

Weight-Based Victimization: Bullying Experiences of Weight Loss Treatment–Seeking Youth

AUTHORS: Rebecca M. Puhl, PhD, Jamie Lee Peterson, MA, and Joerg Luedicke, MS

Rudd Center for Food Policy and Obesity, Yale University, New Haven, Connecticut

KEY WORDS

adolescents, obesity, teasing, weight bias, weight stigma

ABBREVIATIONS

PE—physical education

WBV—weight-based victimization

Dr Puhl conceptualized the project and design, interpreted findings, led the writing, and approved the final manuscript as submitted; Ms Peterson reviewed relevant literature, contributed to study measures, managed data collection, contributed to paper drafts and revisions, and approved the final manuscript as submitted; and Mr Luedicke analyzed the data, interpreted results, created tables, contributed to writing, and approved the final manuscript as submitted.

www.pediatrics.org/cgi/doi/10.1542/peds.2012-1106

doi:10.1542/peds.2012-1106

Accepted for publication Jul 24, 2012

Address correspondence to Rebecca M. Puhl, PhD, Rudd Center for Food Policy and Obesity, Yale University, 309 Edwards St, New Haven, CT 06511. E-mail: rebecca.puhl@yale.edu

PEDIATRICS (ISSN Numbers: Print, 0031-4005; Online, 1098-4275).

Copyright © 2013 by the American Academy of Pediatrics

FINANCIAL DISCLOSURE: *The authors have indicated they have no financial relationships relevant to this article to disclose.*

FUNDING: Research and project support were provided by the Rudd Center for Food Policy and Obesity.

COMPANION PAPERS: Companions to this article can be found on pages e10 and e288, online at www.pediatrics.org/cgi/doi/10.1542/peds.2012-1180 and www.pediatrics.org/cgi/doi/10.1542/peds.2012-3253.



WHAT'S KNOWN ON THIS SUBJECT: Studies have linked bullying with BMI, with overweight and obese youth vulnerable to bullying and its negative psychological and health consequences. However, there has been little comprehensive assessment of weight-based victimization, especially in weight loss treatment–seeking samples of youth.



WHAT THIS STUDY ADDS: WBV is prevalent in treatment-seeking youth, who report victimization from peers (92%), friends (70%), parents (37%), and teachers (27%). Providers should discuss WBV in their assessment and treatment of pediatric patients who are overweight or obese.

abstract

FREE

OBJECTIVE: Few studies have comprehensively examined weight-based victimization (WBV) in youth, despite its serious consequences for their psychosocial and physical health. Given that obese and treatment-seeking youth may be highly vulnerable to WBV and its negative consequences, the current study provides a comprehensive assessment of WBV in a weight loss treatment–seeking sample.

METHODS: Adolescents (aged 14–18 years; $N = 361$) enrolled in 2 national weight loss camps were surveyed. An in-depth assessment of WBV was conducted by using an online survey, in which participants indicated the duration, typical locations, frequent perpetrators, and forms of WBV they had experienced.

RESULTS: Findings indicate that 64% of the study participants reported WBV at school, and the risk of WBV increased with body weight. Most participants reported WBV enduring for 1 year (78%), and 36% were teased/bullied for 5 years. Peers (92%) and friends (70%) were the most commonly reported perpetrators, followed by adult perpetrators, including physical education teachers/sport coaches (42%), parents (37%), and teachers (27%). WBV was most frequently reported in the form of verbal teasing (75%–88%), relational victimization (74%–82%), cyberbullying (59%–61%), and physical aggression (33%–61%). WBV was commonly experienced in multiple locations at school.

CONCLUSIONS: WBV is a prevalent experience for weight loss treatment–seeking youth, even when they are no longer overweight. Given the frequent reports of WBV from adult perpetrators in addition to peers, treatment providers and school personnel can play an important role in identifying and supporting youth who may be at risk for pervasive teasing and bullying. *Pediatrics* 2013;131:e1–e9

According to recent research, body weight is one of the most common reasons that adolescents are bullied at school, with rates higher than bullying due to race, religion, or disability, and comparable to youth who are bullied because of their sexual orientation.¹ Alarming, 84% of adolescents in this study observed overweight students being teased at school.¹ This finding is especially concerning given that the number of overweight and obese youth has increased substantially over recent decades,² and in 2010, 32% of US 2- to 19-year-olds were classified as clinically overweight or obese.³ Although previous research^{4–13} and recent reviews^{14,15} have linked child BMI with involvement in victimization, there has been limited comprehensive assessment of teasing/bullying specifically about weight (ie, weight-based victimization [WBV]), especially in weight loss treatment-seeking samples of overweight youth.

WBV poses a range of negative health consequences for youth who are targeted. Specifically, WBV can increase the risk for behaviors that may contribute to weight gain (eg, increased caloric consumption, binge eating, unhealthy weight control behaviors, increased preference for sedentary activities, skipping physical education [PE] class).^{16–18} WBV can also have negative psychological outcomes (eg, low self-esteem, depressive symptoms, suicidal thoughts and behaviors)¹⁹ and academic consequences (eg, skipping school, poorer academic performance).^{18,20} Weight-based teasing/bullying may also contribute to social isolation or low peer acceptance of overweight youth.^{21–23} Thus, WBV can hinder social, emotional, and academic development of youth, as well as exacerbate adverse health behaviors already associated with obesity.

