"Does Skinny Mean Healthy?" Perceived Ideal, Current, and Healthy Body Sizes Among African-American Girls and Their Female Caregivers

Objectives: To qualitatively and quantitatively examine body image ideals and perceived weight-related health among African-American girls and their female caregivers to inform intervention development for Girls Rule!, an obesity prevention pilot program.

Design, Setting, and Participants: Formative study using qualitative data from semi-structured interviews and validated quantitative body image silhouette assessment among girls (N=47) and caregivers (N=44). The participants were a convenience sample of African-American church members from North Carolina. Differences were evaluated between perceived: 1) current and ideal body size; 2) current and unhealthy body size; and 3) ideal and unhealthy body size.

Results: Thirty-seven percent of the girls and 77% of the caregivers were overweight or obese. Three body image themes emerged from the qualitative interviews: 1) being fat is unhealthy; 2) caregivers are role models (positive and negative) for body image ideals; and 3) smaller body size is important for wearing fashionable clothing. A series of 9 body silhouettes were used to assess perceptions of both girls and caregivers. Overall, both girls (2.9 \pm 1.4) and caregivers (4.4 ± 1.4) ideal body size was significantly (P < .01) smaller than their current body size $(3.7 \pm 1.3 \text{ girls}; 6.3 \pm 2.2 \text{ care-}$ givers). Both girls (3.7 ± 1.4) and caregivers (6.7 ± 2.0) indicated that their current body sizes were statistically significantly (P < .05) smaller that what they considered to be unhealthy (7.9 \pm 1.4 girls; 7.9 \pm 1.2 caregivers).

Conclusions: Results suggest that most of these African-American participants were not satisfied with their current body size and desired a smaller body. At the same time, both girls and caregivers failed to recognize the potential health consequences associated with their current body size. Critical issues for designing obesity prevention programs include positive role modeling within the family and addressing the association of body size with health risk. (*Ethn Dis.* 2004;14:533–541)

Key Words: Adolescent Obesity, African Americans, Body Image

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INTRODUCTION

The prevalence of obesity and particularly of obesity in children has dramatically increased in the United States.¹⁻³ A recent report suggests a rising disease burden associated with child and adolescent obesity, and more than a threefold increase of hospital-related costs from \$35 million (1979-1981) to \$127 million (1997–1999).⁴ Obesity is a multifaceted health problem that is associated with genetic, environmental, sociocultural, psychological, and behavioral factors. Although there has been an increase in the prevalence of obesity in most ethnic groups and in both sexes, the increase has been particularly significant among African-American females.3,5,6 Many investigations focusing on body dissatisfaction among diverse ethnic groups have identified a difference in cultural attitude toward body size and shape.7-14

Compared to other ethnic groups, African-American women and female adolescents desire and/or accept a larger body size relative to White females,^{7–11} report body size dissatisfaction at higher weights,^{7–12} and are more influenced by the attitudes and beliefs of their family members than White women.¹³ However, other investigators suggest that this long held cultural belief may be chang-

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Address correspondence and reprint requests to Mira L. Katz, PhD; A352 Starling Loving Hall; School of Public Health; 320 West 10th Avenue; Ohio State University; Columbus, Ohio 43210-1240; 614-293-6603; 614-293-3937 (fax); katz-4@ medctr.osu.edu ing, given that some African-American women now report greater dissatisfaction with their current appearance and weight.^{14–17}

Considering the pediatric obesity epidemic, elevated risk in young African-American girls, and the link between body image and the development of self-concept, the importance of looking at these relationships in girls of younger age than previously studied is clear and imperative. Because family environment factors have been critically associated with child development and obesity,^{18,19} in this study, we captured body image attitudes within the household.

This report uses a unique approach that combines qualitative in-depth interviews and quantitative body image silhouette data obtained from the perspective of the African-American female child and her primary female caregiver. Capturing the current attitudes of both the girls and their caregivers about themselves and each other provides an unusual opportunity to critically assess body image beliefs across generations to help guide effective obesity prevention programs.

