

# Prevalence, Characteristics, and Correlates of Teasing Experiences among Overweight Children vs. Non-overweight Peers

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### Abstract

HAYDEN-WADE, HELEN A., RICHARD I. STEIN, ATA GHADERI, BRIAN E. SAELENS, MARION F. ZABINSKI, AND DENISE E. WILFLEY. Prevalence, characteristics, and correlates of teasing experiences among overweight children vs. non-overweight peers. *Obes Res.* 2005;13:1381–1392.

**Objective:** Information regarding the prevalence, nature, sources, and psychosocial correlates of teasing was obtained for overweight (OV) children (10 to 14 years of age) vs. non-overweight (non-OV) peers. It was hypothesized that weight-related teasing would be negatively correlated with self-esteem in specific domains and with enjoyment of physical/social activities and positively correlated with loneliness, bulimic behaviors, body dissatisfaction, and enjoyment of sedentary/isolative activities.

**Research Methods and Procedures:** Teasing experiences and psychosocial correlates were assessed among OV children from a fitness camp and a demographically similar school sample of non-OV children.

**Results:** Among the OV children, appearance-related teasing was more prevalent, frequent, and upsetting, involved disparaging nicknames focusing more on weight rather than less stigmatized aspects of appearance, and more often perpetrated by peers in general rather than a specific peer.

Degree of teasing within the full sample was significantly associated with higher weight concerns, more loneliness, poorer self-perception of one's physical appearance, higher preference for sedentary/isolative activities, and lower preference for active/social activities, all but the latter association holding up above and beyond actual weight status and demographics. Among OV children, teasing was associated with bulimic behaviors. Associations with type of teasing showed specificity, with weight-related teasing predicting weight and appearance variables and competency-related teasing related to social domain factors.

**Discussion:** When frequency, intensity, emotional impact, and stigmatized content are examined, findings indicate that teasing is more severe for OV children. Effective interventions are needed to help victims cope with and prevent further weight-related teasing, which may improve peer functioning, enhance weight control efforts, and reduce risk for future eating disturbance.

**Key words:** psychosocial, peer victimization, eating disorder, stigmatization, peer rejection

### Introduction

Peer victimization has been recognized as a significant problem (1–3), and teasing is considered the most psychologically harmful type of peer victimization (4). Teasing has been defined as a personal communication, directed by an agent toward a target, which combines elements of aggression, humor, and ambiguity (5). Nearly all children are teased, but some may have a higher likelihood of being targets for chronic teasing; the experience is often quite painful (6) and psychologically traumatic for some (5), potentially even associated with violence toward oneself or others. In fact, almost one-quarter of girls and 12% of boys who were teased reported attempting suicide, which is significantly higher compared with 8.5% of girls and 4% of boys who were not teased (7). Also, a study of 28 incidents

Received for review June 1, 2004.

Accepted in final form May 25, 2005.

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of U.S. school shootings from 1982–2001 found that most student perpetrators had a history of being victims of severe teasing (8).

Teasing content is often directed at the victim's physical appearance (9), especially one's weight status (10,11). Teasing focused on weight and body shape is associated with poorer psychological functioning (e.g., eating disturbance, low self-esteem, depression) than more general appearance-related teasing (12). Also, given the stigmatization of overweight (OV),<sup>1</sup> teasing may translate to a larger pattern of social maladjustment for OV youth (13). Indeed, OV children have more negative peer interactions (14) and, subsequently, fewer opportunities for developing social skills (15) than non-overweight (non-OV) children, which in turn may lead to more social avoidance in general.

Further research is required to document the exact nature of OV children's teasing experiences and the impact of teasing on the psychosocial well-being of these children. We are aware of one other published study that compares OV and non-OV adolescents (7,16) in rates of and psychosocial factors associated with weight-related teasing. In addition, a recent study (17) conducted a brief assessment of teasing, among other forms of bullying, within a large Canadian national sample 11 to 16 years of age. These studies indicate that OV youth experienced greater rates of teasing than average weight peers and that weight-related teasing was linked to negative psychological factors (e.g., greater depressive symptoms, thinking about/attempting suicide, eating disordered behaviors). The present study moves beyond existing studies on general (17) and weight-related teasing (18) by comparing teasing rates of OV with non-OV children, distinguishing among sources of teasing (7,16), and gathering details of the teasing experience.

Research on how teasing relates to children's functioning across multiple domains is needed, because teasing may contribute to both poorer psychological functioning (e.g., social isolation, effects of criticism) and poorer physical health (e.g., interferes with ability to engage in health-related behaviors). This study examines teasing experiences as they relate to psychological and health outcomes, including loneliness, perceived self-competency, and physical activity preference. Most of the existing findings have been based on adults' or adolescents' retrospective reports of how childhood teasing related to current outcomes. This study is one of the few that focuses on concomitant recall of teasing among children within a younger age range (10 to 14 years).

