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Self-Reported Versus Actual Weight and Height Data Contribute to Different Weight Misperception Classifications

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Abstract

Objectives—The purpose of the study was to examine potential differences between two approaches to defining adolescent weight misperception. Specifically, weight status perception was compared with self-reported weight status and actual weight status (based on body mass index percentiles calculated from self-reported and actual weights and heights, respectively). Furthermore, the accuracy of assigning weight status based on body mass index percentiles calculated from self-reported weights and heights was assessed by comparing them with actual weight status.

Methods—Data were extracted from *Team Up for Healthy Living*, an 8-week, school-based obesity prevention program in southern Appalachia. Participants (N = 1509) were predominately white (93.4%) and ninth graders (89.5%), with approximately equivalent representation of both sexes (50.7% boys).

Results—The study revealed significant differences between the approaches to defining weight misperception ($\chi 2 = 16.2$; $P = 0.0003$).

Conclusions—Researchers should interpret study findings with awareness of potential differences based on the method of calculating weight misperception.

Keywords

obesity; overweight; weight misperception

Approximately 34% of 12- to 19-year-olds are overweight or obese.[1] Numerous physical and psychosocial health consequences[2,3] and economic costs[4] have directed attention to the need for effective prevention/intervention programs. Adolescents who are overweight or obese are significantly more likely than their normal-weight counterparts to misperceive their weight status.[5] This is concerning because overweight or obese adolescents who underestimate their weight status have been found to be less motivated to change their

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weight-related health behaviors.[6] Conversely, normal-weight adolescents who overestimate their weight status tend to engage in more harmful weight-related practices[7]; therefore, future studies examining the potential effects of weight misperception across weight categories, including underweight, are warranted.

The literature comparing the use of objective/actual versus subjective/self-reported height and weight measurements in the calculation of body mass index (BMI) is growing. A systematic review[8] of 64 studies examining the relation between these two methods of assessment suggests trends of underreporting for weight/BMI and overreporting of height, with some differences based on sex and populations studied. Another literature review[9] echoes the results of self-reported data underestimating overweight prevalence and suggests that self-reported data should be used only if these are the sole source of data. These issues are further complicated in the context of defining weight misperception.

To date, the most common methodological approach to estimating weight misperception has involved calculating discrepancy scores between perceived weight status (assessed via a single-item question or body/figure silhouettes) and weight status calculated with self-reported[6,10–13] or actual weights and heights.[14–17] To our knowledge, no studies have directly compared utilization of different methods to define weight misperception, which could affect findings. Other studies have used additional strategies for defining weight misperception such as comparison of differences between self-reported weight versus actual weight[18] and perceived weight versus weight status measured by waist circumference.[19]

The purpose of this study was to examine potential differences between the two most common approaches to defining weight misperception, underestimation and overestimation. Specifically, weight status perception was compared with self-reported weight status and actual weight status based on BMI percentiles calculated from self-reported and actual weights and heights, respectively. Furthermore, the accuracy of assigning weight status based on BMI percentiles calculated from self-reported weights and heights was assessed by comparing it with actual weight status.

Methods

Procedures

Data were extracted from waves 1 and 2 of *Team Up for Healthy Living*, an 8-week, school-based obesity prevention program in southern Appalachia. Participating schools were randomized to either treatment or control sites. Baseline data were collected from the 1509 adolescents who were enrolled in the program in January–February 2012 and August–September 2012. Trained staff administered a comprehensive survey, which was distributed in Lifetime Wellness classes and assessed among other characteristics, lifestyle-related behaviors, and demographic characteristics. In addition, anthropometric measurements were completed as described below. Written consent was obtained from participants before enrollment in this institutional review board–approved study. The details of the design and methods of the study have been described in detail elsewhere.[20,21]

Measures

Demographics—The demographic characteristics included in the analysis were age, sex, race/ethnicity, grade level, parents' highest level of education, and family income. Date of birth (month/day/year) was subtracted from date of measurement to calculate students' age in years and months. Sex was self-reported via a question asking, "What is your gender?" Race/ethnicity was classified as American Indian/Alaska Native, Asian, black or African American, Hispanic or Latino, Native Hawaiian or Other Pacific Islander, non-Hispanic white or non–African American, or Other by asking, "How do you describe yourself? (Select one or more responses)." Grade level was obtained by asking, "What grade are you in?" Students were asked to report their mother's/father's highest level of education, with response options that ranged from less than high school to college degree and family household income (options ranged from <$20,000 to ≥$75,000).

