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Prospective Association Between Overvaluation of Weight and Binge Eating Among Overweight Adolescent Girls



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ABSTRACT

Purpose: We investigated whether overvaluation of weight, defined as having a high degree of concern with weight such that it unduly influences self-evaluation, was prospectively associated with binge eating onset among overweight adolescent girls and whether overvaluation of weight signaled greater impairment among those with weekly binge eating.

Methods: We used generalized estimating equations to assess the prospective association between weight overvaluation at Time 1 and the onset of weekly binge eating at Time 2 among 767 overweight adolescent girls (ages 12–18 years) participating in the Growing Up Today Study. In a cross-sectional analysis of overweight girls with weekly binge eating at Time 2, we examined whether overvaluation of weight was associated with greater impairment assessed by examining their rates of more severe depressive symptoms and low subjective social status.

Results: At Time 1, 24.5% of overweight/obese girls overvalued weight. Overweight girls who overvalued weight were more likely to have started binge eating weekly 2 years later (odds ratio, 2.9; 95% confidence interval [CI], 1.2–7.3). Among overweight girls who reported weekly binge eating at Time 2, those who overvalued weight were at greater risk of having more severe depressive symptoms (odds ratio, 10.4; 95% CI, 1.3–85.6). Also among girls with weekly binge eating at Time 2, we saw a significant association between continuous measures of overvaluation and subjective social status (β , .71; 95% CI, .08–1.34) but not in analyses using binary measures. **Conclusions:** We found that overvaluation was associated with the development of weekly binge eating in overweight girls and with greater impairment among those with weekly binge eating.

IMPLICATIONS AND CONTRIBUTION

Overvaluation of weight among overweight girls increases risk for the onset of weekly binge eating as well as greater severity and comorbidity. Overvaluation of weight represents a potential target for prevention and intervention efforts, as well as a diagnostic specifier.

Weight and shape overvaluation refers to overconcern about weight and/or shape to the degree that it largely or unduly influences self-evaluation or self-worth [1]. In contrast to body

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dissatisfaction, which is experienced by many individuals in our society to varying degrees, relatively fewer people define or judge themselves primarily based on their weight and/or shape (i.e., overvaluation) [1,2]. Overvaluation of weight and/or shape has historically been considered the core psychopathology of eating disorders [1,3]. Indeed, diagnostic criteria for anorexia nervosa and bulimia nervosa require the presence of overvaluation of weight and/or shape [3]. In contrast, binge eating

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disorder (BED) does not include a cognitive criterion pertaining to body image. However, body dissatisfaction is a known risk factor for the development of binge eating among youth and overweight youth in particular [4–6]. In addition, an amassing literature suggests that overvaluation of weight and/or shape has diagnostic and clinical relevance among individuals with BED [1,7].

Studies conducted among adults suggest that weight and/or shape overvaluation warrants consideration as a diagnostic specifier because it signals greater severity within BED [1]. Among adults with BED, those who overvalue weight and/or shape have more severe eating disorder psychopathology [8,9], higher depression levels [8], greater psychiatric and psychosocial impairment [7], worse treatment outcomes [10], and lower rates of remission [11–14]. Others have suggested that overvaluation of weight and/or shape be considered a diagnostic requirement rather than a diagnostic specifier. This recommendation is based on observations that levels of eating disorder psychopathology and functional impairment were markedly elevated among BED cases with extreme weight and/or shape concerns only and that BED cases without extreme weight and/or shape concerns resembled obese non—binge eaters in most respects [15].

Studies of adolescent girls have found that weight concerns, including body dissatisfaction and weight and shape overvaluation, predict the onset of eating disorder symptoms [2,5,16,17]. However, the importance of overvaluation as an indicator of diagnostic severity among youth with BED remains understudied and results from existing studies of youth have yielded inconsistent findings. A prospective study of adolescent girls identified both body dissatisfaction and appearance overvaluation as independent risk factors for binge eating onset [5]. Another study that separately examined weight concerns and overvaluation found that weight and shape concern, but not overvaluation, predicted binge eating onset [2]. One cross-sectional study of children found that the overvaluation of weight or shape criterion was sensitive in discriminating meaningful subtypes of youth with loss of control eating [18], whereas another study did not [19].