One particular concern is how teasing is associated with eating disorder psychopathology, given findings that weight- and body-specific teasing have been found to significantly predict disturbed eating behavior and lower body esteem (19,20). Relatedly, specific teasing experiences (i.e., criticism of weight while engaging in physical activity) have been linked to lower rates of physical activity and lowered sports enjoyment (21). Reduction in physical activity among OV children may be caused by negative self-perception and attempts to avoid further teasing regarding weight and shape (22). Indeed, OV children rated body-related barriers (e.g., self-consciousness) among the most frequent types of barriers they had to physical activity (23).

This study aimed to obtain detailed information regarding the prevalence, nature, focus, and sources of teasing among OV children (10 to 14 years of age) in comparison with their non-OV peers. A second aim was to compare OV and non-OV children's level of teasing within three domains: general appearance, weight, and competence. The third aim was to examine how level of weight- and competency-related teasing correlated with various psychosocial outcomes. In addition, we sought to specifically compare the relation of each type of teasing with psychosocial outcomes while controlling for the other types of teasing, the child's relative body weight, and demographics. We hypothesized that weight-related teasing would be negatively correlated with weight concerns, bulimic behaviors, self-esteem in appearance-related domains (e.g., 24), and enjoyment of social/physical activities, whereas competency-related teasing would be associated with lower self-esteem and poorer functioning in the social domain.

## Research Methods and Procedures

### Participants

The present participants—a subset of a group of children in a comprehensive study of psychosocial experiences and eating and physical activity behaviors—were drawn from two sources. An OV sample was recruited through mailings sent to campers preregistered with a summer fitness camp in southern California. A convenience sample of non-OV fourth- and fifth-grade children from schools in southern California (54.7%) and suburban New York City (45.3%) was recruited through letters to parents after obtaining permission from the school principal. Of the recruited OV sample of 134 youth, children were excluded if they were outside the selected age range of 10 to 14 years old ( $n = 40$ ), height or weight information was unavailable ( $n = 1$ ), or they did not meet OV criteria of being at or above the 95th BMI percentile for age and sex (25;  $n = 23$ ). An additional three children in the selected age range did not participate because their parents declined consent. Of the recruited non-OV convenience sample of 95 children, 2

<sup>1</sup> Nonstandard abbreviations: OV, overweight; non-OV, non-overweight; EDI-C, Eating Disorder Inventory Children's Version; EDI-2, Eating Disorder Inventory Revised Version; POTS, Perception of Teasing Scale; ATI, Appearance Teasing Inventory; LSLS, Loneliness and Social Dissatisfaction Scale; SPPC, Self-perception Profile for Children; MLTA, Minnesota Leisure Time Activity Questionnaire.

**Table 1.** Summary of demographics for OV and non-OV samples

Demographic information	OV sample (N = 70)	Non-OV sample (N = 86)
Sex (% male)*	30.0%	48.8%
Age (mean $\pm$ SD)	12.3 $\pm$ 1.3	12.2 $\pm$ 0.9
BMI (mean $\pm$ SD)†	33.1 $\pm$ 6.2	18.0 $\pm$ 2.3
BMI z-score (mean $\pm$ SD)†	2.2 $\pm$ 0.3	-0.3 $\pm$ 0.9
Average percentage above median BMI [%OV (mean $\pm$ SD)]†	78.6 $\pm$ 32.8	-2.1 $\pm$ 11.5

Differences between OV and non-OV samples: \*  $p < 0.05$ , †  $p < 0.001$ .

%OV, or average percentage above BMI, indicates percent overweight or the percent above median BMI for age and sex (BMI actual/median BMI  $\times$  100).

were excluded from analyses because height or weight information was unavailable, and 7 were excluded because they were at or above the 85th BMI percentile for age and sex, thus considered at least at risk for OV (25). No parents of the non-OV convenience sample declined consent for their child's participation in the study.

This left a final sample of 70 OV and 86 non-OV children, 10 to 14 years of age, whose characteristics are summarized in Table 1. The OV sample self-reported as 80% white, 4% Hispanic, 4% African American, 3% Asian, and 3% multiracial or other ethnicity, and 6% did not report their race/ethnicity. Maternal education (self-reported by mothers and used as a proxy for familial socioeconomic status) indicated that 52.6% had a college degree or higher education. Non-OV children were not individually queried about race/ethnicity or maternal education, and information was not obtained from parents. However, they were from school districts with estimated average race/ethnicity rates of 70% white, 14% Hispanic, 3% African American, 1% Asian, 5% Native American, and 7% multiracial or other ethnicity; 63% of children in these school districts had mothers with a college degree or higher education (26).