Perceived Weight Status—Weight perception was assessed by one question: How do you describe your weight? Response options included "very underweight," "slightly underweight," "about the right weight," "slightly overweight," and "very overweight." Given the small percentage of students who described themselves as very underweight (1.01%) or very overweight (6.12%), the responses were collapsed into the adjacent response, resulting in three categories consistent with the Centers for Disease Control and Prevention (CDC) nomenclature: underweight (ie, "very underweight" and "slightly underweight"), healthy weight (ie, "about the right weight"), and overweight/obese (ie, "slightly overweight" and "very overweight").

Self-Reported Weight Status—Self-reported weight and height were assessed by asking students, "How much do you weigh?" (pounds) and "How tall are you?" (feet and inches). To obtain BMI percentile scores using weight in kilograms and height in centimeters, we used the following formula for the transformation: weight in kg = weight in lb × 0.45 and height in cm = height in feet × 30.48 + height in in. × 2.54. We then estimated age- and sex-specific BMI percentile scores based on the CDC 2000 growth charts.[22] In addition, students were categorized as underweight (<5th percentile), healthy weight (≥5th–<85th percentile), and overweight/obese (≥85th percentile). For self-reported weight, there were 5 participants <31 lb and 1 participant >1900 lb. For self-reported height, there were 2 participants whose height was <4 ft (reported as only 2 and 3 ft, respectively) and 3 participants >7 ft tall (reported as 8, 12, and 53 ft, respectively). In addition, there was 1 participant who self-reported height as <0 in. (reported as −1 in.) and 4 participants whose height was >12 in. (13, 15, 42, and 69 inches, respectively). These extreme values were set as missing. According to cutoffs defined in the 2000 CDC growth charts,[22] biologically implausible values (BIVs) were calculated. After calculating BIV, BMI-related variables (eg, BMI percentile) were set with missing if BIV was >0 (n = 6).

Actual Weight Status—Trained staff collected each student's weight and height using calibrated scales and portable stadiometers. Weight was measured to the nearest 0.1 kg and height to the nearest 0.1 cm. Students were asked to remove heavy outer garments and shoes. We used the same method as described above to obtain percentile scores and assign weight status categories. Once again, BIVs were calculated and BMI-related variables were set to missing if BIV was >0 (n = 11).

Weight Misperception—We calculated weight misperception by comparing the three weight status perception category responses with the self-reported and actual weight status categories. Adolescents were classified as underestimating their weight when their perceived weight category was lower than their self-reported or actual weight category (eg, perceived weight category was underweight and self-reported/actual weight category was healthy weight). Adolescents were classified as overestimating their weight when their perceived weight category was higher than their self-reported or actual weight category (eg, perceived weight category was overweight and self-reported/actual weight category was underweight). Finally, adolescents were classified as accurately estimating their weight category when their perceived weight category matched their self-reported or actual weight category (eg, perceived weight category was healthy weight and self-reported/actual weight category was healthy weight). A similar approach was taken to compare weight status based on self-reported as compared with actual weights and heights.

Data Analysis

Participants' characteristics in the analytic sample (n = 1243) were compared with those not included (n = 266) because of incomplete self-reported weight and height data to assess for a potential selection bias. χ^2 tests were used to determine significance for categorical variables (expressed in frequencies with percentage values) and independent *t* tests were used to determine the significance for continuous variables (expressed as mean ± standard deviation). To satisfy the aim of our study, weight misperception was calculated and compared using two approaches: using self-reported or actual weight and height. For the percentage data of multiple comparisons in categorical data analysis, the correction of adjustment of the significant level was the number of pairwise comparison minus one.[23] All of the analyses were performed using SAS version 9.2 (SAS Institute, Cary, NC).

