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ORIGINAL RESEARCH

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Weight-based victimization among sexual and gender minority adolescents: Findings from a diverse national sample

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Summary

Objectives: Children and adolescents with overweight and obesity are vulnerable to weight-based victimization. Research on weight-based victimization and sexual identity have been largely isolated from one another; little is known about the nature of weight-based victimization in sexual and gender minority (SGM: eg, lesbian, gay, bisexual, and transgender) youth. Our study is the first to examine the nature, extent, and sources of weight-based victimization in a large sample of SGM adolescents.

Methods: This study utilized data from the *LGBTQ National Teen Survey*, a comprehensive online survey assessing victimization, school experiences, health behaviors, and sexuality-specific experiences of SGM adolescents across the United States. The sample was composed of 9838 SGM adolescents (M_{age} = 15.6 years).

Results: Across diverse sexual orientation and gender identity groups, 44% to 70% of adolescents reported weight-based teasing from family members, and 42% to 57% reported weight-based teasing from peers. Approximately one-third of adolescents reported these experiences from both family and peers. Weight-based victimization was prevalent across body weight categories, particularly at highest (obesity) and lowest (underweight) extremes. Moreover, weight-based victimization was prevalent across adolescents who endorsed established sexual identity labels (eg, gay, lesbian, bisexual) and emerging labels (eg, pansexual, asexual).

Conclusions: Weight-based victimization, from family members and peers, is prevalent among SGM adolescents, across diverse body sizes and sexual and gender identities. Pediatric providers should be aware that SGM youth may be vulnerable to weight-based victimization, across diverse body sizes.

KEYWORDS

family, peer, sexual minority, weight-based victimization

1 | INTRODUCTION

Weight-based victimization has become a widespread form of teasing and mistreatment experienced by adolescents. With US rates of adolescent obesity now reaching 20%,[1] those with high body weight are particularly vulnerable to peer victimization. Reports from students, parents, and educators corroborate that weight-based victimization is a common form of peer harassment in the school setting.[2-4] These findings hold true in ethnically diverse populations of youth, national research, and international studies, which have identified weight-based victimization among the most prevalent reasons that youth are bullied.[3,5,6] Emerging evidence further indicates that adolescents with high body weight commonly report weight-based victimization from family members; as many as 37% to 58% of adolescents with obesity (or at risk for obesity) report that their parents have teased or bullied them because of their weight.[7,8]

Adverse psychological and physical health consequences of weight-based victimization in youth are well documented. In addition to increased risk for depression, low-self-esteem, suicidal ideation, and poor body image, youth who face weight-based victimization have higher levels of disordered eating, harmful weight control behaviors, weight gain, and lower levels of physical activity.[9-13] These health consequences can be long lasting; a recent longitudinal study demonstrated that parental weight-based teasing in adolescence predicted obesity, binge eating, unhealthy weight control, and eating to cope with distress 15 years later.[14] Collectively, this evidence prompted a recent policy statement from the American Academy of Pediatrics recommending that pediatric health providers take steps to help youth who are vulnerable to weight stigma.[15]

Despite the mounting evidence of weight-based victimization in adolescence, there has been a lack of attention to this issue in sexual and gender minority (SGM) adolescents, including whether they are more or less vulnerable to weight-based victimization than heterosexual and cisgender youth. The lack of research in this area is concerning for several reasons. First, evidence has documented high rates of overweight and obesity in sexual minority youth. Using data from the Youth Risk Behavioral Surveillance Survey (2005-2007), Austin and colleagues reported higher odds of obesity in bisexual identified girls and boys compared with same gender heterosexual youth.[16] Prospective research in the Growing Up Today Study showed that females experienced elevated body mass index (BMI) in all sexual orientation minority groups compared with heterosexual peers.[17] Similar findings were observed in the National Longitudinal Study of Adolescent Health to Young Adulthood, where white and Latina bisexual identified females had higher BMI's than heterosexual peers of the same race and age.[18] Thus, it may be sexual minority females who are particularly at risk for weight gain, as findings for males from these studies suggest a steeper increase in BMI among heterosexuals than sexual minorities. This pattern appears to continue into adulthood, with a higher prevalence of obesity in sexual minority women compared with heterosexual women and sexual minority men.[19-22] While less attention has focused on links between weight-related disparities and gender identity among youth, emerging studies have found a higher likelihood of obesity among transgender college students compared with non-transgender peers,[23] and that gender minority adults are more likely to be overweight compared with cisgender adults.[24] Additionally, gender minority adolescents may experience weight gain if prescribed cross-gender hormone therapy.[25] Collectively, this evidence underscores the importance of determining whether SGM adolescents are at risk for weight-based victimization, examining the nature and prevalence of these experiences, and whether their vulnerability to weight-based victimization varies across weight status or different sexual or gender identities.