The OV and non-OV samples were significantly different in BMI, equivalent in age, but significantly different in sex ratio, with the OV group comprised of more female participants than the non-OV group (see Table 1). However, post hoc analyses indicated that none of the variables for which we present statistical comparisons by weight status significantly differed by sex.

### Procedure

Once interest in participating in our study was ascertained, written parental consent was obtained by mail, and child assent was obtained in person at camp or school. This study was approved by the Committee for the Protection of Human Subjects at San Diego State University.

Weights were measured to the nearest 0.25 lb and heights to the nearest 0.25 in. Missing heights and weights were obtained from camp or school medical records. Percent OV was calculated as the percentage a child's actual BMI was above the median BMI for the child's age and sex provided in the Centers for Disease Control and Prevention National Center for Health Statistics 2000 growth curves (25). BMI z-scores were also determined using these growth curves and the related procedures accompanying the growth curves.

Both samples completed pencil-and-paper questionnaires. Assessments were administered in a group format. In all cases, staff was present to help children understand directions and answer questions. For the OV sample, one measure was given one-on-one, in interview format. Because of logistic challenges of varied camp arrival schedules and durations of stay, some children either only completed a questionnaire ( $n = 11$ ) or only completed an interview ( $n = 18$ ). Furthermore, 7 OV and 15 non-OV children were unable to complete all questionnaires in the time allotted.

### Measures

*Eating Disorder Psychopathology and Body Image Disturbance.* The OV sample completed the body dissatisfaction and bulimia subscales of the Eating Disorder Inventory Children's Version (EDI-C) (27), a version of the Eating Disorder Inventory, revised version (EDI-2) (28), adapted for use with children. This measure was not administered to the non-OV sample, because school administrators were unwilling to allow the eating disorder measures to be administered to their students. Extensive data on the psychometric properties of the EDI and EDI-2 indicate good construct validity, discriminative validity, test-retest reliability, and internal consistency (28,29). The EDI-C has good psychometrics (e.g., Cronbach's  $\alpha$  for internal consistency among an eating disordered group ranged from 0.70 to 0.91 in a recent study) (30); limited psychometric data on the EDI-C have been published because it is currently being normed. In the present sample, Cronbach's  $\alpha$  for the bulimia and body dissatisfaction subscales was 0.65 and 0.91, respectively.

*Teasing.* The Perception of Teasing Scale (POTS) (11) is a revision and extension of the Physical Appearance-Related Teasing Scale (12). The POTS consists of 11 items answered on a five-point scale ranging from 1 = never to 5 = frequently and assesses one's history of being teased about weight and abilities/competencies. The POTS yields a six-item weight-related teasing subscale and a five-item

competency-related teasing subscale, both formed by summing the applicable items. It has shown high convergence with other measures of teasing and exhibits acceptable internal consistency and reliability (11). In this sample, Cronbach's  $\alpha$  for the weight-related teasing and competency-related teasing subscales was 0.95 and 0.85, respectively.

The Appearance Teasing Inventory (ATI) is a nine-item, retrospective adult inventory (10,31) eliciting both narrative and quantitative information on teasing history and its reported effects. The ATI was modified for use with children to assess a current state of teasing experiences while still using the adult ATI-derived systematic questions. Respondents identified any physical attributes about which they were teased or criticized and disparaging nicknames they were called, and detailed the frequency, duration, perpetrators, and emotional impact of the teasing. Frequency ratings were made on a five-point scale (from rarely to very often). Emotional impact of teasing was also made on a five-point scale (from not at all upset to extremely upset). For the camp participants, the ATI was administered in interview form. The school-based participants filled out the ATI as a pencil-and-paper questionnaire. The ATI has exhibited good convergent validity (31).

*Loneliness.* The three-item loneliness subscale (S. Asher, personal communication, September 22, 1998) of the Loneliness and Social Dissatisfaction Scale (LSDS; 32) assesses feeling alone and left out on a three-point scale (yes, sometimes, no). The LSDS has shown good internal consistency (32).

*Self-esteem.* Three subscales of the Self-perception Profile for Children (SPPC) (33), a 36-item self-report questionnaire with good internal consistency (33), were used to measure domain-specific self-evaluation of competence in social abilities, athletic competence, and physical appearance. Children are asked first to determine which of two descriptions of a child is most like them (e.g., "some kids are *happy* with the way they look; other kids are *not* happy with the way they look; which is most like you?"). They are asked to determine whether the description they chose is "really true for me" or "sort of true for me."

*Weight Concerns.* The five-item Killen Weight Concerns Scale measures risk factors predictive of future eating disorder psychopathology and has shown good stability (34).