According to an American Academy of Pediatrics policy statement, health providers should advocate for “bullying awareness by teachers, educational

administrators, parents, and children.”²⁴ In light of the pervasiveness and consequences of victimization toward overweight youth, health care providers have an important role to play in identifying youth who are at risk and offering support and resources to help these youth effectively cope with WBV and its consequences. It is also important to protect children and adolescents from victimization as part of efforts to address obesity in youth, which can otherwise erode intervention and treatment intended to improve their healthy lifestyle behaviors.

However, the ability of providers to effectively help youth who are most vulnerable can be hindered in the absence of an accurate knowledge of the specific challenges these youth face, such as the frequency, types, and perpetrators of WBV they experience and other patient characteristics that may increase the risk of WBV. This knowledge is particularly important to obtain in treatment-seeking youth, given that obese youth may be more likely to be teased or bullied,²⁵ and heavier youth report that teasing is more harmful, upsetting, and frequent than their nonoverweight peers.¹⁷ In addition, the relation between teasing and psychological maladjustment is higher for obese youth,²⁶ and negative consequences resulting from victimization may be more pronounced in treatment-seeking youth.^{27,28}

Previous studies examining treatment-seeking samples of overweight youth (ie, those participating in weight loss programs) have used only a few survey items to assess the presence/history of weight-related teasing²⁹ or relied on brief scales such as the Perception of Teasing Scale³⁰ as well as other scales.^{31–35} The Perception of Teasing Scale includes 6 items to assess general experiences of weight-based teasing but provides no examination of the frequency or different forms of WBV experienced (verbal, relational, cyberbullying, or physical

aggression) or perpetrators (friends or family members). A more comprehensive assessment of weight-specific victimization is necessary to obtain an accurate knowledge of the specific challenges facing these youth and has important practical implications for identifying factors that can be addressed in interventions to reduce WBV and to increase awareness of this form of bullying among treatment providers, school personnel, and program staff.

To address this research gap, an in-depth self-report measure was developed to assess WBV in youth, including its multiple forms, common settings where WBV occurs, frequent perpetrators of WBV, and the frequency of these experiences. Originally surveyed in a large community sample of high school students,^{1,18} this measure has not yet been tested in a weight loss treatment-seeking sample. Given the increased risk of victimization of these individuals and the resulting negative consequences, the current study aimed to assess WBV in a treatment-seeking sample. To our knowledge, this study provides the first comprehensive examination of WBV in a treatment-seeking sample of adolescents.

METHODS

Participants

The target sample was adolescents (aged 14–18 years) enrolled in 1 of 2 youth weight loss programs: Wellspring Camps³⁶ or Camp Shane.³⁷ Programs were selected for their large enrollment, numerous program facilities, and participation across the United States. Each program e-mailed a recruitment flyer to parents of enrolled youth during the spring of 2011. Participants provided written informed consent, and if aged <18 years, passive parental consent was also required. Gift cards were offered as incentives. The study was approved by the directors of each

program and by the authors' university institutional review board.

Data were collected online via self-report surveys advertised to currently enrolled campers. For Camp Shane, 1025 e-mails were received and viewed by potential participants, and 400 campers from Wellspring Academies received e-mails about the survey. Of participants who began the survey ($N = 550$), a portion of participants did not provide consent ($n = 38$) or did not finish ($n = 123$), resulting in a 70.7% completion rate and an effective response rate of 27.3%. This response rate approximates previous Web-based assessments of youth bullying³⁸ and is within the expected range for well-conducted online surveys without follow-up contact.³⁹ Exclusions were made for participants who were aged <14 years or >18 years ($n = 7$), underweight ($n = 15$), or non-native English speakers ($n = 6$). Participants from Camp Shane (76%) and Wellspring Academies (23%) were represented in the final sample ($N = 361$). Reported experiences of WBV were not significantly different according to program, and samples were thus pooled. Several participant demographic characteristics differed across programs. Therefore, BMI, gender, age, race, and a binary variable specifying camp program were included as predictor variables in regression analyses.

Measures

Demographic Information

Participants reported their age, gender, race/ethnicity, and academic performance. Self-reported height and weight were collected to calculate BMI. BMI percentiles were calculated with respect to age and gender based on the Centers for Disease Control and Prevention growth curves,⁴⁰ then classified according to weight categories (eg, healthy weight, overweight, obese).⁴¹

Given that BMI may differ for youth by gender but several participants did not report gender ($n = 57$), BMI was calculated for participants with missing gender information as both a male and a female. If participant weight category changed based on participant gender classification, BMI category was not recorded ($n = 8$).

Experiences of WBV

The nature and extent of WBV were assessed with a questionnaire adapted from Puhl et al.^{1,18} Participants were provided with a detailed definition of bullying, followed by the questions: "Have you ever been teased or bullied because of your weight at school?" (1 = yes, 2 = no), "How often have you been teased or bullied because of your weight at school during the last year?" (1 = never to 5 = very often), and "How long have you been teased or bullied because of your weight at school?" (1 = <1 month to 6 = ≥ 5 years).