Second, the amassing literatures on weight-based victimization and sexual identity have been largely isolated from one another, with little attention to the intersectionality of social identities related to body weight, sexual orientation, and gender identity in youth. The limited evidence in this area suggests that adolescents with obesity may be vulnerable to multiple forms of peer harassment[3]; one study found that the odds of adolescents reporting sexual orientation discrimination were approximately three times higher for youth with overweight and obesity compared with healthy weight peers, and the combination of these experiences was associated with increased depressive symptoms, suicidal ideation, and self-harm.[26] This initial evidence indicates the need to better understand links between body weight, weight-based victimization, and sexual and gender identity in youth. In particular, we know almost nothing about the nature or extent of weight-based victimization across diverse sexual identities of adolescents, including those who identify with more established categories of sexual identity (eg, lesbian, gay, bisexual) versus emerging identity labels (such as pansexual or asexual). These emerging identity labels are being endorsed at higher rates by today's youth;[27] as such, the heterogeneity of sexual identities necessitates a comprehensive examination of body weight and weight-based victimization across these diverse groups, which is currently absent in the literature.

These research findings highlight the importance of examining unique vulnerabilities and experiences of adolescents as a result of their social identities pertaining to body weight, sexual orientation, and gender identity. However, these issues require study with large and diverse samples of SGM adolescents, with attention to the relationship between weight-based victimization and body weight status in different sexual minority groups, and whether the source of victimization (peers versus family) varies across these groups. To begin to address these notable research gaps, our study aimed to assess the nature and prevalence of weight-based victimization in a large, national sample of lesbian, gay, bisexual, transgender, and queer (LGBTQ) adolescents. To our knowledge, this study is the first large-scale examination of weight-based victimization and its primary sources (peers versus family), among SGM adolescents, and how these experiences vary across body weight status and sexual identity. We also examine differences in the frequency of weight-based victimization across body weight status and sexual identity, and how weight-based victimization compares to other forms of victimization experienced by adolescents in this sample.

2 | METHODS

2.1 | Study design and population

Our study utilized data from a larger sample of 17112 adolescents who participated in the *LGBTQ National Teen Survey*, a battery of online self-report questionnaires to assess victimization, school experiences, health behaviors, family relationships, and sexuality-specific experiences of LGBTQ adolescents across the United States (US). Data were collected between April and December of 2017, in partnership with the Human Rights Campaign (HRC). English-speaking LGBTQ adolescents (ages 13-17) residing in the US were invited to complete the anonymous, online survey, hosted by the survey website Qualtrics.com. Participants were recruited through social media (Twitter, Facebook, Instagram, Reddit, and Snapchat), HRC's comprehensive network of community partners, and with the assistance of social influencers in the LGBTQ community who shared the survey weblink via their social media profiles. In exchange for participation, all participants were offered HRC wristbands and given the option to enter a raffle for a gift card to a popular online retailer. Procedures were approved by the University of Connecticut Institutional Review Board.

Additional details describing data collection, screening procedures, recruitment, and sample composition are reported elsewhere.[28]

As the present study focused on weight-based victimization among LGBTQ adolescents, we excluded respondents who were missing information on questions about height or weight needed to calculate their BMI (n = 1722) or questions related to weight-based victimization or sexual identity (n = 5552) resulting in a final sample of 9838 SGM adolescents. Participants in the full sample (N = 17 112) were slightly younger than the study sample we analyzed (full sample M = 15.53, SD = 1.27; current sample M = 15.60, SD = 1.26, t (17 110) = −3.36, P = 0.001). In addition, adolescents in our study sample were slightly more likely to identify as White (χ^2 (6) = 248.38, P < 0.001), cis-female or Assigned female at birth non-binary (χ^2 (5) = 170.23, P < 0.001), and lesbian or bisexual (χ^2 (8) = 140.30, P < 0.001) relative to the full sample.

2.2 | Measures

2.2.1 | Demographic information

Participants were asked to provide demographic information such as their age, race/ethnicity, and state of residence.

2.2.2 | Sexual orientation

Participants were asked "How do you describe your sexual identity?" Participants could choose one of the following: "gay or lesbian," "bisexual," "straight, that is, not gay," or "something else." If a participant chose "something else," survey logic presented the additional response options: "queer," "pansexual," "asexual," "questioning," and "other." Those who selected "other" were asked to describe their identity using an open-ended response box, and their written responses were back-coded so that participants described identities that were already presented in forced-choice response options were appropriately categorized.

2.2.3 | Gender identity

Participants were asked "What sex were you assigned at birth?" (male/female) followed by "What is your current gender identity?" Response options included male, female, trans male/trans boy, trans female/trans girl, non-binary, and gender queer/gender non-conforming. Adolescents with concordant sex assigned at birth and gender identities were classified as cisgender, whereas those who reported a gender identity different from their sex assigned at birth were classified as transgender. Participants who indicated male or female as their birth sex, and a non-binary and/or genderqueer/non-conforming gender identity were coded as assigned female at birth (AFAB) non-binary (female birth sex, non-binary/non-conforming) or assigned male at birth (AMAB) non-binary (male birth sex, non-binary/non-conforming).