Methods

Girls Rule! was a church-based obesity prevention pilot program consisting of a formative and intervention program (July 2001–November 2002) designed for African-American girls, ages 6 to 9 years old, and their primary female caregivers. The age-appropriate and culturally specific intervention used in the pilot program was developed based on the information obtained during the forAlthough there has been an increase in the prevalence of obesity in most ethnic groups and in both sexes, the increase has been particularly significant among African-American females.^{3,5,6}

mative data collection period from April to October 2000.

Sample

We used data from 2 sources: 1) formative semi-structured interviews of girls and their primary female caregivers; and 2) standardized baseline measures of girls and their primary caregivers in the pilot intervention study.

As part of the formative data collection, face-to-face interviews were conducted with 12 African-American girls (6 to 9 years of age; 2 girls were siblings) and their 11 primary female caregivers. Each was interviewed up to 3 times (a total of 52 sessions) to allow sufficient time to cover the areas of nutrition, physical activity, and body image. The convenience sample was drawn from members of an African-American church located in a middle class neighborhood in a small city in North Carolina selected to be similar in demographic background to the intervention sample. The semi-structured interviews explored issues associated with nutrition, physical activity, and body image, and results were used to guide the intervention strategies of the obesity prevention pilot program.

The second source of participants included the girls and caregivers from the intervention pilot study. Prior to beginning the pilot obesity prevention program, baseline measures were obtained from 35 African-American girls (6 to 9 years of age) and their 34 pri-



Fig 1. Adult female body image silhouettes (#1-#9) Figure permission by the author. Williamson DA, Davis CJ, Bennett SM, Goreczny AJ, Gleaves DH. Development of a simple procedure for assessing body image disturbances. *Behav Assess.* 1989;11:433-446.

mary female caregivers. They were recruited from 3 churches located in middle class neighborhoods in a mid-size city in North Carolina.

Although not included in this report, participants completed a health history, diet and physical activity behavior assessments, and psychosocial surveys. Anthropometry (measured height and weight) was obtained and body mass index (BMI) was calculated for all baseline intervention participants. For the girls, risk for overweight (BMI \geq 85th percentile) and overweight (BMI \geq 95th percentile) were defined using age- and sex-specific CDC/NCHS references curves.²⁰ For the caregivers, a BMI \geq 25.0 and <30 was considered overweight and a BMI \geq 30.0 was considered obese. All data were collected following informed consent procedures established by the Institutional Review Board of the University of North Carolina at Chapel Hill.

Body Image Assessment

Body image was assessed during formative interviews and baseline measures using a Body Image Assessment methodology developed and validated for female adults and children.^{21,22} These silhouettes were designed to be ethnicity non-specific and recommended for use with African-American girls.²² Girls and their caregivers were given a series of 9 cards in random order, with black-andwhite silhouettes of adult females (Figure 1) and a series of girls (Figure 2) ranging from thin (#1) to obese (#9). The girls and their caregivers were asked which silhouette resembled: 1) their current body size; 2) the body size they wanted to look like (ideal body size); 3) their caregiver's/daughter's current body size; and 4) the ideal body size they wanted for their caregiver/daughter. A body dysphoria score was derived from the difference between current and ideal body size for both the girls and their



Fig 2. Girl body image silhouettes (#1-#9) Figure permission by the author. Williamson DA.



Fig 3. Girls Rule! Body image code tree

female caregivers. A positive dysphoria score indicates a larger current than ideal body size and a negative score indicates a larger ideal than current body size.

Exploratory Assessment of Body Image and Perceived Health

The traditional methods for assessing body image attitudes do not link these attitudes to health. In order to test a new method to assess the relationship between perceived current and ideal body size and perceived health, a subset of girls (N=30) and caregivers (N=31) were asked additional body silhouette questions. Interest in this association emerged after a group of girls and caregivers had completed the baseline measures and thus does not include all participants from the pilot intervention study. For this subset of participants, the adult and child silhouettes were placed in order from thin to obese. The participants were then asked to start with the silhouette in the center (#5) and to

identify which silhouette began to look unhealthy as they moved from the center to the smaller silhouettes (#5 to #1) and as they moved from the center to the larger silhouettes (#5–#9). The intention of this approach was to understand the link between perceived body size and attitudes on health, both in the lower range of body size (ie, thinness associated with poor health) and in the higher range (ie, heaviness associated with poor health).

