



Racial/ethnic and weight status disparities in dieting and disordered weight control behaviors among early adolescents



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ABSTRACT

Background: This study examined whether racial/ethnic minority early adolescents with overweight/obesity are at increased risk of disordered weight control behaviors, defined as unhealthy behaviors aiming to control or modify shape and weight, ranging from self-induced vomiting to the use of dietary supplements.

Methods: U.S. Middle school children ($n = 12,511$) provided self-report of gender, race/ethnicity, height, and weight as well as dieting and disordered weight control behaviors.

Results: In the entire sample, 25.6% ($n = 1514$) of girls and 16.6% ($n = 1098$) of boys reported dieting within the last month, while 3.5% ($n = 200$) of girls and 2.7% ($n = 176$) of boys reported DWCB. Within all racial/ethnic groups, participants classified as being overweight/obese (34% to 50%) were more likely to report dieting compared to their counterparts without overweight/obesity (9.6% to 29.6%). Racial/ethnic minority children with overweight/obesity had an increased risk of dieting and disordered weight control behaviors compared to their counterparts without overweight/obesity, and, for some outcomes, compared to their White peers with overweight/obesity.

Conclusions: Racial/ethnic minority early adolescents with overweight/obesity are a particularly vulnerable group for disordered eating.

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1. Introduction

Among early adolescents, overweight/obesity is associated with increased risks of dieting and disordered weight control behaviors (DWCB) ranging from self-induced vomiting to the use of dietary supplements, frequently due to social pressures to maintain a thin body (Austin et al., 2011; Goldschmidt, Aspen, Sinton, Tanofsky-Kraff, & Wilfley, 2008). DWCB include a number of behaviors aiming to control or alter body shape and weight that are health compromising and harmful, even when not meeting the frequency or the intensity of clinical criteria for eating disorders. Furthermore, both DWCB (also referred to as unhealthy weight control behaviors, or extreme weight control behaviors in the literature) and overweight/obesity, have been shown to

occur at higher rates among racial/ethnic minority youth (Austin et al., 2011; Bucchianeri, Eisenberg, & Neumark-Sztainer, 2013; Croll, Neumark-Sztainer, Story, & Ireland, 2002; Neumark-Sztainer et al., 2002). Minority stress theory posits that this increased risk is a consequence of the negative affect resulting from ethnic/race-related stigmatization (Gordon, Castro, Sitnikov, & Holm-Denoma, 2010). Consistent with this, minority stress has been found to play an important role in the development of eating pathology (Perez, Voelz, Pettit, & Joiner, 2002).

Dieting and DWCB are associated with a range of negative physical outcomes, as well as increased mental health concerns (Goldschmidt et al., 2008). In adolescents with overweight/obesity, both dieting and DWCB are particularly concerning, as they have been associated with excess increases in body mass index (BMI) and binge eating over time (Neumark-Sztainer et al., 2006). To date, however, few studies have examined racial/ethnic differences in the increased risk for these behaviors among children with overweight/obesity. Therefore, this study

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therefore aimed to examine whether racial/ethnic minority early adolescents (grade 6–8) with overweight/obesity present a particularly high-risk group for dieting and DWCB.

2. Methods

2.1. Participants and procedure

The present data are drawn from a self-report survey administered at baseline in 47 middle schools (Massachusetts) in 2005 participating in the Healthy Choices study. Data from 12,511 early adolescents (47% female) from 6th, 7th, and 8th grade were used, representing 74% of the total study sample. Greater detail regarding the procedure and sample is available elsewhere (Austin et al., 2011; Peterson et al., 2015). The Harvard T.H. Chan School of Public Health institutional review board approved this study, and passive parental consent was obtained.

2.2. Measures

Outcome variables: Dieting and DWCBs were assessed using items adapted from the Youth Risk Behavioral Surveillance System (Brener, Collins, Kann, Warren, & Williams, 1995). Students indicated whether or not they had dieted during the last 30 days (yes/no). DWCBs were assessed by asking respondents to indicate whether they had engaged in various behaviors in during the last 30 days to lose or maintain their weight: “Vomit or throw up on purpose after eating”; “Take laxatives”; “Take diet pills without a doctor's permission”.

Demographic variables: Students self-reported height and weight, which has moderate validity in adolescent samples (Sherry, Jefferds, & Grummer-Strawn, 2007), were used to classify students as having overweight/obesity status (BMI \geq 85th percentile for age and sex) following U.S. Centers for Disease Control and Prevention guidelines (<http://www.cdc.gov/growthcharts/>). Participant reported Race/ethnicity options included non-Hispanic White; Asian; non-Hispanic Black; Hispanic/Latino/a; or Hawaiian/Pacific Islander, American Indian/Alaskan Native, or Other, with the possibility of choosing more than one option. Given the small number of participants in the sample who identified as Hawaiian/Pacific Islander, American Indian/Alaskan Native, these groups were included in the Other category for the analyses.