2.2.4 | Anthropometric data and subjective weight status

Participants self-reported their current height (in feet/inches) and weight (in pounds). BMI percentiles for age and sex were calculated using growth chart available from the Centers for Disease Control and Prevention,[29] and corresponding BMI categories were constructed: <5th percentile (underweight), ≥5 < 85th percentile (healthy weight), 85th < 95th percentile (overweight), and ≥ 95th percentile (obese) (refer to Table 1). Subjective weight status (what participants perceive their weight status to be) was assessed by asking participants whether they considered their weight status to be "very underweight," "underweight," "just about right," "overweight," or "very overweight."[30,31]

2.2.5 | Weight-based victimization

Perceived weight-based victimization was assessed using two yes/no questions from Project EAT,[30-32] a large-scale longitudinal study

TABLE 1 Sample demographics (N = 9838)

	Range		*M*	*SD*
Age	13.00	17.00	15.60	1.26
BMI	12.55	67.14	24.26	6.30
BMI percentile	0.00	99.90	64.86	30.52
	N	*%*		
Race				
White	6495	66		
Biracial or multiracial	1343	13.7		
Hispanic/Latino	981	10		
Black	417	4.2		
Asian	393	4		
Other	159	1.6		
Native American	41	0.4		
Decline	9	.1		
Region				
South	3558	36.2		
Midwest	2294	23.3		
West	2191	22.3		
Northeast	1795	18.2		
Gender identity				
Cisgender girl	4330	44.0		
Assigned female at birth non-binary	2262	23.0		
Cisgender boy	2062	21.0		
Transgender boy	855	8.7		
Assigned male at birth non-binary	215	2.2		
Transgender girl	114	1.2		
Sexual identity				
Bisexual	3313	33.7		
Lesbian	2023	20.6		
Gay	1600	16.3		
Pansexual	1358	13.8		
Asexual	493	5.0		
Queer	444	4.5		
Questioning	228	2.3		
Other	220	2.2		
Straight	159	1.6		
BMI category				
Underweight	422	4.3		
Normal weight	5754	58.5		
Overweight	1724	17.5		
Obese	1938	19.7		

examining eating and weight-related experiences of adolescents: "Have you ever been teased or made fun of by your peers because of your weight?" and "Have you ever been teased or made fun of by members of your family because of your weight?" To assess experiences of weight-based victimization in comparison to other forms of victimization, adolescents were asked how often (using a 5-point Likert scale from *never* = 0 to *very often* = 4) they are teased or treated badly by other students at school for each of the following reasons: body weight, gender, race/ethnicity, sexuality, religion, disability, how masculine or feminine they are, or something else.

2.3 | Statistical analysis

Data were analyzed using SPSS version 25. Means, standard deviations, and frequency statistics are reported for sociodemographic characteristics (Table 1), weight-based victimization by sexual and gender identities (Table 2), and weight-based victimization by BMI category based on BMI percentiles for age and sex (Table 3). Using linear and logistic regressions, we examined odds of weight-based victimization (logistic) and mean frequency of weight-based victimization from peers at school (linear) as a function of sexual identity (reference group "Straight"), gender identity (reference group Cisgender boy), and BMI category (reference group: healthy weight), controlling for age, racial/ethnic identity (reference group: White), and US region (reference group: Northeast) (Table 4). We calculated the mean frequency of school-based teasing due to sexual orientation, masculinity/femininity, weight, gender, race, religion, or disability, and reported the frequency of youth who reported being teased "often" or "very often" for only one reason (ie, these participants indicated "never" to all but one source of teasing at school; see Table 5).