Survey questions then assessed teasing due to other factors (eg, race, religion, sexuality) and frequent perpetrators of WBV ("peer," "friend," "teacher," "Physical Education [PE] teacher/sport coach," "parent," or "I do not know who the person is"). To assess specific forms of WBV experienced by adolescents, participants were asked how often during the past year ("never" to "very often") they had experienced different types of victimization at school, specifically attributable to their body weight. Items assessed types of verbal teasing, physical aggression, relational victimization, and cyberbullying. This measure showed very good reliability ($\alpha = .94$). Participants were also asked to report how often ("never" to "very often") they had experienced WBV in specific locations and via technology (ie, on the computer or cell phone) at school.

Finally, preliminary evidence from research with weight loss treatment-seeking youth documented a negative

relation between maternal BMI and child self-esteem and adaptive skills.⁴² Thus, perceived parental weight status was also assessed: "Which of the following best describes your biological mother's/father's weight?" ("very underweight," "underweight," "just about right," "overweight," "very overweight," and "I don't know").⁴³ Due to sparse cell coverage, "overweight"/"very overweight" and "very underweight"/"underweight"/"just about right" were collapsed, resulting in binary variables for the mother and the father. These 2 binary variables were then combined into 1 variable with 3 categories: 0, 1, or both parents overweight/very overweight.

Statistical Analysis

The data were analyzed by using descriptive techniques to document experiences of WBV. In addition, regression models were used to estimate effects of individual characteristics on 2 of the study's main outcome measures (ie, risk and frequency of WBV). Linear regression models (ordinary least squares) were used to predict frequency of WBV, both for overall and type-specific frequency, and a logistic regression model was used to predict the probability of ever experiencing WBV. Predictors were the same in all models and included adolescent and parent weight status, as well as sociodemographic characteristics such as age, gender, race/ethnicity, and grades. A binary variable indicating camp membership was included as a control variable. In a separate analysis, a cubic spline logistic regression model (without additional covariates) was used to explore the nonlinear effect of BMI on WBV risk. To avoid selection bias in models in which gender was included, missing gender data were imputed by using multiple imputation ($M = 20$).⁴⁴ Analyses were conducted by using Stata version 11.2 (Stata Corp, College Station, TX).

RESULTS

Participant Characteristics

Of 361 participants, 40% were female and 44% were male (16% not reported). The mean \pm SD age was 15.79 ± 1.28 years. Participants were currently in grades 7 or 8 (12%), 9 (27%), 10 (23%), 11 (17%), or 12 (21%). Most participants self-reported as white (71%), with the remaining 18% black/African American, 6% Latin/Hispanic, 2% Asian/Pacific Islander, and 3% other. Students reported receiving grades of mostly A's (38%) and mostly B's (40%), followed by mostly C's (19%), mostly D's (3%), and mostly F's (0%). Thirty-four percent of respondents were healthy weight, 24% were overweight, and 40% were obese. Compared with recent US estimates, this sample contained more overweight youth and >2 times the current rate of youth obesity.³ It was unexpected that 34% of the sample reported having a BMI within the healthy weight range. However, program administrators confirmed that a portion of enrollees had experienced significant weight loss and returned to camp for support with weight loss maintenance.

WBV

Descriptive Findings

Most participants reported experiencing WBV (64%). Results presented here pertain exclusively to participants who reported experiencing WBV, unless otherwise noted.

Frequency and Duration

Most youth (71%) reported experiencing WBV at least "sometimes" at school in the last year (Table 1). Adolescents also reported a long history of WBV; nearly 4 of 5 participants reported WBV lasting >1 year, and more than one-third had experienced WBV for ≥ 5 years. Only 10% of youth reported recent initiation of WBV within the past 6 months.

TABLE 1 Reported Reasons for Being Bullied or Teased at School

Reason for Victimization	Percentage of Participants				
	Ever Experienced	Never	Rarely	Sometimes	Often/Very Often
Weight ^a	94	7	23	50	21
Appearance	89	11	24	40	25
Someone you are friends with	74	26	33	31	10
Clothes	70	31	31	25	14
Someone you are dating	65	35	30	25	9
The way you speak	52	48	22	23	7
Intelligence	50	50	29	16	6
School performance	50	50	28	17	5
Race	41	59	28	9	5
Family members or income	32	68	16	11	5
Religion	24	76	11	7	6
Disability	17	83	7	7	3
Sexuality or being gay/lesbian	15	85	11	3	1

N = 226 < *n* < 231. Due to rounding, some rows sum to >100 .

^a Denotes teasing/bullying experiences within the last year. For other items, the time frame refers to any previous experience.

Perpetrators

More than 90% of participants reported that their peers had been perpetrators of WBV followed by 70% who reported their friends teased/bullied them (Table 2). Male (89%) and female (86%) peers were reported as perpetrators, with friends reported less often (males: 69%, females: 64%). Individuals whose identities were unknown were also commonly reported as perpetrators (55%), followed by a sizeable percentage of participants who reported WBV from adults, including PE teachers/sport coaches (42%), parents (37%), and teachers (27%).