*Preference for Active vs. Sedentary and Social vs. Isolated Activities.* Children also indicated their preference for 19 activities. The list of activities in the Minnesota Leisure Time Activity Questionnaire (MLTA) (35) was adapted to include physical activities and sedentary behaviors relevant for children (36) and with added specification of whether the activity was done alone or with friends. Items were presented in a paired-choice format identical to the SPPC as described above (33). Children indicated preference for one of two activities, and the pairs were randomly ordered to include, on either side, activities that were active or seden-

tary and done alone or with friends. Responses were coded as to the number of times a child chose "really true for me" to describe their preference for 1) 10 possible physical activities done with friends, 2) 9 possible sedentary activities done alone, 3) 6 possible physical activities done alone, and 4) 7 possible sedentary activities done with friends.

### Data Analysis

$\chi^2$  tests and Student's *t* tests compared level and nature of teasing between the OV and non-OV samples. In addition, descriptive analyses were conducted regarding percentage having experienced teasing, the nature of teasing experiences, and other features such as how upsetting the teasing was, perpetrators and duration of teasing, and being called derogatory nicknames.  $\chi^2$  tests and Student's *t* tests were conducted to examine sex and body weight differences between those children who had been teased and those who had not.

Next, correlations were conducted to examine the relation between level of teasing (both weight-related and competency-related teasing) and other psychosocial outcomes. Only children who completed all examined measures were included in the correlational analyses, and correlations for eating disorder psychopathology outcomes were conducted just within the OV sample because the EDI-C was not completed by the non-OV sample. For other psychosocial outcomes, these correlations were conducted within the full sample and then conducted separately within the OV sample and the non-OV sample to examine how robust the associations were across weight status. Within the full sample, correlations were also conducted (excluding those who, because of camp logistics, did not complete interview data) to examine the relation of the same psychosocial variables with total years of teasing and how upsetting teasing was, both assessed with the ATI.

Hierarchical regression analyses were conducted within the combined OV and non-OV sample (or among the OV sample for EDI-C variables) for all psychosocial outcomes that had a significant zero-order correlation with weight-related and/or competency-related teasing in the full sample. For these analyses, predictors were entered in three blocks. In the first block, two demographic variables were entered: BMI z-score and sex. (Age was tried as a predictor, but was not a significant predictor in any of the models, so it was eliminated from final analyses.) In the second block, two teasing variables were entered: level of weight-related teasing and level of competency-related teasing. In the third block, the interaction between weight status and level of competency-related teasing was entered. The interaction between weight status and level of weight-related teasing was significantly collinear with other predictors in the model, so it was not able to be included in final models.

**Table 2.** Comparison of teasing experiences between OV vs. non-OV children teased about appearance

Teasing experience	OV sample	Non-OV sample	Measure range	Statistical comparison
ATI response (full ATI sample; $N = 145$ ). Appearance-related teasing (%)	78.0	37.2		$\chi^2 (1, N = 145) = 24.42^*$
ATI responses (among those teased about their appearance; $N = 78$ ) Teasing was weight-related (%)	89.1	31.3†		$\chi^2 (1, N = 78) = 29.25^*$
How upsetting was teasing (mean $\pm$ SD)	1.9 $\pm$ 1.3	1.1 $\pm$ 1.2	0 to 4	$t(76) = 2.81\ddagger$
Found teasing moderately to extremely upsetting (%)	56.6	22.0		
Frequency of teasing (mean $\pm$ SD)	1.9 $\pm$ 1.4	1.3 $\pm$ 1.1	0 to 4	$t(76) = 2.29\§$
Teasing occurred moderately to very often (%)	50.0	30.0		
Age teasing began (mean $\pm$ SD)	8.4 $\pm$ 2.9	9.0 $\pm$ 2.8		$t(76) = 0.34$
Duration of teasing, in years (mean $\pm$ SD)	4.0 $\pm$ 3.0	2.8 $\pm$ 2.2		$t(76) = 2.04\§$
POTS responses (full POTS sample; $N = 134$ ) Weight-related teasing (mean $\pm$ SD)	13.9 $\pm$ 6.7	6.3 $\pm$ 1.2	6 to 30	$t(132) = 8.34^*$
Competency-related teasing (mean $\pm$ SD)	9.8 $\pm$ 4.9	6.7 $\pm$ 2.1	5 to 25	$t(132) = 5.08^*$

† Included teasing about both underweight and OV status; \*  $p < 0.001$ ; ‡  $p < 0.01$ ; §  $p < 0.05$ .

## Results

### Comparison of Teasing Experiences among OV vs. Non-OV Children

On the ATI, a significantly higher percentage of OV (78.0%) than non-OV (37.2%) children reported having been teased or criticized about some aspect of their appearance (Table 2). Of those children who were teased about their appearance, the OV sample was teased significantly more for weight-related (as opposed to non-weight-related) aspects of their appearance (89.1% vs. 31.3%; note that for the non-OV children, this included teasing about both underweight and OV status). The OV sample, compared with the non-OV sample, also reported that teasing occurred more frequently and lasted more years and that they found the teasing to be more upsetting. Within both the OV and non-OV samples, boys and girls were equally likely to have been teased/criticized ( $p > 0.34$ ). On the POTS, the OV sample reported significantly higher levels of weight-related teasing and competency-related teasing than did the non-OV sample.

