Gender Comparisons of Unhealthy Weight-control Behaviors Among Sixth-Graders

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ABSTRACT

Objective: To examine gender differences in unhealthy weight-control behaviors (UWCB) and identify key psychosocial and demographic correlates of UWCB among sixth-graders.

Methods: A cross-sectional survey was completed by 146 boys and 153 girls at a middle school. Secondary data analyses included bivariate tests and multivariable logistic regression.

Results: Forty-seven percent of participants reported 1 or more UWCB, with no differences by gender ($P = .75$). Factors common to boys and girls included: lower global self-esteem; lower body-esteem; and greater negative parental modeling among participants who engaged in UWCB compared to those who did not. However, multivariable models revealed gender differences. Among boys, body mass index, negative parental modeling, and global self-esteem retained statistically significant associations with UWCB after controlling for other variables in the model, whereas race and weight-related body-esteem remained significant for girls.

Conclusions and Implications: This research highlights the need for gender-specific UWCB prevention programs implemented in late childhood and early adolescence.

Key Words: body mass index, disordered eating behaviors, body image, self-esteem, parental influence (*J Nutr Educ Behav*. 2013;45:450-454.)

INTRODUCTION

Disordered eating behaviors are deemed significant public health issues because of their prevalence,[1] association with other unhealthy behaviors,[2] and tendency to progress to long-term physical, mental, and psychosocial health consequences.[3,4] Also referred to as unhealthy weight-control behaviors (UWCB), disordered eating behaviors include the following: fasting; eating very little food; consuming meal supplements; and skipping meals.[1,4] More extreme disordered eating behaviors, such as self-induced vomiting and laxative, diuretic, and diet pill use/misuse, have been classified as very unhealthful weight control behaviors.[4]

The importance of developing interventions for decreasing UWCB has been noted in Healthy People 2020, the science-based, 10-year health agenda of the United States (US), with the addition of the new Mental Health Objective: "Reduce the proportion of adolescents (10-19 years of age) who engage in disordered eating behaviors in an attempt to control their weight."[5] In order to determine whether separate interventions should be developed to target early adolescent boys and girls, this study employed Social Cognitive Theory to explore potential gender differences and psychosocial correlates of UWCB among sixth-graders.

METHODS

Study Procedures

The current research is based on data from a study exploring impacts of a state-level policy requiring the reporting of body mass index (BMI) measurements to parents.[6] The original cross-sectional study gathered data from students using a self-report questionnaire. The University of South Florida Institutional Review Board, as well as the Hillsborough County Public School Research Board, granted approval for the original study. The current study received institutional review board exemption as it consisted of secondary analysis of deidentified data.

Participants

Of 346 sixth-grade students at a middle school in Tampa, Florida, 86% (n = 299) assented to participate. The sample was roughly evenly distributed between boys (48.8%) and girls (51.2%); the mean age was 11.9 years old (SD = 0.54, range = 11-13 years old). Students self-identified into the following combined ethnic/racial categories: white, non-Hispanic/Latino (41.0%); black, non-Hispanic/Latino (22.5%); Hispanic (26.4%); Asian (6.6%); and other (3.5%). Patterns of racial/ethnic identification were similar for boys and

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girls. Although socioeconomic status was not assessed, the participating middle school was not designated as a Title 1 school, and it was located within a geographic zip code in which the median household income was more than $30,000 higher than the median household income in the US, according to 2010 census data.

Based on the Centers for Disease Control and Prevention's sex-specific BMI-for-age growth charts,[7] 3.0% of participants were observed to be underweight; 61.5% normal weight; 17.1% overweight; and 18.4% obese. No significant sex differences were observed by proportions classified in each weight category (χ^2 [3, 296] = 2.92; $P = .40$).

