussion.
21. Duration	What was the duration of the interviews or focus group?	60-90 minutes
22. Data saturation	Was data saturation discussed?	Yes
23. Transcripts returned	Were transcripts returned to participants for comment and/or correction?	No
<b>Domain 3: Analysis and Findings</b>		
<b>Data analysis</b>		
24. Number of data coders	How many data coders coded the data?	2
25. Description of the coding tree	Did authors provide a description of the coding tree?	Yes
26. Derivation of themes	Were themes identified in advance or derived from the data?	Major themes were identified in advance, and subthemes were derived from the data.
27. Software	What software, if applicable, was used to manage the data?	NVivo
28. Participant checking	Did participants provide feedback on the findings?	Participants did not provide feedback on the findings. The task force provided feedback on the findings.
<b>Reporting</b>		
29. Quotations presented	Were participant quotations presented to illustrate the themes/findings? Was each quotation identified (eg, participant number)?	Quotations are provided but are not identified.
30. Data and findings consistent	Was there consistency between the data presented and the findings?	Yes
31. Clarity of major themes	Were major themes clearly presented in the findings?	Yes
32. Clarity of minor themes	Was there a description of diverse cases or discussion of minor themes?	Yes

**Table 3. Descriptive Characteristics of the Focus Group Participants**

Characteristic	Parent/ Guardian (n=21)	Child (n=21)
Age, years, mean ± SD	42.7 ± 10.0	13.7 ± 4.0
Female sex, %	100	76.2
Race, %		
Black	71.4	71.4
White	28.6	28.6
Hispanic ethnicity, %	4.8	4.8
Marital status, %		
Married	19.1	
Divorced/separated	38.1	
Never married	38.1	
Widowed	4.8	
Highest education level, %		
High school diploma/general educational development (GED) test	42.9	
Associate degree or 1-3 years college	38.1	
Bachelor degree	4.8	
Graduate/professional degree	14.3	
Annual household income, %		
<\$10,000	23.8	
\$10,000-\$29,999	19.1	
\$30,000-\$49,999	28.6	
\$50,000-\$69,999	23.8	
≥\$140,000	4.8	
Weight, lb, mean ± SD	222.3 ± 61.1	170.3 ± 70.4
Body mass index, kg/m <sup>2</sup> for adult, percentile for child, mean ± SD	37.0 ± 9.8	81.2 ± 28.9
Overweight or obese, %	52.4	47.6

daughter has come home and said, ‘We did nothing in PE.’ That’s, that’s useless.”

**Facilitators and Ideal Program Aspects**

Focus group participants were asked to identify facilitators that would promote their involvement in a family-based pediatric obesity intervention. Parents/guardians reported that essential program components included nutrition, physical activity, and behavioral skills training. Parents/guardians requested fun group exercises as an important component of program sessions and enjoyable physical activities that children could do at home. Parents/guardians reported that their child would most likely participate in group exercise classes, dance, and active video games (eg, Nintendo Wii) but may be reluctant to participate in more traditional activities such as running or contact sports.

Regarding nutrition, parents/guardians requested tips on meal preparation, including recipes, individualized meal plans, healthy food substitutions, and ways to encourage children to try new foods. Parents/guardians also thought it would be important for the program to include a dietitian to teach healthy eating topics. Parents/guardians in one focus group requested that the program provide fresh fruits and vegetables at reduced prices. Parents/guardians were open to the idea of incorporating technology to track physical activity and eating habits and stated that their child would enjoy completing program components via smartphone applications.

Parents/guardians also emphasized the importance of including a behavioral component in the program, such as a therapist or counselor who could address important issues such as bullying, mental health, social support, and holistic child wellness: “Well, maybe therapists because there may be a reason behind the child’s weight that they’re not conscious of or that maybe they need to discuss, that’s causing them to be in that...just someone who can address their whole being.”

Parents/guardians suggested that program leaders should be supportive, encouraging adults who could make a healthy lifestyle intervention fun and motivating for their child, such as coaches, counselors, fitness trainers, or nutritionists: “It has to be somebody that can connect with the kids. ...You want somebody that’s encouraging....Someone that has good personalities, someone who’s...who will get there and do it with them, you know.”

Parents/guardians reported that the best program location would be the school or clinic where the focus group took place, or a school or recreation facility that was local and convenient. Parents/guardians stated that weekday evenings and Saturday afternoons would be the best program times and reported being open to attending program sessions from once per month to 2-3 days per week. Most parents/guardians wanted the program to be year-round. Some parents/guardians suggested that the program should take place right after school to reduce transportation burden and parent/guardian time.