Types of Victimization

Verbal victimization was the most commonly reported form of WBV at school (75%–88%), followed by relational victimization (74%–82%) (Table 3). More

than one-half of participants reported weight-based cyberbullying; namely, 61% had experienced mean or embarrassing posts online, and 59% were sent mean texts, e-mails, or instant messages. Physical victimization was reported least often, yet was still prevalent (33%–61%).

Locations

WBV was most commonly reported in general group settings, including the classroom (80%), the stairs/hallway (77%), and the cafeteria (70%) (Table 4). Sport-related locations such as the gym, PE class, sports practice, or athletic field (73%) and locker rooms/bathrooms (65%) were also reported by the majority of participants. More than one-half of youth reported experiencing WBV on the computer (65%) or phone (58%).

TABLE 2 Adolescents' Reports of Common Perpetrators of Weight-Based Bullying and Teasing During the Last Year

Source of Victimization	Percentage of Participants				
	Ever Experienced	Never	Rarely	Sometimes	Often/Very Often
Peer	92	8	26	37	30
Friend	70	30	34	28	8
I do not know who it was	55	46	16	23	15
PE teacher/sport coach	42	59	27	9	6
Parent	37	63	14	12	11
Teacher	27	73	18	6	3

N = 224 < *n* < 227. Due to rounding, some rows sum to >100 .

TABLE 3 Adolescents' Reports of Different Forms of Weight-Based Bullying or Teasing Experienced at School in Last Year

Form of WBV	Percentage of Participants				
	Ever Experienced	Never	Rarely	Sometimes	Often/Very Often
Verbal teasing					
Being laughed at	88	12	30	30	28
Being teased in a mean way	84	16	28	30	26
Being called mean names/made fun of	83	17	24	30	30
Others make faces or grimaces toward you	75	25	22	30	24
Being the recipient of loud insults	75	32	19	29	20
Relational victimization					
Isolated/left out/excluded from social groups or peer activities	82	18	27	26	30
Others spread negative rumors or gossip about you	79	21	30	25	24
Others try to get peers not to like you	75	25	21	30	24
Isolated/left out/excluded from sports groups or physical activities	74	26	26	24	24
Isolated/left out/excluded from school groups or extracurricular activities	74	26	26	24	24
Cyberbullying					
Someone posts something mean or embarrassing about you online	61	39	20	25	17
You are sent mean e-mails/instant messages/text or chat messages	59	41	22	24	13
Physical aggression					
Being verbally or physically threatened	61	39	24	20	17
Others taking things from you	57	43	26	21	11
Having things thrown at you by others	56	44	20	22	14
Damage to your personal belongings (others break or ruin something of yours)	53	47	21	24	9
Being intentionally followed or chased after	51	49	26	17	8
Physically assaulted/hit/knocked down	42	58	20	12	10
Being trapped somewhere (eg, in a corner or room)	33	67	15	13	5

N = 224 < *n* < 228. Due to rounding, some rows sum to >100.

Teasing Due to Other Factors

After body weight, the most commonly reported reason for being teased/bullied was appearance (89%), and 65% of participants reported this type of teasing/bullying at least sometimes (Table 1). Adolescents were also often teased for reasons not relevant to the self, including someone they were friends with (74%) or someone they were dating (65%). The least commonly reported reasons for teasing/bullying included religion (24%), disability (17%), and sexuality (15%).

Regression Analyses

Risk of WBV

With increasing body weight, participants were more likely to report WBV

(Table 5). Adolescents with worse grades (mostly C's and D's) were also more likely to experience WBV. Participants' reports indicated that 50% of their mothers were overweight and 46% of their fathers were overweight. The risk of reporting WBV was significantly higher for youth with 2 overweight parents compared with youth with no overweight parents.

Adolescents with a healthy weight according to BMI were also at risk for WBV (Fig 1). The risk of being victimized due to one's weight was lowest 1 SD below the reference population mean, and increased sharply after this point, eventually reaching a chance of almost 100% for respondents with the highest BMI.

These analyses were conducted by using the full sample of adolescents.

Types of Victimization

Reported types of WBV were further examined according to participant characteristics. Linear regression models indicated that the frequency of different types of WBV or total WBV remained similar across participant characteristics with a few exceptions (Table 5). Obese students reported more verbal teasing compared with their nonoverweight peers, and students with lower grades reported more verbal, physical, and cyberbullying compared with students with mostly A grades.

DISCUSSION

To the best of our knowledge the current study is the first to conduct an in-depth assessment of experiences of WBV in weight loss treatment-seeking youth. Results indicate that these adolescents are frequent targets of multiple forms of WBV in many settings on school campuses. It is further concerning that our findings suggest that WBV may be virtually inevitable for the heaviest youth, and that these youth have likely been targets of victimization for an extensive period of time.