TABLE 2 Rates of weight-based teasing by sexual and gender identity

	Weight Teasing by Family				Weight Teasing by Peers				Weight Teasing by Both Family and Peers				Frequency of Peer Weight Teasing	
	Yes		No		Yes		No		Yes		No		(Range 0-4)	
	N	*%*	*N*	*%*	*N*	*%*	*N*	*%*	*N*	*%*	*N*	*%*	*M*	*SD*
Sexual identity														
Gay (*n* = 1600)	705	44.1	895	55.9	766	47.9	834	52.1	483	30.2	1117	69.8	1.02	1.15
Lesbian (*n* = 2023)	1111	54.9	912	45.1	983	48.6	1040	51.4	704	34.8	1319	65.2	1.07	1.17
Bisexual (*n* = 3313)	1858	56.1	1455	43.9	1703	51.4	1610	48.6	1221	36.9	2092	63.1	1.17	1.20
Straight (*n* = 159)	84	52.8	75	47.2	66	41.5	93	58.5	45	28.3	114	71.7	1.01	1.30
Queer (*n* = 444)	262	59.0	182	41.0	218	49.1	226	50.9	169	38.1	275	61.9	1.07	1.14
Pansexual (*n* = 1358)	842	62.0	516	38.0	780	57.4	578	42.6	569	41.9	789	58.1	1.37	1.26
Asexual (*n* = 493)	303	61.5	190	38.5	222	45.0	271	55.0	175	35.5	318	64.5	1.03	1.16
Questioning (*n* = 228)	127	55.7	101	44.3	104	45.6	124	54.4	76	33.3	152	66.7	1.11	1.29
Other (*n* = 220)	154	70	66	30	118	53.6	102	46.4	95	43.2	125	56.8	1.26	1.24
Gender identity														
Cisgender boy (*n* = 2062)	903	43.8	1159	56.2	996	48.3	1066	51.7	625	30.3	1437	69.7	1.04	1.16
Cisgender girl (*n* = 4330)	2436	56.3	1894	43.7	2109	48.7	2221	51.3	1515	35.0	2815	65.0	1.09	1.17
Transgender boy (*n* = 855)	551	64.4	304	35.6	473	55.3	382	44.7	373	43.6	482	56.4	1.29	1.29
Transgender girl (*n* = 114)	49	43	65	57	49	43.0	65	57.0	32	28.1	82	71.9	1.06	1.26
Assigned female at birth non-binary (*n* = 2262)	1394	61.6	868	38.4	1220	53.9	1042	46.1	914	40.4	1348	59.6	1.26	1.24
Assigned male at birth non-binary (*n* = 206)	113	52.6	102	47.4	113	52.6	102	47.4	78	36.3	137	63.7	1.13	1.21

Note. "Yes" refers to the number of adolescents indicating that they experienced weight-based teasing. Frequency of weight-based teasing from peers included the following response options: 0 (never), 1 (rarely), 2 (sometimes), 3 (often), and 4 (very often), with higher scores indicating greater frequency.

TABLE 3 Rates of weight-based teasing by BMI category

	Weight Teasing by Family				Weight Teasing by Peers				Weight Teasing by Both Family and Peers				Frequency of Peer Weight Teasing	
	Yes		No		Yes		No		Yes	No			(Range 0-4)	
	N	*%*	*N*	*%*	*N*	*%*	*N*	*%*	*N*	*%*	*N*	*%*	*M*	*SD*
Underweight (*n* = 418)	235	55.7	187	44.3	270	64.0	152	36.0	196	46.4	226	53.6	1.33	1.26
Healthy weight (*n* = 5661)	2733	47.5	3021	52.5	2264	39.3	3490	60.7	1505	26.2	4249	73.8	0.79	1.02
Overweight (*n* = 1695)	1083	62.8	641	37.2	931	54.0	793	46.0	688	39.9	1036	60.1	1.30	1.18
Obesity (*n* = 1905)	1395	72.0	543	28.0	1495	77.1	443	22.9	1148	59.2	790	40.8	1.98	1.25

Note. "Yes" refers to the number of adolescents reporting that they experienced weight-based teasing. Frequency of weight-based teasing from peers included the following response options: 0 (never), 1 (rarely), 2 (sometimes), 3 (often), and 4 (very often), with higher scores indicating greater frequency.

TABLE 4 Regressions: Weight-based teasing as a function of sexual identity, gender identity, and demographic characteristics