Results

Participants

Participants (N = 1509) were predominately white (93.4%) and ninth graders (89.5%) with approximately equivalent representation of both sexes (50.7% male). A majority of parents indicated a high school or greater education, with 27.1% of mothers and 20.9% of fathers possessing a college degree (Table 1).

Weight Misperception Assigned via Self-Reported Weight Status Versus Actual Weight Status

Our study revealed significant differences between the two approaches when calculating weight misperception for the overall sample, χ^2 = 16.20, P = 0.0003; male subjects, χ^2 = 10.94, P = 0.0042; and female subjects, χ^2 = 8.06, P = 0.018. As shown in Table 2, using self-reported weight status (compared with using actual weight status) resulted in a smaller percentage of underestimates (21.9% vs 26.7%, 29.9% vs 34.7%, and 13.8% vs 18.6%, respectively, for the overall sample, male and female subjects) and greater percentage of overestimates (7.4% vs 4.6%, 4.7% vs 1.9%, and 10.3% vs 7.3%, respectively, for the overall sample, male and female subjects).

Table 3 shows sex differences within weight misperception methodologies. Male subjects were significantly more likely than female subjects to misperceive (either underestimate or overestimate) their weight status despite whether self-reported weight status (34.5% vs 24.1%; $\chi^2 = 16.15$, $P < 0.0001$) or actual weight status was used (36.6% vs 25.9%; $\chi^2 = 19.59$, $P < 0.0001$). Female subjects were more likely than male subjects to overestimate their weight status (10.3% vs 4.7%; $\chi^2 = 14.12$, $P = 0.0004$, using self-reported weight status; 7.3% vs 1.9%; $\chi^2 = 24.74$, $P < 0.0002$, using actual weight status). Male subjects were more likely than female subjects to underestimate their weight status (29.8% vs 13.8%; $\chi^2 = 46.34$, $P < 0.0002$, using self-reported weight status; 34.7% vs 18.6%; $\chi^2 = 48.73$, $P < 0.0002$, using actual weight status).

Weight Status Assigned via Self-Reported Versus Actual Weight and Height Data

When comparing the relation between self-reported versus actual weight status, 87.4% (n = 1077) of students' categories were accurate or matched. Another 10.1% (n = 125) underestimated their actual weight status, whereas 2.5% (n = 31) overestimated their actual weight status. Male and female subjects did not differ significantly regarding percentages of underestimation, accuracy, or matching and overestimation (data not shown). Notably, 266 participants were missing self-reported weight and height data. As shown in Table 4, we examined for potential differences in demographic and variables of interest across the analytic and nonanalytic groups. Of importance, no significant differences emerged in demographic characteristics of participants between the two groups except for family household income.

Discussion

The present study found significant differences between two approaches to defining weight misperception in early adolescence. Specifically, using self-reported weight and height data as compared with actual weight and height data may result in lower occurrences of underestimation and higher occurrences of overestimation. Consistent with studies that examined weight misperception among adolescents,[6,12,13,16,24] we found that male subjects were more likely than female subjects to misperceive their weight status using either methodology. In addition, female subjects were more likely than male subjects to overestimate, whereas male subjects were more likely to underestimate their weight status, findings that are consistent with previous research.[10,13,24]

Our study found that 87% of students who self-reported weight and height had correspondence between their weight status calculated with self-reported data and weight status calculated with actual data. Beck and colleagues[14] reported similar results among a sample of fifth-grade students, with approximately 79% accurately reporting their height or weight. Research among children indicates that older youth estimate their height and weight with better precision than do younger children,[14] which may explain the high percentage of correspondence between self-reported and actual weight status in the present study. In an effort to better understand these findings in the context of this study, we examined for differences between students who did provide versus those who did not provide self-reported weight and height data. Buttenheim and colleagues found obesity prevalence to be higher among younger teens who did not self-report weight and height compared with those who did.[25] This finding was not replicated in our sample, and only family household income was found to differentiate the groups, with this finding being difficult to interpret because of high numbers reporting "unknown" on this variable.