Data Analysis

During the qualitative interviews, which lasted approximately 60 minutes, detailed field notes were taken. In addition, all interviews were tape recorded and transcribed, then entered as a text file and coded using QRS NUD*IST NVIVO Software for Qualitative Research.²³ Textual data were carefully read and systematically analyzed by the investigators to identify recurrent patterns and themes related to body image. A code tree was developed and specific body image "codes" were created (Figure 3) and assigned to appropriate sections of text for retrieval.²⁴ A codetree lists the codes that are used to identify themes in texts and for coding the texts for the presence or the absence of the identified themes. Grounded theory research allows understanding to emerge from close study of the text. Interviews were reviewed using the software and 3 main themes emerged.

For the quantitative data, statistical analyses were performed using SPSS version 6.1. Data were analyzed using paired t tests to compare the body image silhouette choices of the girls and their caregivers, and Pearson's correlation tests were used to compare the current body silhouettes and the BMIs.

RESULTS

Sample

Demographics of the girls and their female caregivers participating in the formative interviews and baseline measures from the pilot intervention study are listed in Table 1. The mean age for the girls was 7.6 years and for caregivers 37.5 years. Four of the primary caregivers were grandmothers of the girls, explaining the large age range for the caregivers. All caregivers completed at least a high school education. The median household income ranged from \$30,000–\$49,999, however 6 caregivers declined to answer this question.

During the formative data collection, heights and weights were self-reported for the caregivers. Heights and weights of the girls were not obtained. During the pilot study baseline measures, BMI was calculated from measured heights and weights for the girls and their caregivers. A substantial percentage of the girls were at risk for overweight (57%) and overweight (37%). Similarly, overweight (28%) and obesity (49%) prevalence was high among caregivers.

Table 1.	Description	of girls	and their	primary	/ female	caregivers
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Girls	
Total N (interview=12; pilot study=35) Age (years)	47
Mean	7.6 ± 1.1
Range	6–9
BMI*	
\geq 85% (at risk for overweight)	20% (7/35)
≥95% (overweight)	37% (13/35)
Mean	20.1 ± 5.8 (43%, 15/35)
Range	12.7–35.7
Caregivers	
N	45
Age (years)	
Mean	37.5 ± 8.6
Range	27–71
Mothers:Grandmothers	41:4
BMI*	
\geq 25.0 and <30.0 (overweight)	28% (12/43)
≥30.0 (obese)	49% (21/43)
Mean	31.9 ± 6.8
Range	19.3–48.0
Education	
Mean: years	14.7 ± 1.8
Range: years	12-17+
Household income (median)	\$30,000-\$49,999

Heights and weights were not obtained for the girls and were self-reported for the caregivers during the formative interviews.

 $\,^{*}$ BMI (body mass index) is reported for baseline pilot study participants.

Qualitative Data: Formative Interviews

Three major themes and cultural attitudes associated with body image emerged from the girl-caregiver interviews.

Fat is Unhealthy

Girls and caregivers reported that being heavy was unhealthy and being thin was healthy. An example of this theme from the interviews of one caregiver-daughter dyad follows:

Interviewer: What is a healthy girl? Girl: "Do you mean skinny?" Interviewer: Well, I mean healthy. Girl: "Oh, that means skinny." (Girl, age 7)

Interviewer: What are the health benefits of eating healthier? *Caregiver: "Well . . . you won't be gaining weight if you eat the right foods* such as fruits and vegetables and not a lot of meat." (Caregiver, age 71)

Although most comments focused on the association of poor nutritional habits and being overweight, a few girls and caregivers also discussed general healthy lifestyle behaviors including healthy diet and exercise, as evidenced by the dyad below:

Interviewer: What about somebody who is healthy. What do they look like?