### Teasing Experiences among the OV and Non-OV Samples

*OV Sample.* Among the OV sample, those who had vs. had not been teased did not differ in standardized BMI [ $t(57) = -0.72$ , not significant]. The teasing began anywhere from as long as the child could remember to age 13, most commonly (37.0%) beginning at age 8 or 9, and it had

lasted from 1 year to as long as the child could remember (Table 2).

*Non-OV Sample.* In the non-OV sample, those who had vs. had not been teased did not differ in standardized BMI [ $t(84) = 0.17$ , not significant]. The teasing began anywhere from as long as the child could remember to age 13, most commonly (46.7%) beginning at age 9 or 10, and had lasted from <1 year to 11 years (Table 2).

*Sources.* Information about sources of teasing for OV and non-OV children is summarized in Table 3. First, children were asked whether they were ever teased by various sources (i.e., for each potential source, children were asked whether that source had ever teased or criticized them), including family, peers, and other adults. Significantly more OV than non-OV children had experienced teasing by relatives other than immediate family ( $p = 0.008$ ), a specific peer ( $p = 0.014$ ), peers in general ( $p = 0.001$ ), and adults other than teacher and relatives ( $p = 0.028$ ). Children who had experienced any teasing were also asked which source teased or criticized them the most (i.e., of each source they said had ever teased them, which one had done so the most). Peers in general was the most common answer for the OV sample, followed by a specific peer, brother(s) or other relative, and friend(s). This response significantly differed from that of the non-OV group [ $\chi^2 (6, N = 71) = 17.62$ ,  $p = 0.007$ ], whose most common answer was a specific peer, followed by peers in general, friend(s), brother(s), sister(s), and father.

**Table 3.** Sources of teasing reported by OV and non-OV samples

Teasing source	Percent of children ever teased/criticized by given source*		Percent of those teased indicating given source as having teased/criticized the most†	
	OV (n = 59)	Non-OV (n = 86)	OV (n = 43)	Non-OV (n = 28)
Family/relatives				
Mother	6.8	2.3	0.0	0.0
Father	3.4	1.2	0.0	3.6
Brother(s)	11.9	8.1	9.3	10.7
Sister(s)	5.1	10.5	0.0	7.1
Other relatives	13.6§	2.3§	9.3	0.0
Peers				
Friend(s)	23.7	16.3	2.3	21.4
Specific peer	35.6‡	19.8‡	37.2	32.1
Peers in general	46.6¶	20.9¶	41.9	25.0
Adults				
Teacher(s)	5.1	2.3	0.0	0.0
Other adults	8.5‡	1.2‡	0.0	0.0

\* Information was elicited for all 145 children receiving the ATI, using the question: "Please [indicate] any persons who, on more than one occasion, teased/criticized you about your appearance," then going through each potential source.

† For those children who had experienced teasing, information was elicited using the question "Among those persons who teased/criticized you about your appearance, [indicate] . . . the one person who did so the most." OV and non-OV children's response to this item differed [ $\chi^2(6, N = 71) = 17.61, p = 0.007$ ]. Three OV and four non-OV children were unable to identify a particular most-frequent source and were excluded from this analysis.

‡ Percents differ across OV and non-OV children,  $p < 0.05$ .

§ Percents differ across OV and non-OV children,  $p < 0.01$ .

¶ Percents differ across OV and non-OV children,  $p = 0.001$ .

**Nicknames.** The OV sample had been called many different disparaging nicknames related to body fat (e.g., fatso, chubbs), body parts (e.g., lard legs, blubber-butt, fat-ass), OV characters (e.g., Santa Claus, Porky), and large animals or objects (e.g., whale, Titanic) compared with the non-OV sample, for whom only one participant reported disparaging nicknames related to OV. Instead, most nicknames among non-OV children were related to underweight status (e.g., stickman) or non-weight-related aspects of appearance (e.g., tomato head, shorty). All OV children who identified nicknames had experienced ones related to being OV.

#### **Relation between Teasing and Weight Concerns, Loneliness, Self-Perception, and Activity Preference**

Correlations (Table 4) within the combined OV and non-OV samples indicated significant positive correlations of degree of weight-related teasing with weight concerns, loneliness, and liking of sedentary/isolative activities, and a

significant negative correlation of teasing with self-perception (only in the physical appearance domain) and liking of active/social activities. Most of these correlations remained significant or at a trend level when testing within just the OV sample; the only exception was the correlation between teasing and liking of active/social activities, although it was in the expected direction. In addition, while not significant in the combined sample, the negative correlation between teasing and self-perceived competence in social abilities was significant in the OV sample. Fewer of the significant correlations within the combined sample remained so in the non-OV sample; specifically, the correlations of teasing with confidence in physical appearance, liking of social/physical activities, and liking of isolative/sedentary activities were non-significant. Finally, among the OV sample, correlations with eating disorder psychopathology (EDI-C subscales) revealed significant positive correlations between degree of teasing and bulimic behaviors but not body dissatisfaction.