2.3. Data analyses

Due to small cell sizes, chi-square analyses were conducted to compare the: (1) prevalence of dieting and DWCB between participants with and without overweight/obesity within each ethnic subgroup, and (2) prevalence of dieting and DWCB between/white participants and racial/ethnic minority participants with overweight/obesity.

When cell sizes were insufficient for chi-square analyses, Fisher exact tests were conducted. Finally, logistic regression, using generalized estimating equation to account for school-level clustering, were used to estimate odds ratios (ORs) with 95% confidence intervals (CI) of reporting dieting and DWCB in the combined racial/ethnic minority youth groups (Asian, non-Hispanic Black, Latino/a, or Other) with overweight/obese status as compared with their same-gender, white peers without overweight, stratified by sex.

3. Results

3.1. Weight status differences

The sample was diverse both in terms of race/ethnicity and school and neighborhood socioeconomic status. Overall, 25.6% ($n = 1514$) of girls and 16.6% ($n = 1098$) of boys reported dieting within the last month, while 3.5% ($n = 200$) of girls and 2.7% ($n = 176$) of boys reported DWCB (Table 1). Within all racial/ethnic groups, participants classified as being overweight/obese (34% to 50%) were more likely to report dieting compared to their counterparts without overweight/obesity (9.6% to 29.6%). Weight status differences were found for reported prevalence of DWCB only among girls classified as Other race/ethnicity; specifically, those who were overweight/obese were more likely to report DWCB behaviors than their counterparts without overweight/obesity (20.7% vs. 5.7%). Among boys identifying as non-Hispanic Black (14.9% vs. 6.1%) or Latino (8.8% vs. 2.9%), those with overweight/obesity were more likely to report DWCB compared to their counterparts without overweight/obesity.

3.2. Racial/ethnic differences among participants with overweight/obesity

Among girls who were overweight/obese, there was no difference in the prevalence of dieting between the four racial/ethnic minority groups and those identifying as white. With regards to DWCBs, girls who were overweight/obese identifying as Other were more likely to report DWCB than their white counterparts, $p < 0.0001$. Similar patterns were found for girls identifying as non-Hispanic Black, $p = 0.054$, and Latina, $p = 0.073$, though not reaching statistical significance. Among boys with overweight/obesity, compared to their white counterparts, those identifying as non-Hispanic Black tended to be more likely to report dieting, although this difference was not significant, $p = 0.06$. Similar patterns were found when comparing boys with overweight/obesity identifying as Latino versus white, $p = 0.072$. In addition, boys who were overweight/obese identifying as non-Hispanic Black and Latino were more likely to report DWCB compared to their white peers, $p < 0.0001$ and $p = 0.0003$ respectively. Similar patterns were found for boys identifying as Asian, $p = 0.058$.

Table 1

Past month prevalence of dieting and disordered weight control behaviors stratified by sex, ethnicity and overweight/obesity (OW/OB) status.

| | n (%) dieted in past month | | | | n (%) with disordered weight control behaviors | | | |
|----------|----------------------------|---------------|--------------|--------------------------|--|--------------------------|------------|--------------------------|
| | Girls | | Boys | | Girls | | Boys | |
| | Not OW/OB | OW/OB | Not OW/OB | OW/OB | Not OW/OB | OW/OB | Not OW/OB | OW/OB |
| Asian | 30 (14.78%) | 11 (50%)* | 20 (10.36) | 16 (29.48)* | 4 (1.97) | 1 (4.55%) | 5 (2.59) | 4 (7.41) ^b |
| Black | 34 (23.78%) | 30 (47.62%)* | 25 (12.82) | 33 (44.59)* ^b | 6 (4.20%) | 5 (7.94%) ^b | 12 (6.15) | 11 (14.86)* ^a |
| Latina/o | 74 (25.17%) | 44 (43.14%)* | 42 (13.72) | 61 (41.50)* ^b | 14 (4.76%) | 7 (6.86%) ^b | 9 (2.94) | 13 (8.84) ^a |
| Other | 114 (29.61%) | 36 (41.38%)* | 53 (13.87) | 55 (38.73)* | 22 (5.71) | 18 (20.69)* ^a | 11 (2.88) | 7 (4.93) |
| White | 799 (20.48%) | 342 (48.37%)* | 368 (9.58) | 425 (34.03)* | 102 (2.61) | 21 (2.97) | 72 (1.86) | 32 (2.56) |
| Total | 1514 (25.6%) | | 1098 (16.6%) | | 200 (3.5%) | | 176 (2.7%) | |

Note: “Other” racial/ethnic group includes Hawaiian/Pacific Islander, American Indian/Alaskan Native, as well as those identifying as Other.

* Significant differences ($p < 0.05$) in past month prevalence in dieting and disordered weight control behaviors between youth with overweight or obesity and their lean counterparts, stratified by sex, based on chi-square tests.

^a Significant differences in past month prevalence in dieting and disordered weight control behaviors between White group and corresponding ethnic group, stratified by sex, based on chi-square tests.

^b Trend-level ($p < 0.10$) differences in past month prevalence in dieting and disordered weight control behaviors between White group and corresponding ethnic group, stratified by sex, based on chi-square tests.

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