Girl: "They're not fat, they exercise and they don't eat everyday the same foods and they don't like to eat a lot of junk foods." (Girl, age 8)

"If I ever get the weight off I will be healthier anyway and I'll have more energy to stay healthier." (Caregiver, age 37)

The link between disease and over-

weight is another variation of this same theme as evidenced in the following 2 statements from a girl and her caregiver:

Interviewer: Why wouldn't you want to look like that one? Girl: "Because if the chair was kind of small and you were that big you might not be able to fit in it." Interviewer: What else? Girl: "Her legs are really ugly and she doesn't look like she eats healthy and she's really fat . . ." (Girl, Age 8)

Caregiver: "When I think of good health body wise and not being sick . . . that you are taking care of your body, watching what you eat." (Caregiver, 36 years)

Caregiver as "Body Image" Role Model

The second theme to emerge from the interviews was the caregiver as a body image role model for her daughter or granddaughter—both positive and negative. The interviews revealed that girls and caregivers viewed the caregivers as role models for nutritional habits and physical activity. Whether girls perceived their caregivers to be positive role models depended on the caregivers' body size. For example, the potential for positive role modeling is evidenced in the example from one mother-daughter dyad below.

Girl: "Because I do sometimes want to be skinny like my mother. And I want to be tall like my mother."

Interviewer: Do you think your mom is healthy?

Girl: "Yes."

Interviewer: What makes her healthy? Girl: "Vegetables, her broccoli, her carrots, her soup, her salad, and lots of vegetables." (Girl, age 8)

Interviewer: Do you encourage her to be active?

Caregiver: "No, but I'm very active so I think she just follows along with me." Interviewer: Do you think that's important for you to be a model for her? Caregiver: "Yes." (Caregiver, age 30)

However, overweight/obese caregivers were viewed as negative body image role models. One caregiver's perspective about this theme was captured in her interview.

Interviewer: So you want to get back to the size . . .?

Caregiver: Not necessarily, I just want to be smaller so I don't have to worry about being tired. I want to be smaller any way ... cause children see you as an example, and they see your fat rear end sitting at home ... they don't realize that ... well people look at you and say "she's heavy," like I didn't realize that I was heavy. Cause I think of myself as being thinner than I am, and I look in the mirror and I call her fat babe ... I say that fat babe is my reflection, "where did she come from?" (Caregiver, age 37)

Fashionable Clothes

The third theme was the connection between body size and wearing fashionable clothes. In one case the caregiver had trouble finding clothes for the girl because she was too thin, but in the other cases the conversation centered on thinness and the ability to wear fashionable clothing, or conversely, the inability to find clothing for larger size girls.

An example from one interview follows:

Interviewer: Can you tell me what you think it is to be healthy? Girl: "I think it means to be healthy so that when I grow up I won't have the disease, and I'll be skinny and look good in my clothes. Cause if I don't look good in my clothes, I'll look icky, that's what I think it means." (Girl, age 7)

Caregiver: "I have a hard time finding clothes for her so I've got to do something" and "It's difficult finding clothes that fit and she's just 7 years old." (Caregiver, age 71)

Cultural Attitudes about Body Image

In addition to the emergence of the major body image themes, participants' responses highlighted important cultural attitudes that are clearly linked to obesity and overweight. For example, a 37year old caregiver stated several thoughts focusing on cultural attitudes about body image size and shape. She said: "I'm not used to that ethnic body shape where Black men like bigger hips and thighs. I don't want big hips and thighs." And specifically addressing her concern about her weight issue and its relationship to health: "Well, I'm interested in losing weight. A lot of people are content with their size and it's not necessarily a good size . . . well, some are thick through here and that's more pressure on the heart ... and some of us are thicker through here, but the Black man likes that. I'm not content to where you can go to BB & G. Where you can go and get 'Big Butt and Gut clothes'."