Several additional findings from the current study raise cause for concern. First, peers were reported to be extremely common perpetrators of WBV in the school setting, but it is noteworthy that more than one-half of the sample also reported bullying from unknown individuals. Given that more than one-half of participants reported experiencing WBV via cell phones or computers, it is likely that unknown individuals represent cyberbullies who use technology to retain their anonymity. Youth may feel increasingly vulnerable with an unknown bully or experience increased psychological distress (ie, depressive symptoms, suicidal ideation,

TABLE 4 Common School Settings in Which WBV Was Experienced in the Last Year

School Locations Where WBV Occurs	Percentage of Participants				
	Ever Experienced	Never	Rarely	Sometimes	Often/Very Often
In the classroom	80	20	30	31	20
In the stairs or hallway	77	23	29	26	23
In the cafeteria	70	30	23	26	20
In the gym, PE class, sports practice, or athletic field	73	27	26	28	20
In the waiting areas before or after school	67	34	22	30	15
On the computer	65	35	23	28	15
In the locker room or bathroom	65	36	23	26	16
Outside or at recess	65	35	27	23	16
On the bus or on other school transportation	59	41	23	21	16
On the phone	58	42	27	18	14

N = 226 < *n* < 229. Due to rounding, some rows sum to >100.

self-injury, suicide attempts) if subject to cyberbullying in addition to other forms of bullying.⁴⁵

Second, of considerable concern is the high percentage of adolescents (37%) who reported WBV from their parents. Research indicates that weight-based teasing from multiple sources (eg, peers and parents) may be associated with increased emotional health problems for youth.¹⁹ When treating an overweight or obese child, clinical

intervention involves interactions with the child's parents to equip them with the tools to improve the health of their child, as well as that of the whole family. As part of these efforts, our findings highlight the need for providers to educate parents about WBV and to offer them appropriate strategies to address their child's weight with sensitivity and support. Even well-intentioned parents may inadvertently criticize or tease their overweight children in ways

that are extremely damaging.^{19,26,46–48} For those youth who are targets of WBV at school and at home, health care providers may be among their only remaining allies. Thus, it can be especially helpful for providers to promote adaptive coping strategies (eg, positive self-talk, social support, problem-focused coping)^{18,48,49} during patient visits with youth who are targets of WBV.

Third, youth were often teased/bullied because of people they were associated with, including friends (74%), dating partners (65%), and family members (32%). In light of our finding that having 2 overweight parents increases youth risk of WBV, it is possible that youth may be experiencing proximity bias (as discussed by Hebl and Mannix⁵⁰); namely, obesity stigma is extended to individuals closely associated with an obese person. Future research should examine whether body weight of a family member, friend, or dating partner increases an adolescents' likelihood of victimization.

TABLE 5 Logistic and Linear Regressions Predicting Risk and Frequency of WBV Experienced at School

Factor	Logistic Regression (Odds Ratio) Ever Experienced WBV	Linear Regression (B)				
		Frequency of WBV	Frequency of Verbal WBV	Frequency of Relational WBV	Frequency of Physical WBV	Frequency of Cyber WBV
No parent overweight						
One parent overweight	1.546	−0.011	0.044	−0.139	0.037	−0.006
Both parents overweight	2.806*	0.140	0.156	0.110	0.076	0.187
BMI: healthy weight						
BMI: overweight	8.693 [‡]	0.114	0.165	0.037	0.076	0.133
BMI: obese	11.661 [‡]	0.193	0.445*	0.230	−0.110	−0.117
Female						
Male	0.872	0.148	0.142	0.045	0.277	0.003
Age, mo	1.010	0.004	0.004	0.007	0.001	0.002
White						
Black	0.510	−0.171	−0.129	−0.283	0.033	−0.256
Other	0.798	−0.158	−0.059	−0.239	−0.086	−0.154
Grades: mostly A's						
Grades: mostly B's	1.360	0.258	0.129	0.082	0.428 [†]	0.357*
Grades: mostly C's/D's	3.754 [†]	0.775 [‡]	0.582 [†]	0.441*	0.935 [‡]	0.746 [‡]
Camp Shane						
Wellspring Academies	0.865	−0.219	−0.136	−0.100	−0.312	−0.274
Constant	0.038	−1.246	−1.322	−1.442	−0.693	−0.605
<i>N</i>	341	211	211	211	210	208

Dependent variables in the linear regression models are z standardized and, thus, the coefficients reflect changes in the dependent variables in units of SDs for a 1-unit change in the independent variables. Data were imputed by using multiple imputation for gender (*M* = 20).

* *P* < .05,

† *P* < .01,

‡ *P* < .001.

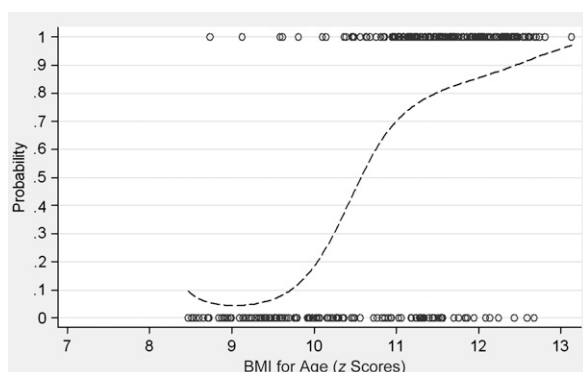


FIGURE 1

Logistic cubic spline regression model predicting risk of WBV across the observed range of participant BMI. Spline knots were created at every SD across the observed BMI range to capture the nonlinear relation between BMI and the risk of WBV. Outcome: “ever victimized at school” (0 = no, 1 = yes), predictor: BMI for age (z scores; mean: 10; SD: 1 in the reference population,⁴⁰ sample mean = 11), $N = 301$.