We further predicted that it is possible that those who provided self-report data were more aware of their weight and height or had recently obtained this information. The state of Tennessee long ago incorporated the Coordinated School Health (CSH; http://www.tennessee.gov/education/schoolhealth/aboutcsh.shtml) approach, including monitoring of student weight and height. [A]An informal telephone survey was completed, with several CSH coordinators in schools participating in the *Team Up for Health Living* project to assess whether students were typically provided weight and height information to explain the high rates of correspondence. These discussions revealed a variety of methods for collecting and reporting weight and height data across school settings; however, the majority of CSH coordinators reported typically not providing these data during actual measurements with students. This was informative, although a more rigorous research design is needed to confirm these findings. The high rate of correspondence may be considered unexpected given the high rate of overweight/obesity in the current sample (approximately 46%) and that findings from a systematic review on the accuracy of proxy measures in assessing adolescent overweight suggest self-reported weight and height result in systematic underestimation of BMI and, consequently, of actual overweight status.[9] Future research may seek to explain the relation between weight status calculated with self-reported data as compared with actual weight and height data. Future studies also may examine the potential influence of overweight/obesity rates associated with self-perceived weight status. For example, in areas where there are higher rates of overweight/obesity, there may be more acceptance or less concern about higher weight.

The strengths of the present study include the use of a large sample size from a cluster-randomized study design, including weight and height data collected via both self-report and objective measurements. The limitations of the study include the focus on a specific age group, primarily ninth-grade students, as compared with a broader range of ages. It may be that factors specific to this group, such as sexual maturity, could influence self-perceptions of weight. In addition, we were unable to determine when participants had last measured weight or height, a factor that may bias results.

Although there were no differences in terms of actual weight status among adolescents providing versus not providing self-reported weight and height, there is still the chance that the absence of their internal self-report data may contribute to their inability to make a judgment about themselves when responding to the perceived weight status question. Furthermore, the differences between perceived weight response options and the CDC weight status categories may be problematic. For example, when students were asked about

[A]Was the telephone survey part of the present study or part of Tennessee's CSH initiative? Unclear. Also, if part of Tennessee's program, a reference citation is required. Or does ref 9 cover all of this material?

their perceived weight, there was no mention of “health” or “obesity,” as in the CDC weight status categories nomenclature (ie, healthy weight, overweight/obese), and it is unknown how students who reported they were “about the right weight” may have actually perceived their weight status (eg, possibly not as a healthy weight as it would have been assigned), suggesting some difference in semantic correspondence. These concerns are not unique to this study and may be applied to the larger literature using these methodologies.

This study also was conducted in the Appalachian region of the United States, where there are high rates of diabetes and obesity.[26] Future studies wishing to replicate these findings should include a larger age range and multiple geographical locations, and may consider a larger ethnic distribution because of suggestions that weight misperception may differ across ethnic groups.[6,11–13]

Conclusions

Given the emerging literature demonstrating health risks associated with weight misperception, this study suggests that researchers should interpret findings with an awareness of potential differences based on the method of calculating weight misperception. Some large-scale weight misperception studies[10,13] use proxy measures such as self-reported weight and height data. It has been suggested that these measures frequently replace actual measures as a result of convenience or cost.[8,27] Based on our findings, the results from such studies should be interpreted with caution because these studies may reveal lower occurrences of underestimation and higher occurrences of overestimation than studies using actual weight and height measurements. Instead, researchers should aim to collect actual weight and height from participants in an effort to determine weight misperception. One alternative solution that may improve large-scale research relying on self-report data is a two-method measurement that requires actual data on only a portion of the sample, providing researchers with a strategy to reduce bias and improve estimates.[28] The prevalence of weight misperception in the present study further highlights the importance of screening for weight misperception in both female and male subjects. Furthermore, the differences in measurement techniques highlight the need for careful interpretation of findings and may have implications for clinical practice. Specifically, practitioners may benefit from using actual as opposed to self-report weight and height data, especially when assessing weight misperception.