Quantitative Data: Formative Interviews and Baseline Measures

Girls' Body Image

Descriptive data from the body image attitudes assessment are presented in Table 2. This table is organized to show both the girls' and caregivers' perceptions of the girls' current and ideal body image, as well as the girls' and caregivers' perceptions of the caregivers' current and ideal body image. The differences between both girls' and caregivers' perceptions of the girls' current and ideal body size (dysphoria) were positive and significant, suggesting that both the girls and their caregivers wanted the girls to have smaller body sizes. An example of this was a 6-year old girl with a BMI \geq 95%. She picked silhouette #5 (see Figure 2) as the body size that most looked like her, and picked silhouette #3 as the body size she would most like to look like. In this case, her body dysphoria score was 2. In addition, her mother picked silhouette #4 as the girl's current body size and silhouette #3 as the body

size she would like her daughter to be. In this case the body dysphoria score was 1 for the mother's perception of her daughter. Additional analyses indicate a statistically significant correlation (r=.4873; P=.003) between the girls' BMI and their perceived current body size. Similarly, the girls' BMI and their caregivers' perceived current body size for the girls were statistically significantly correlated (r=.5005, P=.002).

Overall, both girls and caregivers desired a thinner body size than the girls' current size. Seventy-five percent (35/ 47) of the girls and 49% of the girls' caregivers were dissatisfied with the girls' current body size. Among the 57% (20/ 35) of girls at risk for overweight, 17 desired smaller body sizes (range 1-4), 2 girls wanted to remain the same size, and one girl wanted a larger body size. This is in contrast to the 43% (15/35) not at risk for overweight or overweight (calculated current BMIs <85% percentile CDC/NCHS reference curves), where 5 girls desired smaller bodies (calculated current BMI range 25th to 75th percentile CDC/NCHS reference curves), 5 girls wanted to remain the same size (calculated current BMI range 25th to 75th percentile CDC/NCHS reference curves), and 5 girls desired a larger body size (calculated current BMI range 25th to 75th percentile CDC/ NCHS reference curves).

Caregivers' Body Image

The differences between both girls' and caregivers' perceptions of the caregivers' current and ideal body size (dysphoria) were also positive and significant. On average, both caregivers and girls perceived the caregivers' current body size to be larger than ideal body size. Additional analyses suggest that there was a statistically significant correlation between the caregivers' BMI and their perception of their own current body size (r=.6481; P<.001), and between the caregivers' BMI and the girl's perception of the caregivers' current body size (r=.7429, P<.001).

	Mean	Range	N	P Value
Girls Body Image* (47 participants: interviews=12 a	nd pilot study=35)			
Girls' perception of own body image				
Current	3.7 ± 1.3	1–7	47	
Ideal	2.9 ± 1.4	1–6	47	+
Dysphoria	0.8 ± 1.7	(-3)-4	47	
Caregivers' perception of girl's body image				
Current	3.3 ± 1.9	1–8	47	
Ideal	2.8 ± 1.0	1–5	47	+
Dysphoria	0.5 ± 1.3	(-2)-4	47	
Caregivers Body Image* (44 participants: interviews=	=11 and pilot study=33)			
Caregivers' perception of own body image				
Current	6.3 ± 2.2	2-9	44	
Ideal	4.4 ± 1.4	2-8	44	+
Dysphoria	1.9 ± 1.7	(-1)-5	44	
Girls' perception of caregivers' body image				
Current	6.3 ± 2.0	2-9	47	
Ideal	4.7 ± 1.7	1–8	35	+
Dysphoria	1.9 ± 1.8	(-1)-6	35	

	Table 2.	Body imag	e assessment in	girls and	their p	orimary	female	caregivers
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Eighty-four percent (37/44) of the caregivers and 80% (28/35) of the girls were dissatisfied with the caregivers' current body size. Three caregivers and one girl desired that their caregiver have a larger body size.

Exploratory Assessment of Body Image and Perceived Health

Table 3 includes data from a subset of girls and caregivers who were asked questions about current and ideal body size in addition to questions regarding the association between body size and weight-related health risk. We investigated the link between body size and health on the thin (Silhouettes 1–5) as well as the heavy (Silhouettes 5–9) side of the silhouette continuum.