	Weight Teasing from Peers R^2 = .10, χ^2 (25) = 1,000.14, P < .001					Weight Teasing from Family R^2 = .08, χ^2 (25) = 841.63, P < .001				
	B	β	SE	Wald	P	B	β	SE	Wald	P
U.S. Region (ref: Northeast)										
Midwest	−0.02	0.98	0.07	0.12	.734	0.13	1.14	0.07	4.03	.045
South	0.06	1.06	0.06	0.82	.366	0.08	1.08	0.06	1.61	.204
West	0.02	1.02	0.07	0.07	.787	0.00	1.00	0.07	0.00	.988
Racial Identity (ref: White)										
Black	−0.37	0.69	0.11	11.50	.001	0.16	1.17	0.11	2.18	.140
Asian	−0.25	0.78	0.11	5.01	.025	0.87	2.39	0.11	58.64	< .001
Hispanic	0.05	1.05	0.07	0.51	.476	0.72	2.05	0.08	89.21	< .001
Multiracial	0.04	1.04	0.06	0.32	.571	0.42	1.52	0.06	43.36	< .001
Other[a]	0.54	1.72	0.17	9.74	.002	0.62	1.86	0.17	12.77	< .001
Age	0.01	1.01	0.02	0.35	.554	0.12	1.13	0.02	49.58	< .001
Gender Identity (ref: Cisgender Boy)										
Cisgender Girl	0.13	1.14	0.09	1.98	.159	0.64	1.90	0.09	49.99	< .001
Transgender Boy	0.29	1.33	0.12	6.22	.013	0.94	2.56	0.12	66.79	< .001
Transgender Girl	−0.31	0.74	0.22	2.04	.154	-0.05	0.95	0.21	0.05	.819
Assigned female at birth non-binary	0.30	1.35	0.10	9.06	.003	0.83	2.29	0.10	70.83	< .001
Assigned male at birth non-binary	0.27	1.31	0.15	3.04	.081	0.43	1.54	0.15	8.24	.004
Sexual Identity (reference: Straight)										
Gay	0.47	1.59	0.20	5.31	.021	0.28	1.32	0.20	1.93	.164
Lesbian	0.43	1.53	0.18	5.30	.021	0.20	1.22	0.18	1.20	.274
Bisexual	0.54	1.72	0.18	8.94	.003	0.29	1.33	0.18	2.62	.105
Queer	0.28	1.32	0.20	1.91	.167	0.26	1.30	0.20	1.77	.184
Pansexual	0.67	1.96	0.19	13.15	< .001	0.41	1.50	0.18	5.03	.025
Asexual	0.20	1.22	0.20	0.97	.324	0.46	1.58	0.20	5.33	.021
Questioning	0.20	1.22	0.23	0.76	.382	0.24	1.27	0.22	1.19	.276
Other	0.57	1.77	0.23	6.28	.012	0.87	2.37	0.23	14.08	< .001
BMI Category (ref: Healthy weight)										
Underweight	1.06	2.88	0.11	97.15	< .001	0.52	1.68	0.11	24.07	< .001
Overweight	0.58	1.79	0.06	108.38	< .001	0.61	1.83	0.06	109.93	< .001
Obese	1.65	5.21	0.06	720.95	< .001	1.05	2.87	0.06	319.00	< .001

	Both Peer & Family Teasing R^2 = .09, χ^2 (25) = 891.21, P < .001					Frequency of Peer Weight Teasing: R^2 = .16, F (25, 9762) 76.95, P < .001				
	B	*β*	*SE*	*Wald*	*P*	*B*	*SE*	*β*	*t*	*P*
Region (ref: Northeast)										
Midwest	0.06	1.06	0.07	0.77	.379	0.06	0.04	0.02	1.78	.075
South	0.08	1.08	0.06	1.52	.217	0.06	0.03	0.03	1.98	.048
West	0.07	1.07	0.07	1.00	.318	0.05	0.04	0.02	1.46	.145
Racial Identity (ref: White)										
Black	−0.16	0.85	0.11	2.03	.154	−0.26	0.06	−0.04	−4.60	< .001
Asian	0.23	1.25	0.11	3.92	.048	−0.15	0.06	−0.03	−2.64	.008
Hispanic	0.39	1.48	0.07	27.60	< .001	0.03	0.04	0.01	0.83	.407
Multiracial	0.23	1.26	0.07	12.54	< .001	0.02	0.03	0.00	0.47	.640
Other[a]	0.66	1.94	0.17	15.40	< .001	0.26	0.09	0.03	2.99	.003
Age	0.09	1.09	0.02	24.77	< .001	−0.03	0.01	−0.03	−3.01	.003
Gender Identity (ref: Cisgender Boy)										
Cisgender Girl	0.37	1.44	0.10	14.28	< .001	0.10	0.05	0.04	2.04	.041
Transgender Boy	0.66	1.94	0.12	31.01	< .001	0.18	0.06	0.04	2.94	.003
Transgender Girl	−0.16	0.86	0.23	0.44	.508	−0.05	0.11	0.00	−0.43	.667

(Continues)

TABLE 4 (Continued)

	Both Peer & Family Teasing R^2 = .09, χ^2 (25) = 891.21, P < .001					Frequency of Peer Weight Teasing: R^2 = .16, F (25, 9762) 76.95, P < .001				
	B	*β*	*SE*	*Wald*	*P*	*B*	*SE*	*β*	*t*	*P*
Assigned female at birth non-binary	0.57	1.76	0.10	29.60	< .001	0.22	0.05	0.08	4.20	< .001
Assigned male at birth non-binary	0.37	1.45	0.16	5.31	.021	0.14	0.08	0.02	1.69	.092
Sexual Identity (reference: Straight)										
Gay	0.53	1.70	0.22	5.95	.015	0.15	0.10	0.05	1.42	.155
Lesbian	0.49	1.63	0.20	6.06	.014	0.12	0.09	0.04	1.23	.217
Bisexual	0.60	1.81	0.20	9.30	.002	0.21	0.09	0.08	2.22	.026
Queer	0.47	1.61	0.22	4.84	.028	0.01	0.10	0.00	0.12	.907
Pansexual	0.67	1.95	0.20	11.34	.001	0.30	0.10	0.09	3.20	.001
Asexual	0.45	1.57	0.21	4.46	.035	0.04	0.10	0.01	0.36	.716
Questioning	0.36	1.43	0.24	2.25	.134	0.09	0.12	0.01	0.75	.455
Other	0.79	2.20	0.24	10.98	.001	0.25	0.12	0.03	2.16	.031
BMI Category (ref: Healthy weight)										
Underweight	1.01	2.75	0.11	91.61	< .001	0.59	0.06	0.10	10.52	< .001
Overweight	0.61	1.84	0.06	108.63	< .001	0.50	0.03	0.16	16.33	< .001
Obese	1.41	4.11	0.06	625.23	< .001	1.18	0.03	0.39	40.51	< .001