In addition to the importance of a motivational program leader, parents/guardians highlighted the importance of providing incentives to encourage attendance, promote achievement of program goals, and reward healthy behaviors. Suggested incentives included gift cards or small prizes. Many parents/guardians stated that they currently used monetary incentives or food rewards to promote healthy behaviors in their children. Parents/guardians also reported that the program should be group-based and include the whole family, if possible, to provide valuable support. Above all, parents/guardians stated that the program must be fun to encourage child participation: “You could make it out of a game to see what...put ‘em on teams and see who loses the most weight or something.”

**Ideal Program Outcomes**

Many parents/guardians stated that the primary program outcome should be weight loss, with the secondary outcomes of improving their child’s confidence, self-esteem, and overall attitude. Other parents/guardians said that the program should focus on healthy behaviors relating to

**Table 4. Major and Minor Themes as Coded in NVivo**

<b>Code Group - NVivo Node</b>	<b>Code Subgroup</b>	<b>Example</b>
<b>Concerns</b>	Bullying/rivalry	Name-calling and sibling jealousy
	Chronic diseases	Diabetes, high blood pressure, stroke, and heart attack
	Eating habits	Hoarding, skipping meals, overeating, and portion control
	Mental health	Autism, attention-deficit/hyperactivity disorder, stress/anxiety, and self-harm
	Physical activity habits	Not enough physical activity and safety of outdoor environment
	Weight	Weight gain, medical side effects, and medications
<b>Resources</b>	Food availability/health food stores/resources	Grow Dat Youth Farm and Whole Foods
	Gym/church	YMCA, gym membership, and church
	Healthcare providers	Doctors, nutritionists, and endocrinologists
	In-home equipment	Workout videos, elliptical, bikes, weights, and treadmills
	Outdoor resources	Parks, levee, pool, and walking in neighborhood
	Parents/peers/rules	Parent-child activities, nutritional supplements, banning snacks, and buddy activities
	Programs/education	Cooking class, Weight Watchers, and childcare
	School	Guidance counselors, clinic, physical education, cooking demonstrations, school nurse, and newsletters
	Sports	Tennis and football
	Technology	Phone applications and Nintendo Wii
<b>Barriers</b>	Attitude/issues with authority	Hypocritical doctor and self-confidence
	Child's preferences/lack of interest	Disliking outdoor activities and preferring fast food
	Childcare/multiple kids	Kids of different age groups or physical/mental needs
	Cost/food purchasing	Fast food/junk food/vending machines vs fruits/vegetables
	Feeling helpless	Not knowing about available resources and gaining weight in spite of dieting
	Lack of communication	Losing newsletters and teenagers not listening
	Mental health issues	Breaking into padlocked food
	Policies	Government and school (lunch, physical education, and recess)
	Screen-time/technology	Using phone constantly
	Time	Work, homework, schedule, and too tired
<b>Aspects</b>	Transportation/traffic	Distance
	Behavioral	Behavioral change and counseling
<b>Outcomes</b>	Frequency/duration	How often visits take place, length of visits, and length of follow-up
	Incentives	Facilitators, rewards that motivate participation, competition, fun, and group support
	Leaders	Nutritionist and coach
	Location	YMCA, school, and community center
	Nutrition	Recipes and ingredient substitutions
	Physical activity	Exercises
	Technology	Website and phone applications
	Communication	
	Confidence/attitude/self-esteem	
	Healthy habits/education	Includes sleep habits and skin care/acne control
Success		
Weight loss		

exercise, diet, and sleep. Some parents/guardians also desired better interpersonal communication, especially between parents/guardians and children, as an important program outcome. Some parents/guardians did not state explicit changes they would want to see in their child and merely stated that they wanted their child to feel that he or she had succeeded.

### Similarities and Differences by Setting

Reported themes were based on quotations from at least 2 of the 3 sites. However, distinct focuses emerged at each individual setting. At the rural elementary/middle school-based clinic, the chief concern for parents/guardians was their child developing obesity-related comorbidities because they had other family members with obesity-related diseases. In the urban high school-based clinic, parents/guardians commented that their child disliked school lunch and did not have access to fresh produce, thereby contributing to overeating after school and a poor diet insufficient in fruits and vegetables. Finally, in the suburban hospital outpatient clinic (federally qualified health center), the main focus was on comorbid psychological conditions that resulted in food hoarding, as well as the need to promote positive psychological health (“whole being”) among children.