Girls' Body Size

Using the girl silhouettes, there was no statistically significant difference (P=.813) between the girls' perceived ideal body size (mean=2.7) and the body size they associate with being unhealthy (thin silhouettes) (mean=2.9). There was a significant (P=.000) difference between the girls' perceived current body size (mean=3.7) and that of the girls' perceived body size they associate with being unhealthy (heavy silhouettes) (mean=7.9). These findings suggest that there is little difference between what girls desire in level of thinness compared to what they consider too thin for a healthy body. In addition, most girls felt that their own body size was substantially smaller than what they considered to be "too heavy" in terms of being unhealthy.

There were statistically significant differences between the caregivers' perception of ideal body size for their child (mean=2.8) and the caregivers' perception of the body size associated with being unhealthy (thin silhouettes: mean=2.1) (P=.021) and between the caregivers' perception of the girls' current body size (mean=3.2) and their perception of the body size associated with unhealthy (heavy silhouettes: mean 7.1) (P<.001). These findings suggest that the caregiver's perception of an ideal body size for the girls is slightly larger

than what they consider too thin for a healthy body, but that most caregivers perceived a larger body size relative to their girls' current body size to be unhealthy.

Caregivers Body Size

Using the adult silhouettes, there was a statistically significant difference (P <.001) between the ideal body size selected by caregivers (mean=4.6) vs the body size selected to represent that associated with being unhealthy (thin silhouettes: mean=2.2). There was also a significant difference (P=.001) between the caregiver body size perceived as ideal (mean=4.6) by girls and the body size perceived as being associated with being unhealthy (thin silhouettes: mean=2.9).

In addition, there was a significant difference (P=.016) between the caregiver's perception of their own current body size (mean=6.7) and the body size associated with being unhealthy (heavy silhouettes: mean=7.9). Finally, there was a significant difference (P<.001) between the girls' perception of caregiv-

⁺ *P*<.01. ≠ *P*<.05.

	Mean	Range	N	P Value‡
Girls Body Image*				
Girls' perception of own body image				
Current	3.7 ± 1.4	1–7	30	
Unhealthy-heavy†	7.9 ± 1.4	5-9	30	P<.001
Ideal	2.7 ± 1.4	1–6	29	
Unhealthy-thin†	2.9 ± 1.8	1–5	29	P=.813
Caregivers' perception of girl's body image				
Current	3.2 ± 1.9	1–6	30	
Unhealthy-heavy	7.1 ± 1.3	6–9	30	P<.001
Ideal	2.8 ± 1.1	1–5	31	
Unhealthy-thin	2.1 ± 1.1	1–5	31	P=.021
Caregivers Body Image*				
Caregivers' perception of own body image				
Current	6.7 ± 2.0	2-9	30	
Unhealthy-heavy	7.9 ± 1.2	6-9	30	P = .016
Ideal	4.6 ± 1.4	2-8	29	
Unhealthy-thin	2.2 ± 1.2	1–5	29	P<.001
Girls' perception of caregivers' body image				
Current	6.6 ± 1.8	2-9	30	
Unhealthy-heavy	8.1 ± 1.5	5-9	30	P<.001
Ideal	4.6 ± 1.7	1–7	29	
Unhealthy-thin	2.9 ± 1.7	1–5	29	P = .001

Table 3. Exploratory analysis subset: responses of girls and their primary female caregivers regarding current and ideal body image and perceived weight-related health risk

* A series of 9 body silhouettes ranging from thin (1) to obese (9).

+ Unhealthy-thin (1-5) and unhealthy-heavy (5-9).

‡ Significance testing contrasts ideal vs thin and current vs heavy.

ers' current body size (mean=6.6) and the body size associated with being unhealthy (heavy silhouettes: mean=8.1). These findings suggest that, although the caregivers and girls identified a perceived ideal body size that was significantly smaller than their current body size, they both did not consider the caregivers' current body size to be unhealthy.

DISCUSSION

The major goals of this study were to understand perception of body image attitudes among African-American girls and their female caregivers, including the dysphoria between perceived current and ideal body image as well as their perception of an unhealthy body size (thin and heavy). This study is unique given our focus on an understudied age group—preadolescent females at high risk for obesity. In addition, we include both qualitative and quantitative data to understand these important body image attitudes and their relationship to the body size associated with health. Furthermore, we include caregiver-daughter dyads to provide critical data from the understudied household level.