In the combined sample, competency-related teasing was significantly correlated with the same variables, in the same direction, as was weight-related teasing. In addition, level of competency-related teasing was significantly negatively correlated with confidence in social abilities. Within the OV sample, competency-related teasing was associated with most of the same variables, in the same direction, as was weight-related teasing; however, competency-related teasing was not significantly correlated with weight concerns or preference for isolative/sedentary behaviors and was significant only at a trend level for bulimic behaviors, but was significantly negatively correlated with preference for social/active activities. Within the non-OV sample, competency-related teasing was significantly positively correlated only with loneliness.

As seen in Table 4, duration of teasing was not significantly correlated with any of the variables we examined. Perception of how upsetting the teasing was did show significant positive correlations with loneliness, weight concerns, and preference for sedentary/isolative behaviors and a significant negative correlation with confidence in physical appearance.

Regression results are summarized in Table 5. For four psychosocial outcomes (weight concerns, confidence in physical appearance, loneliness, and preference for social/physical activities), the demographic variables contributed significantly to the model, and for one (preference for isolative, sedentary activities), they contributed to the model at a trend level ( $p = 0.075$ ). Higher weight status significantly predicted higher weight concerns, greater loneliness, lower preference for social/physical activities, and higher preference for isolative, sedentary activities. Sex was a significant predictor for four variables: girls had higher weight concerns and lower confidence in their physical appearance, reported greater loneliness, and had a higher preference for social/active activities. The block of teasing variables added significantly to the model for all psychosocial outcomes except preference for social/active activities. Weight-related teasing predicted higher weight concerns, lower confidence in physical appearance, and higher preference for isolative, sedentary activities, above and beyond child sex and weight status. In addition, weight-related teasing showed a non-significant trend ( $p = 0.064$ ) for predicting bulimic behaviors, accounting for the significant block of the teasing variables. Competency-related teasing predicted lower confidence in social abilities and greater loneliness, above and beyond the demographic variables. Finally, the interaction between weight status and competency-related teasing contributed significantly only to the model predicting preference for social/active activities. Post hoc analyses indicated that, at low levels of teasing, weight status had little impact on this preference, but as teasing increased, so did the influence of weight status, such that

preference for social/active activities was lowest for those with a high degree of teasing and at high weight status.

## Discussion

In this study, appearance-related teasing was found to be pervasive and frequent among the OV sample. Almost three times more OV than non-OV children were teased for weight-related aspects of their appearance, and OV children also reported a higher level of competency-related teasing. Among children who were teased, the teasing was more frequent and lasted more years for OV than non-OV children. Increased frequency in chronic teasing among OV children makes theoretical sense, because one of the main reinforcers for peer teasing is getting a visible reaction from the victim (37), and teasing about a sensitive area such as weight status is likely to get an especially strong reaction, consistent with our finding that teasing was more upsetting for OV than non-OV children.

All but one of the nicknames reported by the OV children had to do with their OV status. In contrast, the non-OV sample reported various appearance-related nicknames, most commonly regarding hair, height, and sometimes underweight. The OV sample reported that the most common source of teasing was peers in general, but these youth had been teased by a variety of sources, including teachers, friends, parents, and other family members. In comparison, the non-OV sample reported that a specific peer was the most common source of teasing. The difference of "peers in general" vs. "a specific peer" as the primary source of teasing is noteworthy, because it indicates that teasing OV peers may be an endemic and socially sanctioned part of youth culture. That is, it may be acceptable and normative for the entire peer group to tease about overweight, whereas this would not be the case for teasing about other issues. Teasing by peers in general may lead to more social withdrawal, because rather than avoiding one bully, OV children may avoid the entire peer group who teases them. When examining frequency, intensity, source, and content of teasing, it is clear that the teasing experience is more intense for OV vs. non-OV children.