Note. The logistic regressions (weight teasing from peers, weight teasing from family, both peer & family teasing) examined odds of indicating an experience of weight-based teasing. Frequency of peer weight teasing included the following response options: 0 (never), 1 (rarely), 2 (sometimes), 3 (often) and 4 (very often), with higher scores indicating greater frequency.

[a]Given the limited numbers in these categories, the other racial category in this model includes individuals who indicated "other" for a racial/ ethnic identity as well as individuals who reported a Native American racial/ethnic identity.

TABLE 5 Sexual minority adolescents' reported frequency of different reasons for peer victimization at school

	Frequency of Teasing (Range 0-4)		Often or Very Often Teased for This Reason Only	
	M	*SD*	*N*	*%*
Perceived reason for victimization				
Sexual orientation	1.51	1.28	414	4.2
Masculine/feminine	1.44	1.32	502	5.1
Weight	1.14	1.20	377	3.8
Gender	1.01	1.20	170	1.7
Race	0.54	0.95	119	1.2
Religion	0.52	0.98	102	1.0
Disability	0.35	0.85	77	0.8

Frequency of teasing for each reason was assessed on a scale ranging from 0 (never) to 4 (very often). The percentages in the last column reflect adolescents who indicated they were "often" or "very often" teased for a single reason only (ie, they indicated "never" being teased for every other reason listed in the table).

3 | RESULTS

3.1 | Sample characteristics

Table 1 summarizes sample characteristics. Participants were on average 15.60 (*SD* = 1.26) years old, with a mean BMI percentile in the healthy weight range (*M* = 64.86, *SD* = 30.52); 17.5% had a BMI consistent with overweight, and 19.7% with obesity. The most common gender identities reported by adolescents included cisgender girl (44.0%), Assigned female at birth non-binary (23%), and cisgender boy (21%), and the most common sexual identities included bisexual (33.7%), lesbian (20.6%), gay (16.3%), and pansexual (13.8%). All participants who reported a straight sexual identity identified as a gender minority (ie, they were a sexual and/or gender minority). In the "other" category, adolescents identified as demisexual (*n* = 49), fluid (*n* = 30), having multiple sexual identities (*n* = 113), or selected another identity that fewer than five other participants endorsed (*n* = 28).

3.2 | Frequency of weight-based victimization across sexual identities and BMI

Across sexual identities, between 44% and 70% of adolescents reported weight-based teasing from family members (see Table 2). Forty-four percent of adolescents identifying as gay reported weight-based teasing from family, while over half of participants identifying as lesbian (54.9%), straight (52.8%), bisexual (56.1%), or questioning (55.7%) reported weight-based teasing from family. Larger proportions of adolescents identifying as queer (59%), pansexual (62%), asexual (61.5%), and "other" (70%) reported weight-based teasing from family. Similarly, across sexual identities, between 41.5% and 57% of adolescents reported weight-based teasing from peers. Over half of participants identifying as pansexual (57.4%) or "other" (53.6%) reported weight-based teasing form peers. The frequency of these incidents from peers was relatively low across sexual identities (*M* = 1.02 to 1.37, *SD* = 1.14 to 1.30) on the scale ranging from 0 to 4. Across all sexual identity groups, 28% to 44% reported experiencing weight-based teasing from both family and peers.

Across gender identities, 43% to 65% of adolescents reported weight-based teasing from family members. Both cisgender boys (43.8%) and transgender girls (43.0%) were least likely to experience weight-based teasing from family, while over half of cisgender girls (56.3%) and Assigned male at birth non-binary adolescents (52.6%) experienced weight-based teasing from family. Transgender boys (64.4%) and Assigned female at birth non-binary adolescents (61.6%) experienced the most weight-based teasing from family members. Between 43% and 55% of gender minorities experienced weight-based teasing from peers, with the highest percentages reported by transgender boys (55.3%), Assigned female at birth non-binary adolescents (53.9%), and Assigned male at birth non-binary (52.6%) adolescents. In total, 28% to 43% of gender minority adolescents experienced weight-based teasing from both friends and family members; the highest percentages reporting teasing from both friends and family were transgender boys (43.6%) and Assigned female at birth non-binary identified youth. Similar to sexual identity, frequency of peer-based teasing at school was relatively low (M = 1.0-1.29, SD = 1.2-1.3) on the 4-point scale.