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Key Points

- Studies using self-reported weights and heights of adolescents in the estimation of weight misperception may reveal lower occurrences of underestimation and higher occurrences of overestimation than studies using actual weights and heights.
- Male subjects were more likely than female subjects to misperceive their weight status despite the use of self-reported weight status or actual weight status in estimating weight misperception.
- Researchers should interpret study findings with awareness of the potential differences based on the method of calculating weight misperception.

Table 1

Sample characteristics

Characteristics	Overall[a]	Boys	Girls
Age, y, mean (SD)	14.9 (0.7)	14.9 (0.8)	14.8 (0.7)
Sex, n (%)			
Female	744 (49.3)	NA	744 (100)
Male	765 (50.7)	765 (100)	NA
Grade in school, n (%)			
9th	1309 (89.5)	655 (88.6)	654 (90.3)
10th	94 (6.4)	53 (7.2)	41 (5.7)
11th	37 (2.5)	21 (2.8)	16 (2.2)
12th	23 (1.6)	10 (1.4)	13 (1.8)
Race/ethnicity, n (%)			
American Indian or Alaska Native	14 (1.0)	8 (1.1)	6 (0.8)
Asian	4 (0.3)	3 (0.4)	1 (0.1)
Black or African American	11 (0.8)	6 (0.8)	5 (0.7)
Hispanic or Latino	39 (2.7)	20 (2.7)	19 (2.7)
Native Hawaiian or Other Pacific Islander	1 (0.1)	0 (0)	1 (0.1)
White non-Hispanic or non–African American	1364 (93.4)	692 (92.9)	672 (93.9)
Other	28 (1.9)	16 (2.2)	12 (1.7)
Highest level of education: mother, n (%)			
Less than high school	86 (6.0)	38 (5.3)	48 (6.8)
High school graduate or GED	416 (29.1)	217 (30.1)	199 (28.1)
Some college	308 (21.5)	153 (21.2)	155 (21.9)
College degree	387 (27.1)	193 (26.8)	194 (27.4)
Unknown	233 (16.3)	120 (16.6)	113 (15.9)
Highest level of education: father, n (%)			
Less than high school	121 (8.5)	59 (8.2)	62 (8.8)
High school graduate or GED	474 (33.3)	245 (34.1)	229 (32.5)
Some college	217 (15.2)	121 (16.8)	96 (13.6)
College degree	298 (20.9)	152 (21.1)	146 (20.7)
Unknown	314 (22.1)	142 (19.8)	172 (24.4)
Family household income, n (%)			
<$20,000	56 (3.9)	30 (4.1)	26 (3.6)
$20,000–$44,999	111 (7.6)	71 (9.7)	40 (5.5)
$45,000–$74,999	112 (7.7)	65 (8.9)	47 (6.5)
≥$75,000	128 (8.8)	84 (11.5)	44 (6.1)
Unknown	1048 (72.0)	481 (65.8)	567 (78.3)
Perceived weight status (%)			

Characteristics	**Overall**[a]	**Boys**	**Girls**
Underweight	169 (11.4)	106 (14.1)	63 (8.6)
Healthy weight	808 (54.3)	419 (55.6)	389 (53.0)
Overweight/obese	511 (34.3)	229 (30.4)	282 (38.4)
Self-reported weight status (%)			
Underweight	23 (1.9)	13 (2.1)	10 (1.6)
Healthy weight	737 (59.3)	342 (54.6)	395 (64.1)
Overweight/obese	483 (38.9)	272 (43.4)	211 (34.3)
Actual zBMI, mean (SD)	0.9 (1.1)	1.0 (1.1)	0.8 (1.0)
Actual weight status (%)			
Underweight	17 (1.1)	11 (1.5)	6 (0.8)
Healthy weight	782 (52.5)	363 (48.1)	419 (56.9)
Overweight/obese	692 (46.4)	381 (50.5)	311 (42.3)

Percentages in each column were adjusted to total approximately 100%. Perceived weight status included collapsing or fitting “very underweight” and “slightly underweight” into underweight, “about the right weight” into healthy weight, and “slightly overweight” and “very overweight” into overweight/obese categories. Self-reported and actual weight status categories were assigned via age- and sex-specific BMI percentile scores based on the CDC 2000 growth charts. BMI, body mass index; CDC, Centers for Disease Control and Prevention; GED, General Educational Development; SD, standard deviation; zBMI, age- and sex-standardized BMI.