Teasing experiences were associated with various negative psychosocial factors. Within the full sample, teasing was found to be positively correlated with loneliness and preference for sedentary, isolative activities. Therefore, chronic peer victimization may partly account for negative psychosocial outcomes that investigators have found to be elevated in OV children, such as depression, behavioral problems (e.g., 38), and impaired quality of life. A recent study found significantly lower health-related quality of life among OV children in various domains, including physical, psychosocial, emotional, social, and school functioning, with scores comparable to those of pediatric cancer patients receiving chemotherapy (39). However, unlike cancer pa-

**Table 4.** Correlations of degree of weight-related and competency-related teasing, teasing duration, and “upsettingness” with other psychosocial variables

Type of teasing	Weight concerns	Confidence in physical appearance	Confidence in social abilities	Confidence in athletic abilities	Loneliness
POTS variables (combined sample; $n = 116$ )					
Weight-related	0.59‡	-0.31‡	-0.13	-0.03	0.48†
Competency-related	0.37‡	-0.26†	-0.26‡	-0.07	0.54‡
POTS variables (non-OV sample; $n = 71$ )					
Weight-related	0.36‡	0.02	-0.07	0.17	0.13
Competency-related	0.14	-0.21	-0.02	-0.14	0.45‡
POTS variables (OV sample; $n = 45$ )					
Weight-related	0.33*	-0.27§	-0.38‡	-0.08	0.44†
Competency-related	0.14	-0.17	-0.48‡	-0.05	0.48‡
ATI variables (combined sample; $n = 53$ )					
How long teasing lasted	0.02	-0.11	-0.15	0.01	0.11
Degree of “upsettingness”	0.53‡	-0.43‡	-0.12	-0.13	0.49‡

\*  $p < 0.05$ .†  $p < 0.01$ .‡  $p < 0.001$ .§  $p = 0.075$ .¶  $p = 0.056$ .

N/A, not available.

tients, obese children may be subject to bias even from the medical professionals who work with them (40).

Findings also suggest that the type of teasing may affect specific aspects of functioning. It is informative that, in regression analyses, OV teasing was associated with problems that seem specific to weight (e.g., weight concerns) but was not independently related to more general social functioning (e.g., loneliness, confidence in social abilities). In contrast, competency-related teasing was related only to indices of general social functioning. Our data suggest that weight-related teasing may be qualitatively different in OV than non-OV children, likely because weight and shape are highly stigmatized traits. An extremely low correlation was found between weight-related teasing and confidence in social abilities among the non-OV sample. This suggests that non-OV children may be less impacted by weight-related teasing, perhaps because they have lower body image concerns. When they are teased about their appearance, they are teased about traits that are less important for overall social standing among their peers. Relatedly, correlation analyses indicated that the emotional impact, or “upsettingness,” of the teasing experience was significantly related to lower confidence in physical appearance and greater loneliness. Indeed, chronic teasing about OV may lead to social

isolation; for example, a classic study found that photos of OV children were perceived by peers as the least desirable hypothetical choice of friend (e.g., compared with peers with or without disabilities) (41), and a recent replication found even more extreme results (42). Such social problems ultimately can be associated with devastating consequences. For example, in the study of school shootings, the male perpetrators had mostly been teased about a stigmatized topic (i.e., lack of masculinity) (8).

The present study suggests that weight-related teasing and criticism from peers and family may be a risk factor for the later development of eating disorder psychopathology, given that degree of such teasing was positively correlated with weight concerns and poorer self-perception of physical appearance. This relation and the association between teasing and higher bulimic behaviors were significant (or, for confidence in physical appearance, at a trend level) even when examining the OV sample alone, despite the high levels (and limited variability) of appearance- and weight-related teasing reported. These findings are consistent with retrospective (43), concurrent (16,19), and longitudinal (19,20,44) studies with various age groups and diverse cultures from countries including Australia, India, and across Europe (e.g., 45–47). The findings indicate that



Liking for social physical activities	Liking for isolative sedentary activities	Liking for social sedentary activities	Liking for isolative physical activities	Bulimic behaviors	Body dissatisfaction
-0.25‡	0.45‡	0.05	0.04	N/A	N/A
-0.26‡	0.30‡	0.03	0.06	N/A	N/A
0.14	-0.08	0.17	0.25*	N/A	N/A
0.06	0.01	0.17	0.14	N/A	N/A
-0.15	0.37*	-0.02	-0.02	0.40†	0.15
-0.34*	0.23	-0.11	-0.02	0.29¶	0.07
-0.25	0.12	0.02	-0.04	N/A	N/A
-0.11	0.36†	0.08	0.08	N/A	N/A

teasing and parental weight criticism are associated with dieting onset, poor body image, restrictive eating, binge eating, and bulimic behaviors. In addition, this study found that weight-related teasing was associated with preference for isolative, sedentary activities, which points to a potential vicious cycle of inactivity, further weight gain, increased aversion toward social physical activity, and even further isolative inactivity.

These data point to the need for effective prevention and intervention of weight-related teasing, which may simultaneously improve overall peer functioning, enhance weight control efforts by promoting enjoyment of physical activity, and reduce the risk of a future eating disorder. Books (48,49) and interventions (50) have been developed to promote children's acceptance of differences in body size and to teach healthy coping strategies for managing and preventing peer teasing (37). School-wide interventions have been found to be successful (51) and may well be warranted to decrease bullying and impact the overall peer dynamics that support it. Indeed, our finding that peers in general were the most prevalent and persistent source of OV children's teasing may indicate that it would be difficult to target specific teasers, and, thus, school-wide programs targeting

peer acceptance, plus targeted interventions to provide victims of teasing with better coping skills, may be more productive.