Across all body weight categories, high percentages of sexual minority adolescents reported weight-based teasing from family members and peers (see Table 3). Adolescents with a BMI percentile in the healthy weight range were least likely to report weight-based teasing from family (47.5%) or peers (39.3%). More than half of participants with an underweight BMI percentile reported weight-based teasing from family (55.7%) or peers (64%). Among those with an overweight BMI percentile, 62.8% reported weight-based teasing from family and 54% from peers. Approximately three-quarters of participants with obesity reported weight-based teasing from family (72%) or peers (77.1%). For adolescents who reported weight-based teasing from both sources (family and peers), a similar pattern of results emerged with the highest rates of teasing reported by adolescents with obesity (59.2%), followed by those with an underweight BMI (46.6%), overweight BMI (39.9%), and healthy weight BMI (26.2%).

3.3 | Differences in weight-based victimization by sexual identity and BMI

3.3.1 | Logistic regression results

A logistic regression assessing odds of weight-based peer teasing by gender identity, sexual identity, BMI category, racial/ethnic identity, age, and US region accounted for 10% of the variance in odds of weight-based teasing from peers (see Table 4). Transgender boys (B = 0.29, P = 0.013) had 1.33 increased odds of experiencing weight-based teasing relative to cisgender boys, and Assigned female at birth non-binary adolescents (B = 0.30, P = 0.003) had 1.35 increased odds of experiencing weight-based teasing from peers relative to cisgender boys. No other gender minorities differed in odds of weight-based teasing from peers relative to cisgender boys. Relative to adolescents identifying as straight, those identifying as gay (B = 0.47, P = 0.021, odds increase: 1.59), lesbian (B = 0.43, P = 0.021, odds increase: 1.53), bisexual (B = 0.54, P = 0.003, odds increase: 1.72), pansexual (B = 0.67, P < 0.001, odds increase: 1.96), or other (B = 0.57, P = 0.012, odds increase: 1.77) had higher odds of experiencing weight-based teasing from peers. Adolescents with an underweight BMI (B = 1.06, P < 0.001) were 2.88 times more likely to experience weight-based teasing from peers than adolescents at a healthy weight, while overweight adolescents (B = 0.58, P < 0.001) had 1.79 increased odds, and adolescents with obesity (B = 1.65, P < 0.001) had 5.21 increased odds of experiencing weight-based teasing from peers relative to adolescents at a healthy weight.

A logistic regression assessing odds of weight-based teasing from family members by adolescents' gender identity, sexual identity, BMI category, racial/ethnic identity, age, and US region accounted for 8% of the variance in odds of weight-based teasing by family members. Cisgender girls (B = 0.64, P < 0.001) had 1.90 increased odds of experiencing weight-based teasing from family compared with cisgender boys. Transgender boys (B = 0.94, P < 0.001) had 2.56 increased odds relative to cisgender boys of experiencing weight-based teasing from family. Compared with cisgender boys, Assigned female at birth non-binary adolescents (B = 0.83, P < 0.001) had 2.29 increased odds, and Assigned male at birth non-binary adolescents (B = 0.43, P = 0.004) had 1.54 increased odds of experiencing weight-based teasing from family. Relative to adolescents identifying as straight, pansexual (B = 0.41, P = 0.025, odds increase: 1.50), asexual (B = 0.46, P = 0.021, odds increase: 1.58), and adolescents with other sexual identities (B = 0.87, P < 0.001, odds increase: 2.37) experienced increased odds of teasing from family members. Adolescents with an underweight BMI (B = 0.52, P < 0.001) were 1.68 times more likely than adolescents at a healthy weight to experience weight-based teasing from family, while overweight adolescents (B = 0.61, P < 0.001) had 1.83 increased odds and adolescents with obesity (B = 1.05, P < 0.001) had 2.87 increased odds of experiencing weight-based teasing from family compared with adolescents at a healthy weight.