[a]Missing data for the overall sample was as follows: grade (n =46), race/ethnicity (n =48), mothers' education (n =79), fathers' education (n =85), family household income (n =54), perceived weight status (n =21), self-reported weight status (n =266), actual zBMI (n =7), and actual weight status (n =18).

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Table 2

Proportions of weight misperception by methodology

	Perceived/self-reported	Perceived/actual	χ^2	Nominal P^a	Actual P^b
Overall, %					
2 × 2 table			1.18	NA	0.278
Accurate	70.7 (n = 874)	68.7 (n = 1011)			
Misperception[c]	29.4 (n = 363)	31.3 (n = 460)			
3 × 2 table			16.20	NA	0.0003
Underestimation	21.9 (n = 271)	26.7 (n = 393)	8.40	0.0038	0.0076
Accurate	70.7 (n = 874)	68.7 (n = 1011)	1.18	0.178	0.356
Overestimation	7.4 (n = 92)	4.6 (n = 67)	10.10	0.0015	0.003
Boys, %					
2 × 2 table			0.62	NA	0.4308
Accurate	65.5 (n = 408)	63.4 (n = 472)			
Misperception[c]	34.5 (n = 215)	36.6 (n = 272)			
3 × 2 table			10.94	NA	0.0042
Underestimation	29.9 (n = 186)	34.7 (n = 258)	3.59	0.058	0.116
Accurate	65.5 (n = 408)	63.4 (n = 472)	0.62	0.4308	0.8616
Overestimation	4.7 (n = 29)	1.9 (n = 14)	8.60	0.0034	0.0068
Girls, %					
2 × 2 table			0.55	NA	0.4598
Accurate	75.9 (n = 466)	74.1 (n = 539)			
Misperception[c]	24.1 (n = 148)	25.9 (n = 188)			
3 × 2 table			8.06	NA	0.018
Underestimation	13.8 (n = 85)	18.6 (n = 135)	5.42	0.0199	0.0398
Accurate	75.9 (n = 466)	74.1 (n = 539)	0.55	0.4598	0.9196
Overestimation	10.3 (n = 63)	7.3 (n = 53)	3.72	0.0539	0.1078

[a] P value was obtained from multiple comparisons.

[b]For the percentage data of multiple comparisons in categorical data analysis, the correction of adjustment of the significant level was the number of pairwise comparisons minus one.

[c]Misperception includes underestimation and overestimation.

Table 3

Sex differences within weight misperception methodologies

	Boys	Girls	χ^2	Nominal P^a	Actual P^b
Perceived/self-reported, %					
2 × 2 table			16.15	NA	<0.0001
Accurate	65.5 (n = 408)	75.9 (n = 466)			
Misperception[c]	34.5 (n = 215)	24.1 (n = 148)			
3 × 2 table			53.99	NA	<0.0001
Underestimation	29.9 (n = 186)	13.8 (n = 85)	46.34	<0.0001	<0.0002
Accurate	65.5 (n = 408)	75.9 (n = 466)	16.15	<0.0001	<0.0002
Overestimation	4.7 (n = 29)	10.3 (n = 63)	14.12	0.0002	0.0004
Perceived/actual, %					
2 × 2 table			19.59	NA	<0.0001
Accurate	63.4 (n = 472)	74.1 (n = 539)			
Misperception[c]	36.6 (n = 272)	25.9 (n = 188)			
3 × 2 table			65.45	NA	<0.0001
Underestimation	34.7 (n = 258)	18.6 (n = 135)	48.73	<0.0001	<0.0002
Accurate	63.4 (n = 472)	74.1 (n = 539)	19.59	<0.0001	<0.0002
Overestimation	1.9 (n = 14)	7.3 (n = 53)	24.74	<0.0001	<0.0002

[a] P value was obtained from multiple comparisons.

[b] For the percentage data of multiple comparisons in categorical data analysis, the correction of adjustment of the significant level was the number of pairwise comparisons minus one.