Although weight concerns, self-perception of physical appearance, and body dissatisfaction are related constructs, we found a difference in the significant relation of teasing with weight concerns (Killen) and self-perception of physical appearance (SPPC) vs. a non-significant relation between teasing and body dissatisfaction (EDI-C). This may be partly because the Killen and SPPC assess more global weight or appearance concerns, which children may have been experiencing without being dissatisfied with specific body parts, the focus of the EDI-C. Also, the scoring of the EDI-C emphasizes clinical levels of body image disturbance that the majority of our participants were not experiencing. Indeed, given the level of pathology represented in this measure, it is impressive that teasing was still found to be significantly correlated with bulimic behaviors among the OV sample.

A limitation of this study is that the ATI was administered as an interview with the OV sample and questionnaire with the school sample. Such variance in administration may lead to assessment bias in two directions: a child may divulge more in an interview, given the opportunity for the

**Table 5.** Regressions of demographics and degree of teasing to predict other psychosocial variables

DV	Block 1: demographics		Block 2: POTS teasing		Block 3: interaction between z-score BMI and competency- related teasing		Final model adjusted $R^2$ and significance	
	BMI z-score	Sex	Weight- related	Competency- related	$R^2 \Delta$ and significance	$R^2 \Delta$ and significance		
Weight concerns	0.56‡	0.32‡	0.470‡	-0.05	0.084‡	-0.24	0.004	0.538‡
Confidence in physical appearance	-0.16	-0.18*	0.066*	-0.003	0.075*	0.50	0.017	0.119*
Confidence in social abilities	0.12	0.05	0.019	-0.30*	0.098†	-0.54	0.020	0.098†
Loneliness	0.21*	0.26†	0.128‡	0.45‡	0.246‡	-0.16	0.002	0.348‡
Liking for social/physical activities	-0.30‡	0.22*	0.119‡	-0.20	0.031	0.74*	0.037*	0.150‡
Liking for isolative/ sedentary activities	0.20*	-0.10	0.046§	-0.04	0.102†	0.09	0.001	0.109†
Bulimic behaviors	0.09	0.09	0.015	0.46¶	0.176*			0.110**

For all variables except bulimic behaviors, the regressions are with the combined OV and non-OV samples. The regression with bulimic behaviors was conducted within the OV sample only.

\*  $p < 0.05$ .

†  $p < 0.01$ .

‡  $p < 0.001$ .

§  $p = 0.075$ .

¶  $p = 0.064$ .

\*\*  $p = 0.069$ .

administrator to probe, or may divulge less if such face-to-face contact is more intimidating than a questionnaire format. Similarly, in the questionnaire version, the child may divulge more when s/he is not face-to-face with an interviewer, or s/he may be less forthcoming with honest answers given the uncertainty of who may view his/her responses. Future studies could document how teasing impacts later psychological outcomes and might also examine a comprehensive model that includes parent factors (e.g., parent OV status and psychopathology). Additional future directions might include further exploration of peer teasing prevention and treatment efforts, as well as the impact of such interventions on related outcomes (e.g., reduction of teasing, improved psychological outcomes, more effective weight control).

Despite the above limitations, this study is one of the first to show that OV children report more teasing experiences in general, more teasing specifically regarding weight, higher levels of competency-related teasing, and being more upset by the teasing compared with their non-OV peers. Furthermore, we provide detailed documentation of the teasing experience these children face, including its duration, varied perpetrators, and devastating nicknames. Teasing experiences were found to be related to self-perception of physical appearance, weight concerns, loneliness, and eating disordered behaviors, as well as higher preference for sedentary/isolative and lower preference for physical/social activities. Overall, these findings suggest that intervening with the teasing that was present in nearly 80% of the present pediatric obesity sample may not only increase physical activity for better weight control and physical health but also may promote improved overall social and psychological adjustment.

### Acknowledgments

This study was supported by funding from National Institute of Child Health and Human Development Grant HD 36904 and the Swedish Foundation for International Cooperation in Research and Higher Education, who supported A.G.'s research fellowship in San Diego. Dr. Wilfley is supported by grant 1K24MH070446-01 from the National Institute of Mental Health, National Institutes of Health, and grant 5R01HD036904-05 from the National Institute of Child Health and Human Development, National Institutes of Health. We thank Nancy Lenhart, Executive Director of Camp La Jolla, the camp at which part of the study was performed; all of the campers and students who participated in the study; Amy Kusel Epner for assistance in gathering data; and Angela Celio and Andrea Schnur for comments on an earlier version of the manuscript.

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