### DISCUSSION

The present findings provide important formative research on the needs, desires, and concerns of parents/guardians regarding a family-based weight-management program. Importantly, parents/guardians noted that their primary health concern was their child’s weight and health-related habits. Previous focus groups have indicated that parents/guardians identify other issues to be more important than obesity, such as safety and academic performance.<sup>16</sup> However, parents/guardians in our focus groups expressed concerns about their child developing chronic diseases as a result of obesity and expressed concerns about their child’s disordered eating tendencies, mental health symptoms, and medications that may contribute to excessive weight gain. Therefore, the recruiting efforts for a behavioral treatment program should not only focus on achieving a healthy weight but also on a desire to improve their child’s comorbidities and symptoms related to obesity. Additionally, behavioral and medical issues that are important to parents/guardians and children should be discussed and monitored throughout the program.

When asked to consider local community resources already available to help children achieve a healthy weight, many parents/guardians listed several community resources, whereas some parents/guardians perceived they had no resources. Prior focus groups indicate that parents/guardians perceive a lack of safe places to exercise,<sup>17</sup> too few locations, or not enough information about how to access these resources.<sup>18</sup> In addition, transportation and the need for the intervention to occur in a local, convenient location was noted as a primary concern among the participants in our focus groups. Lack of transportation has been repeatedly noted as a key barrier to program adherence in prior qualitative research,<sup>16</sup> specifically a lack of public transportation,<sup>19</sup> a need for reimbursement for transportation,<sup>20</sup> or

inadequate transportation to safe physical activity outlets for youth.<sup>21</sup> A behavioral treatment program should take place in a safe, convenient location with access to public transportation and in proximity to community resources that facilitate physical activity.

Lack of time has also been noted as a chief barrier in prior qualitative studies of families’ perceptions of pediatric weight-management interventions.<sup>22,23</sup> Phone interviews of youths aged 11-18 years from a weight-management intervention indicated that the 57% who did not complete the treatment credited lack of time and conflicting school commitments as key barriers to sustained participation.<sup>19</sup> Similarly, interviews of 10 families enrolled in a pediatric weight-management program indicated that reducing the intervention length would improve engagement in the program.<sup>24</sup> The design of a behavioral treatment program should begin with canvassing potential families’ scheduling preferences to provide conveniently timed sessions that families are likely to attend. Additional barriers identified by parents/guardians included frustration from prior unsuccessful weight loss attempts and cost issues related to healthy foods and exercise options. Cost of activities has been frequently noted as a barrier to participation in prior focus groups.<sup>25</sup> Using educational activities that are free or low cost is critical to ensure families can adhere to behavioral changes without excessive expense.

Parents/guardians were specifically asked what would facilitate their family’s involvement with a weight-management program, given prior evidence that child-targeted health interventions lack sufficient facilitators.<sup>25</sup> Logistics were identified as key to creating an ideal program, including mapping the frequency and duration of the program onto the academic school year. Parents/guardians also identified a supportive, knowledgeable leader as a key facilitator for their involvement. Prior research indicates that even trained medical professionals and teachers often lack understanding of how to screen for or assess childhood obesity and the importance of regular monitoring of behaviors.<sup>26</sup> Importantly, parents/guardians emphasized the need for a fun program, one that leverages a child’s preferences, incorporates technology, and provides ongoing rewards to incentivize progress. These findings align with prior qualitative research indicating the importance of providing healthy alternatives that a child enjoys.<sup>18</sup>

The engagement of the whole family in a weight-management intervention was considered important in the present study, which aligns with prior qualitative interviews of parents/guardians.<sup>24</sup> In the present study, parents/guardians specifically addressed poor parent/guardian-child communication as a targeted focus for the intervention. Additionally, these parents/guardians agreed that the entire family should participate in the program, which aligns with prior research indicating the effectiveness of parental encouragement, support, and modeling to influence children’s behaviors.<sup>27</sup>

Strengths of this study include gathering qualitative data from caregivers who were diverse in age and located in a variety of settings (2 school-based clinics and 1 hospital-based clinic). Further, the sample consisted primarily of African Americans, who have a higher prevalence of obesity than other race groups,<sup>1</sup> and unmarried caretakers without

a bachelor degree from low-income households, providing important perspectives for reducing barriers for involvement in weight-management programs in a population that is underrepresented in the literature. A limitation is the small sample size, although saturation was reached with themes repeated across multiple focus groups, indicating a sufficient number of participants. A second limitation is that the parents/guardians were recruited by clinic staff members and may have been biased toward an interest in family weight-management programs or concern for their child's weight.

## CONCLUSION

Parents/guardians voiced desire for a convenient behavioral intervention to promote healthy weight management for families. Interventions should incorporate the perspectives of parents/guardians, particularly the barriers faced by families from poor and underserved communities, to develop sustainable and feasible behavioral interventions for the treatment of childhood obesity.

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