Finally, our findings suggest that formerly overweight youth who have lost weight and whose BMI is currently in the healthy weight range may still be vulnerable to WBV, which aligns with recent research indicating formerly obese females experience continued stigma after weight loss.⁵¹ Thus, providers should be aware that risk of WBV may be present for youth of diverse body weights and not just for those who are currently overweight or obese.

A primary limitation of this study is its self-report format. This format may

introduce bias in the reporting of perceived experiences of victimization, as well as weight and height information. However, previous research has demonstrated generally high concordance between child and maternal reports of victimization,⁵² and between self-reported weight and height data and measured values of height and weight among adolescents.⁵³ Finally, we did not assess participant socioeconomic status, and thus it is not known if this sample overly represents individuals with the financial means to attend such a program.

CONCLUSIONS

Our findings show that weight loss treatment-seeking adolescents experience pervasive weight-based torment from classmates and adults, which has important implications for clinical intervention and treatment with this population. Pediatric providers, school personnel, and program staff can help these youth by looking for signs of teasing, bullying, or associated psychological distress such as depression and anxiety, identifying whether youth have a support system in place to deal with WBV, sharing concerns about bullying with parents, and assisting in efforts to obtain mental health services or other resources for youth in need of support. With increased recognition of WBV, providers can play an important role in helping to reduce the damaging impact of victimization on the quality of life for youth struggling with their weight.

ACKNOWLEDGMENTS

The authors are grateful to Camp Shane and Wellspring Camps for their cooperation and project support, with specific thanks to Ziporah Janowski and Dan Kirschenbaum.

REFERENCES

- Puhl RM, Luedicke J, Heuer C. Weight-based victimization toward overweight adolescents: observations and reactions of peers. *J Sch Health*. 2011;81(11):696–703
- Ogden CL, Carroll M. *Prevalence of Obesity Among Children and Adolescents: United States, Trends 1963–1965 Through 2007–2008*. Atlanta, GA: Center for Disease Control and Prevention; 2010
- Ogden CL, Carroll MD, Kit BK, Flegal KM. Prevalence of obesity and trends in body mass index among US children and adolescents, 1999–2010. *JAMA*. 2012;307(5):483–490
- Adams RE, Bukowski WM. Peer victimization as a predictor of depression and body mass index in obese and non-obese adolescents. *J Child Psychol Psychiatry*. 2008; 49(8):858–866
- Farhat T, Iannotti RJ, Simons-Morton BG. Overweight, obesity, youth, and health-risk behaviors. *Am J Prev Med*. 2010;38(3):258–267
- Fox CL, Farrow CV. Global and physical self-esteem and body dissatisfaction as mediators of the relationship between weight status and being a victim of bullying. *J Adolesc*. 2009;32(5):1287–1301
- Griffiths LJ, Wolke D, Page AS, Horwood JP; ALSPAC Study Team. Obesity and bullying: different effects for boys and girls. *Arch Dis Child*. 2006;91(2):121–125
- Janssen I, Craig WM, Boyce WF, Pickett W. Associations between overweight and obesity with bullying behaviors in school-aged children. *Pediatrics*. 2004;113(5): 1187–1194
- Kukaswadia A, Craig W, Janssen I, Pickett W. Bullying as a mediator of relationships between adiposity status and weapon carrying. *Int J Public Health*. 2012;57(3):505–512
- Lumeng JC, Forrester P, Appugliese DP, Kaciroti N, Corwyn RF, Bradley RH. Weight status as a predictor of being bullied in third through sixth grades. *Pediatrics*. 2010;125(6). Available at: www.pediatrics.org/cgi/content/full/125/6/e1301
- Pearce MJ, Boergers J, Prinstein MJ. Adolescent obesity, overt and relational peer victimization, and romantic relationships. *Obes Res*. 2002;10(5):386–393
- Sweeting H, Wright C, Minnis H. Psychosocial correlates of adolescent obesity, ‘slimming down’ and ‘becoming obese’. *J Adolesc Health*. 2005;37(5):409