Both girls and their caregivers expressed dissatisfaction with their current body size and desired a thinner body size. The desire for smaller body sizes by

Both girls and their caregivers expressed dissatisfaction with their current body size and desired a thinner body size.

African-American females, particularly younger females, is consistent with data from a small number of recent studies,14-17 and challenges the long-held belief that African-American females have lower dissatisfaction with larger body sizes.7-11 This finding may reflect the fact that African-American females are currently influenced by media/society portraying thin females (particularly greater numbers of African-American female role models in media) more than in previous generations. In addition, the finding that the girls' perceived ideal body size was similar to the body size they considered to denote unhealthy (thinness) requires attention and more research to assess whether mainstream cultural attitudes that equate thinness with beauty are shifting into other subpopulation groups. Because being thin is highly valued in our society, we must be careful that our children do not move from the obesity problem to the eating disorder end of the spectrum. Although eating disorders are usually associated with White females, minority women have been underrepresented in most studies focused on eating pathology. However, eating disorders have been reported recently to be a significant problem in the African-American female population.^{25,26}

Although the caregivers' perception of ideal body size for their girls was significantly smaller than the girls' current body sizes, our exploratory analysis suggests that caregivers did not consider the current body size of their girls to be unhealthy. In fact, there was nearly a 4 silhouette point difference between what caregivers perceived to be the girls' current weight and the average silhouette chosen to represent an unhealthy body size (heavy). In previous studies by other investigators, mothers did not identify their overweight children to be overweight.^{27,28} This current study adds to our understanding of the caregivers' potential misperception of overweight and what is a healthy vs unhealthy body size for their children.

Similarly, caregivers reported their own current body size as significantly smaller than the body size they perceived to portray as being unhealthy (heavy), even though 77% of the caregivers were overweight or obese. Since a key theme to emerge from the interviews was that caregivers are important role models for nutritional habits and physical activity patterns, this body image concept needs to be explored further in obesity prevention programs.

These findings suggest that prevention programs should address current perceptions of healthy body size in a culturally sensitive manner to help caregivers and children understand the health risks associated with body size. Our findings indicate that role modeling is important in shaping health behaviors, thus prevention programs should also include an emphasis on modeling healthy lifestyle behaviors. It has been established that a child's food intake reflects the intake of their parents,^{29,30} and that intake problems are established at an early point in development particularly for mothers and daughter.³¹ In addition, physical activity patterns are influenced by the family environment.^{32–34}

Although the results from this study have important implications for planning obesity prevention programs, this study is limited by its cross-sectional design, small sample, and demographic homogeneity of the participants. The results from this study may not be generalizable to other ethnic groups, rural populations, or non-church members. However, we have used a new approach for addressing perceptions of health associated with body size that has not been previously tested. In addition, we make use of a unique and detailed data set in which to examine important relationships between caregiver and daughter body image ideals in the understudied African-American preadolescent female.

CONCLUSIONS

Given the urgent public health problem of obesity, particularly in female, African-American populations, more research such as this is needed to understand the role of body image across and within the family setting. While our qualitative data suggest that norms in this population are moving toward a body image that is more similar to a thinner American norm, the quantitative data raise questions about whether this shift might be motivated more by desirable appearance than by health. While those conducting obesity prevention and treatment interventions are often reluctant to dwell on the weight of the child, it may be important to develop culturally sensitive and appropriate methods to communicate the health risks of a child's excess weight to their caregivers. Additional work is also needed to further test ways that silhouettes can be used to investigate the relationship between body image and an unhealthy body size. Despite the limitations, we feel our study has made an important contribution by starting to address body image in younger girls and across generations.

ACKNOWLEDGMENTS

Funded by the National Heart, Lung, and Blood Institute (NHLBI; R01-HL65131) and the Department of Health and Human Services Regional Offices of Minority and Women's Health.

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- Acquisition of data: Katz, Gordon-Larsen, Bentley, Kelsey, Shields, Ammerman
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