Exploring the relationship of overvaluation of weight and the onset of binge eating among overweight youth is of particular importance given their high co-occurrence [20,21]. Youth who binge eat are at risk for developing obesity [22,23], presumably because of excess weight gain from caloric intake during binge eating episodes. The relationship between binge eating and weight is bidirectional, however, with higher body mass index (BMI) among youth associated with binge eating onset [5]. Research with adolescents and adults has provided support for two main pathways to the development of binge eating, a restraint pathway and an affect-regulation pathway, both of which may be relevant to adolescents with weight concerns [6,24]. Overweight youth are also at particularly high risk for body dissatisfaction [25,26], and, accordingly, body dissatisfaction is a known predictor of the onset of binge eating among overweight in adolescent girls [4]. It may be expected then that a more severe form of weight concern (overvaluation of weight) would be a more potent predictor of binge eating onset, and, thus, we hypothesized that overvaluation of weight in our sample would predict the onset of binge eating symptoms.

In this longitudinal study of adolescent girls, we sought to test the significance of weight overvaluation prospectively as a risk factor for developing weekly binge eating. We further aimed to examine the importance of weight overvaluation as a severity indicator among those who binge eat weekly. Using a sample of overweight girls participating in an ongoing cohort, we assessed longitudinally whether overweight adolescent girls who overvalued weight were at greater risk of starting to binge eat weekly than overweight girls who did not overvalue weight. We then explored cross-sectionally whether overweight girls who reported weekly binge eating who overvalued weight experienced greater impairment than those who did not overvalue weight. Greater impairment was assessed by examining co-occurring depressive symptoms, as has been done in adult studies [8,15]. We further explored differences in social stratification as reflected by subjective social status, with low subjective social status potentially signaling greater impairment. Subjective social status is associated with popularity, global self-esteem, depressive symptoms, and overweight/obesity among youth and may be an important determinant of adolescents' health and well-being [27,28]. We hypothesized that among participants who were binge eating on a weekly basis, those who overvalued weight would report higher depressive symptoms and lower subjective social status.

Methods

Participants

Participants are members of the Growing Up Today Study (GUTS), an ongoing cohort study of adolescents throughout the United States that was established in 1996 [29]. GUTS participants are the children of women participating in the Nurses' Health Study II, an ongoing cohort study of female registered nurses. Data from the Nurses' Health Study II were used to identify mothers who had children ages 9–14 years, and children whose mothers gave us consent to invite them to participate were mailed an invitation letter and a questionnaire. A total of 9,039 female participants (68% of the invited female participants) returned completed questionnaires, thereby assenting to participate in the cohort. Participants have been asked to complete questionnaires annually or biennially since enrollment. Girls who were overweight or obese in 1999 and responded to the questions about weight overvaluation and binge eating in 1999 and 2001 were eligible for the present analysis. Overweight status was determined using BMI (weight [kg]/height [m²]) calculated using self-reported weight and height assessed on the 1999 questionnaire. Children and adolescents younger than 18 years were classified as overweight based on age- and genderspecific International Obesity Task Force cutoffs [30]. Participants 18 years or older were classified as overweight/obese if they had a BMI greater than or equal to 25. Of the 9,039 girls originally enrolled, 7,120 responded to the 1999 survey, and, of those, 1,223 were overweight or obese and thus eligible for the present study. One hundred twenty-three participants had missing data for overvaluation of weight or binge eating in 1999, and 343 were missing information on binge eating or overvaluation of weight in 2001. Thus, 767 participants had complete information for all analyses. Analyses were restricted to girls because too few overweight boys reported binge eating in 2001 to explore the relationship among boys. The study was approved by the human subjects committees at Boston Children's Hospital and Brigham and Women's Hospital in Boston, Massachusetts.

Measurement

Overvaluation of weight was assessed on the 1999 (Time 1) and 2001 (Time 2) waves of GUTS using a question from the

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