[c] Misperception includes underestimation and overestimation.

Table 4

Comparison of participants in the self-reported/actual analytic sample vs participants in nonanalytic sample as a result of incomplete self-reported weight/height data (N = 1509)

Characteristics[a]	Analytic sample (n = 1243)	In nonanalytic sample (n = 266)	A	*P*
Age, y, mean (SD)	14.85 (0.8)	14.86 (0.8)		0.870
Sex, n (%)				0.671
Female	616 (49.6)	128 (48.1)		
Male	627 (50.4)	138 (51.9)		
Grade, n (%)				0.133
9th	1089 (89.6)	220 (88.7)		
10th	79 (6.5)	15 (6.1)		
11th	32 (2.6)	5 (2.0)		
12th	15 (1.2)	8 (3.2)		
Race/ethnicity, n (%)				0.233
American Indian or Alaska Native	13 (1.1)	1 (0.4)		
Asian	4 (0.3)	0 (0.0)		
Black or African American	10 (0.8)	1 (0.4)		
Hispanic or Latino	30 (2.5)	9 (3.6)		
Native Hawaiian or Other Pacific Islander	1 (0.9)	0 (0.0)		
White non-Hispanic or non–African American	1135 (93.7)	229 (92.0)		
Other	19 (1.6)	9 (3.6)		
Highest level of education: mother, n (%)				0.531
Less than high school	70 (5.9)	16 (6.6)		
High school graduate or GED	346 (29.2)	70 (28.8)		
Some college	260 (21.9)	48 (19.8)		
College degree	326 (27.5)	61 (25.1)		
Unknown	185 (15.6)	48 (19.8)		
Highest level of education: father, n (%)				0.304
Less than high school	101 (8.5)	20 (8.4)		
High school graduate or GED	389 (32.8)	85 (35.7)		
Some college	181 (15.3)	36 (15.1)		
College degree	260 (21.9)	38 (16.0)		
Unknown	255 (21.5)	59 (24.8)		
Family household income, n (%)				0.008
<$20,000	45 (3.7)	11 (4.5)		
$20,000–$44,999	95 (7.9)	16 (6.5)		
$45,000–$74,999	102 (8.4)	10 (4.1)		
≥$75,000	116 (9.6)	12 (4.9)		
Unknown	851 (70.4)	197 (80.1)		

[A]This col head needs a title.

Characteristics[a]	**Analytic sample (n = 1243)**	**In nonanalytic sample (n = 266)**	**A**	***P***
Perceived weight status (%)				0.173
Underweight	142 (11.5)	27 (10.8)		
Healthy weight	683 (55.2)	125 (49.8)		
Overweight/obese	412 (33.3)	99 (39.4)		
Self-reported weight status (%)				
Underweight	23 (1.9)	NA		
Healthy weight	737 (59.3)	NA		
Overweight/obese	483 (38.9)	NA		
Actual zBMI, mean (SD)	0.9 (1.0)	1.0 (1.2)		0.128
Actual weight status (%)				0.320
Underweight	13 (1.1)	4 (1.6)		
Healthy weight	657 (53.3)	125 (48.5)		
Overweight/obese	563 (45.7)	129 (50.0)		

Percentages in each column were adjusted to total approximately 100%. Perceived weight status included collapsing or fitting “very underweight” and “slightly underweight” into underweight, “about the right weight” into healthy weight, and “slightly overweight” and “very overweight” into overweight/obese categories. Self-reported and actual weight status categories were assigned via age- and sex-specific BMI percentile scores based on the CDC 2000 growth charts. BMI, body mass index; CDC, Centers for Disease Control and Prevention; GED, General Educational Development; SD, standard deviation; zBMI, age- and sex-standardized BMI.

[a]Missing data as follows: grade (n = 46), race/ethnicity (n = 48), mothers' education (n = 79), fathers' education (n = 85), family household income (n = 54), perceived weight status (n =21), self-reported weight status (n =266), actual **z**BMI (n = 7), and actual weight status (n = 18).

[A]This col head needs a title.