13. Wang J, Iannotti RJ, Luk JW. Bullying victimization among underweight and overweight U.S. youth: differential associations for boys and girls. *J Adolesc Health*. 2010;47(1):99–101
14. Midei AJ, Matthews KA. Interpersonal violence in childhood as a risk factor for obesity: a systematic review of the literature and proposed pathways. *Obes Rev*. 2011;12(5):e159–e172
15. Sentenac M, Arnaud C, Gavin A, Molcho M, Gabhainn SN, Godeau E. Peer victimization among school-aged children with chronic conditions. *Epidemiol Rev*. 2012;34(1):120–128
16. Haines J, Neumark-Sztainer D, Eisenberg ME, Hannan PJ. Weight teasing and disordered eating behaviors in adolescents: longitudinal findings from Project EAT (Eating Among Teens). *Pediatrics*. 2006;117(2). Available at: www.pediatrics.org/cgi/content/full/117/2/e209
17. Hayden-Wade HA, Stein RI, Ghaderi A, Saelens BE, Zabinski MF, Wilfley DE. Prevalence, characteristics, and correlates of teasing experiences among overweight children vs. non-overweight peers. *Obes Res*. 2005;13(8):1381–1392
18. Puhl RM, Luedicke J. Weight-based victimization among adolescents in the school setting: emotional reactions and coping behaviors. *J Youth Adolesc*. 2012;41(1):27–40
19. Eisenberg ME, Neumark-Sztainer D, Story M. Associations of weight-based teasing and emotional well-being among adolescents. *Arch Pediatr Adolesc Med*. 2003;157(8):733–738
20. Krukowski RA, West DS, Philyaw Perez A, Bursac Z, Phillips MM, Raczynski JM. Overweight children, weight-based teasing and academic performance. *Int J Pediatr Obes*. 2009;4(4):274–280
21. Strauss RS, Pollack HA. Social marginalization of overweight children. *Arch Pediatr Adolesc Med*. 2003;157(8):746–752
22. Zeller MH, Reiter-Purtill J, Ramey C. Negative peer perceptions of obese children in the classroom environment. *Obesity (Silver Spring)*. 2008;16(4):755–762
23. Ali MM, Amialchuk A, Rizzo JA. The influence of body weight on social network ties among adolescents. *Econ Hum Biol*. 2012;10(1):20–34
24. Committee on Injury, Violence, and Poison Prevention. Policy statement—role of the pediatrician in youth violence prevention. *Pediatrics*. 2009;124(1):393–402
25. Neumark-Sztainer D, Falkner N, Story M, Perry C, Hannan PJ, Mulert S. Weight-teasing among adolescents: correlations with weight status and disordered eating behaviors. *Int J Obes Relat Metab Disord*. 2002;26(1):123–131
26. Goldfield G, Moore C, Henderson K, Buchholz A, Obeid N, Flament M. The relation between weight-based teasing and psychological adjustment in adolescents. *Paediatr Child Health (Oxford)*. 2010;15(5):283–288
27. Gunnarsdottir T, Njardvik U, Olafsdottir AS, Craighead LW, Bjarnason R. Teasing and social rejection among obese children enrolling in family-based behavioral treatment: effects on psychological adjustment and academic competencies. *Int J Obes (Lond)*. 2012;36(1):35–44
28. Storch EA, Milsom VA, Debraganza N, Lewin AB, Geffken GR, Silverstein JH. Peer victimization, psychosocial adjustment, and physical activity in overweight and at-risk-for-overweight youth. *J Pediatr Psychol*. 2007;32(1):80–89
29. Libbey HP, Story MT, Neumark-Sztainer DR, Boutelle KN. Teasing, disordered eating behaviors, and psychological morbidities among overweight adolescents. *Obesity (Silver Spring)*. 2008;16(suppl 2):S24–S29
30. Thompson JK, Cattarin J, Fowler B, Fisher E. The Perception of Teasing Scale (POTS): a revision and extension of the Physical Appearance Related Teasing Scale (PARTS). *J Pers Assess*. 1995;65(1):146–157
31. Stern M, Mazzeo SE, Gerke CK, Porter JS, Bean MK, Laver JH. Gender, ethnicity, psychosocial factors, and quality of life among severely overweight, treatment-seeking adolescents. *J Pediatr Psychol*. 2007;32(1):90–94
32. Quinlan NP, Hoy MB, Costanzo PR. Sticks and stones: the effects of teasing on psychosocial functioning in an overweight treatment-seeking sample. *Soc Dev*. 2009;18(4):24
33. Eddy KT, Tanofsky-Kraff M, Thompson-Brenner H, Herzog DB, Brown TA, Ludwig DS. Eating disorder pathology among overweight treatment-seeking youth: clinical correlates and cross-sectional risk modeling. *Behav Res Ther*. 2007;45(10):2360–2371
34. Sinton MM, Goldschmidt AB, Aspen V, et al. Psychosocial correlates of shape and weight concerns in overweight pre-adolescents. *J Youth Adolesc*. 2012;41(1):67–75
35. Jensen CD, Steele RG. Longitudinal associations between teasing and health-related quality of life among treatment-seeking overweight and obese youth. *J Pediatr Psychol*. 2012;37(4):438–447
36. Wellspring Academies. Available at: www.wellspringacademies.com/. Accessed February 11, 2012
37. Camp Shane. Available at: www.campshane.com/. Accessed February 11, 2012
38. Ybarra ML, Diener-West M, Leaf PJ. Examining the overlap in internet harassment and school bullying: implications for school intervention. *J Adolesc Health*. 2007;41(6 suppl 1):S42–S50
39. Cook C, Heath F, Thompson RL. A meta-analysis of response rates in Web- or Internet-based surveys. *Educ Psychol Meas*. 2000;60(6):821–836
40. Ogden CL, Kuczmarski RJ, Flegal KM, et al. Centers for Disease Control and Prevention 2000 growth charts for the United States: improvements to the 1977 National Center for Health Statistics version. *Pediatrics*. 2002;109(1):45–60
41. Barlow SE; Expert Committee. Expert committee recommendations regarding the prevention, assessment, and treatment of child and adolescent overweight and obesity: summary report. *Pediatrics*. 2007;120(suppl 4):S164–S192
42. Zeller MH, Saelens BE, Roehrig H, Kirk S, Daniels SR. Psychological adjustment of obese youth presenting for weight management treatment. *Obes Res*. 2004;12(10):1576–1586
43. Neumark-Sztainer D, Croll J, Story M, Hannan PJ, French SA, Perry C. Ethnic/racial differences in weight-related concerns and behaviors among adolescent girls and boys: findings from Project EAT. *J Psychosom Res*. 2002;53(5):963–974
44. Enders CK. *Applied Missing Data Analysis*. New York, NY: Guilford; 2010
45. Schneider SK, O'Donnell L, Stueve A, Coulter RW. Cyberbullying, school bullying, and psychological distress: a regional census of high school students. *Am J Public Health*. 2012;102(1):171–177
46. Lindelof A, Vinther Nielson C, Pedersen BD. Obesity stigma at home: a qualitative, longitudinal study of obese adolescents and their parents. *Child Obes*. 2011;7(6):462–474
47. Pierce JW, Wardle J. Cause and effect beliefs and self-esteem of overweight children. *J Child Psychol Psychiatry*. 1997;38(6):645–650
48. Puhl RM, Brownell KD. Confronting and coping with weight stigma: an investigation of overweight and obese adults. *Obesity (Silver Spring)*. 2006;14(10):1802–1815
49. Faith MS, Leone MA, Ayers TS, Heo M, Pietrobelli A. Weight criticism during physical activity, coping skills, and reported physical activity in children. *Pediatrics*. 2002;110(2 pt 1). Available at: www.pediatrics.org/cgi/content/full/110/2/e23