Table 1. Gender Comparisons of Weight-control Behaviors Among Sixth-graders (n = 299)

	Boys, n (%)[a]	Girls, n (%)[a]	χ^2	P*
One or more *unhealthy* weight-control behaviors[b]	68 (48)	70 (46)	0.20	.75
(a) Took diet pills	3 (2)	0 (0)	3.20	.07
(b) Ate very little food for a day or more	37 (26)	40 (27)	0.02	.91
(c) Skipped breakfast	35 (25)	56 (37)	5.47	.02
(d) Skipped meals other than breakfast	26 (18)	26 (17)	0.05	.83
(e) Ate more fruits and vegetables	88 (63)	108 (72)	2.76	.10
(f) Ate less high-fat food	72 (51)	92 (61)	2.67	.10
(g) Exercised more	106 (74)	112 (74)	0.00	.99
(h) Ate fewer sweets	82 (58)	104 (69)	4.24	.04

*Results were considered significant at $P \leq .006$ based on Bonferroni correction; [a]Valid percentages are based on the number of respondents who answered each question; [b]Unhealthy weight-control behavior included: skipping breakfast, skipping meals other than breakfast, taking diet pills, and eating very little food.

Measures

Weight-control behaviors were assessed using the yes/no questions listed in Table 1. A dummy variable was created by classifying participants who answered yes to 1 or more of the 4 items that described UWCB (items a-d, Table 1) and assigning them a code of 1. Other participants who reported no UWCB were coded 0.

The Body-Esteem Scale (BE) for Adolescents and Adults[8] was used to measure self-evaluations of overall appearance and weight using Likert-type items for each subscale, including: (1) BE-Appearance (10 items, Cronbach $\alpha = .91$); and (2) BE-Weight (8 items; Cronbach $\alpha = .91$). An average score (ranging from 1 to 5) was obtained for each subscale. Higher scores indicate more positive feelings about one's body.

The Rosenberg Self-Esteem Scale includes 10 items for use in assessing global self-esteem (Cronbach $\alpha = .82$).[9] This is a widely used scale that has been determined to be reliable and valid among various different populations.[10] An average scale measure (ranging from 1 to 4) was calculated for all students who answered 8 or more of the 10 items. Higher scores indicate higher self-esteem.

Child report of negative parental modeling was assessed via the following questions: In the past month, how often have your parents/guardians: Made a comment to you about your weight that made you feel bad; Encouraged you to diet in order to lose weight; Complained about how they look; Complained about their weight; Talked about wanting to lose weight; Gone on a diet; Made comments about other people's weight (Cronbach $\alpha = .82$). All items were rated on a Likert-type scale ranging from not at all (1) to every day (4). An average score (ranging from 1 to 4) was calculated for all children who answered 5 or more of the 7 questions. The higher the score, the greater the child report of negative parental modeling.

Data Analyses

Data were analyzed using SPSS (version 19.0, SPSS, Inc, Chicago, IL, 2010). Initial analyses included chi-square tests to determine whether the proportion of boys and girls who engaged in weight-control behaviors differed. Separate bivariate analyses for boys and girls consisted of independent samples t tests and chi-square tests to determine which psychosocial variables demonstrated a significant relationship with UWCB. Psychosocial variables from bivariate analyses that were statistically significant at a 2-sided value of $P \leq .05$ were entered into 2 logistic regression models, 1 for each sex, in a forward stepwise fashion after first entering variables to control for age, BMI, and race/ethnicity.

RESULTS

Nearly half of male (n = 68, 48%) and female participants (n = 70, 46%) engaged in 1 or more UWCB, with no statistically significant difference by sex (Table 1). After employing a Bonferroni correction to reduce the risk of a type I error, no significant gender differences in specific types of weight-control behaviors were identified (Table 1).

Sex-stratified bivariate analyses suggested possible differences in age, BMI, and race/ethnicity based on whether or not participants engaged in UWCB (Supplementary Table 1). Accordingly, these variables were controlled for in the regression models. Bivariate analyses also revealed lower global self-esteem, lower body-esteem, and greater negative parental modeling among both male and female participants who engaged in UWCB compared to those who did not (Supplementary Table 2).

Age, parent modeling, and self-esteem differed by sex after controlling for the effects of other variables in the models (Tables 2 and 3). Thirteen-year-old male participants were approximately 5 times more likely to engage in UWCB compared to 11-year-old boys (odds ratio [OR] = 5.30, 95% confidence interval [CI] = 1.10, 25.46). In addition, a 2-fold (95% CI = 1.09, 4.17) increase in the odds of engaging in UWCB was observed for every 1-point increase in negative parental modeling; for every 1-point increase in self-esteem, the odds of engaging in UWCB were halved (OR = 0.49, 95% CI = 0.24, 0.98).