50. Hebl MR, Mannix LM. The weight of obesity in evaluating others: a mere proximity effect. *Pers Soc Psychol Bull.* 2003;29(1):28–38
51. Latner JD, Ebneter DS, O'Brien KS. Residual obesity stigma: an experimental investigation of bias against obese and lean targets differing in weight-loss history. *Obesity (Silver Spring).* 2012;20(10):2035–2038
52. Shakoor S, Jaffee SR, Andreou P, et al. Mothers and children as informants of bullying victimization: results from an epidemiological cohort of children. *J Abnorm Child Psychol.* 2011;39(3):379–387
53. Sherry B, Jefferds ME, Grummer-Strawn LM. Accuracy of adolescent self-report of height and weight in assessing overweight status: a literature review. *Arch Pediatr Adolesc Med.* 2007;161(12):1154–1161

Weight-Based Victimization: Bullying Experiences of Weight Loss Treatment–Seeking Youth

Rebecca M. Puhl, Jamie Lee Peterson and Joerg Luedicke

Pediatrics 2013;131:e1

DOI: 10.1542/peds.2012-1106 originally published online December 24, 2012;

Updated Information & Services

including high resolution figures, can be found at:
<http://pediatrics.aappublications.org/content/131/1/e1>

References

This article cites 48 articles, 7 of which you can access for free at:
<http://pediatrics.aappublications.org/content/131/1/e1#BIBL>

Subspecialty Collections

This article, along with others on similar topics, appears in the following collection(s):
Endocrinology
http://www.aappublications.org/cgi/collection/endocrinology_sub
Gastroenterology
http://www.aappublications.org/cgi/collection/gastroenterology_sub
Injury, Violence & Poison Prevention
http://www.aappublications.org/cgi/collection/injury_violence_-_poison_prevention_sub
Bullying
http://www.aappublications.org/cgi/collection/bullying_sub
Obesity
http://www.aappublications.org/cgi/collection/obesity_new_sub

Permissions & Licensing

Information about reproducing this article in parts (figures, tables) or in its entirety can be found online at:
<http://www.aappublications.org/site/misc/Permissions.xhtml>

Reprints

Information about ordering reprints can be found online:
<http://www.aappublications.org/site/misc/reprints.xhtml>

American Academy of Pediatrics

DEDICATED TO THE HEALTH OF ALL CHILDREN®



PEDIATRICS[®]

OFFICIAL JOURNAL OF THE AMERICAN ACADEMY OF PEDIATRICS

Weight-Based Victimization: Bullying Experiences of Weight Loss Treatment–Seeking Youth

Rebecca M. Puhl, Jamie Lee Peterson and Joerg Luedicke

Pediatrics 2013;131:e1

DOI: 10.1542/peds.2012-1106 originally published online December 24, 2012;

The online version of this article, along with updated information and services, is located on the World Wide Web at:

<http://pediatrics.aappublications.org/content/131/1/e1>

Pediatrics is the official journal of the American Academy of Pediatrics. A monthly publication, it has been published continuously since 1948. Pediatrics is owned, published, and trademarked by the American Academy of Pediatrics, 345 Park Avenue, Itasca, Illinois, 60143. Copyright © 2013 by the American Academy of Pediatrics. All rights reserved. Print ISSN: 1073-0397.

American Academy of Pediatrics

DEDICATED TO THE HEALTH OF ALL CHILDREN[®]