A logistic regression assessing odds of both peer and family weight-based teasing by region, racial/ethnic identity, age, gender identity, sexual identity, and BMI category accounted for 9% of the variance in teasing from peers and family. Relative to cisgender boys, cisgender girls (B = 0.37, P < 0.001) had 1.44 increased odds, transgender boys (B = 0.66, P < 0.001) had 1.94 increased odds, Assigned female at birth non-binary adolescents (B = 0.57, P < 0.001) had 1.76 increased odds, and Assigned male at birth non-binary adolescents (B = 0.37, P = 0.021) had 1.45 increased odds of experiencing weight-based teasing from both family and peers. Compared with adolescents identifying as straight, adolescents who identified as gay (B = 0.53, P = 0.015, odds increase: 1.70), lesbian (B = 0.49, P = 0.014, odds increase: 1.63), bisexual (B = 0.60, P = 0.002, odds increase: 1.81), queer (B = 0.47, P = 0.028, odds increase: 1.61), pansexual (B = 0.67, P = 0.001, odds increase: 1.95), asexual (B = 0.45, P = 0.035, odds increase: 1.57), and adolescents with other sexual identities (B = 0.79, P = 0.001, odds increase: 2.20) had increased odds of experiencing weight teasing from both peers and family members. Adolescents with an underweight BMI (B = 1.01, P < 0.001) were 2.75 times more likely, adolescents with an overweight BMI (B = 0.61, P < 0.001) were 1.84 times more likely, and adolescents with obesity (B = 1.41, P < 0.001) were 4.11 times more likely to experience weight-based teasing from peers and family compared with adolescents at a healthy weight.

3.3.2 | Linear regression results

A linear regression assessing frequency of weight-based peer teasing at school as a function of US region, racial/ethnic identity, age, gender identity, sexual identity, and BMI category accounted for 17% of the variance in frequency of weight-based peer teasing at school. Cisgender girls (B = 0.10, P = 0.041), transgender boys (B = 0.18, P = 0.003), and Assigned female at birth non-binary adolescents (B = 0.22, P < 0.001) experienced more frequent weight-based teasing from peers in school relative to cisgender boys. Bisexual adolescents (B = 0.21, P = 0.026), pansexual adolescents (B = 0.30, P = 0.001), and adolescents with other sexual identities (B = 0.25, P = .031) experienced more frequent weight-based teasing from peers in school compared with straight adolescents. Adolescents with an underweight BMI (B = 0.59, P < 0.001), overweight BMI (B = 0.50, P < 0.001), or obesity (B = 1.18, P < 0.001) experienced more frequent weight-based teasing from peers at school compared with adolescents at a healthy weight.

3.3.3 | Comparison of reasons for peer victimization

Table 5 shows the mean frequency of teasing from peers at school for different reasons. The three most frequent reasons for which adolescents reported being teased at school were (1) sexual orientation, (2) masculine/feminine presentation, and (3) body weight. Among adolescents who reported being victimized for a singular reason, sexual identity, masculinity/femininity, and body weight were the most common reasons that they were teased or treated badly by peers.

4 | DISCUSSION

Our study assessed the nature and extent of weight-based victimization in a large, national sample of SGM adolescents. This is the first large-scale examination of experiences and sources of weight-based victimization in this population. We found that weight-based victimization is a common experience for adolescents across diverse sexual and gender identities and body weight categories, with important implications for advancing research in this understudied area and improving anti-bullying initiatives.

A high percentage of adolescents (45% to 57%, depending on identity category) across sexual identity and gender identity groups reported experiencing weight-based victimization from their peers. These rates appear to be comparable, and in some cases higher, than weight-based harassment and teasing reported in previous samples of primarily heterosexual adolescents,[3,33] including studies using highly similar questions about weight-based teasing.[12] Furthermore, approximately one-quarter of sexual minority adolescents in our study reported being teased about their body weight at school at least sometimes, often, or very often, and body weight was the third most common reason they reported being teased or treated badly compared with other motives for peer victimization. A priority for future research in this area will be to determine the nature, frequency, and temporal aspects (eg, onset and duration) of different types of weight-based victimization experienced among SGM youth, including verbal, cyber, relational, and physical forms of victimization. Body weight is often a neglected topic in school-based anti-bullying policies,[34] and our findings suggest that heightened awareness of this issue may be warranted in school settings and in anti-bullying policies to ensure that weight-based victimization is adequately addressed and that SGM youth are recognized as potentially vulnerable targets for this form of victimization.

Concerning levels (44%-70%) of adolescents across sexual identity and gender identity groups reported weight-based victimization from family members. Higher odds of experiencing weight-based teasing from family occurred for cisgender girls, transgender boys, Assigned female at birth non-binary adolescents, and Assigned male at birth non-binary adolescents compared with cisgender boys. Compared with adolescents who identified as straight, youth who identified as pansexual, asexual, and "other" had higher odds of experiencing weight-based teasing from family. It is also notable that the highest rates of family teasing (70%) were reported by adolescents who classified their sexual identity as "other." These youth warrant further examination to determine reasons for their potentially heightened vulnerability to family teasing, and whether factors such as gender non-conformity or disclosure of their sexuality play a role. While parents have been previously documented as a common source of weight-victimization toward youth with overweight or obesity,[8,14] our study offers novel insights about these family experiences for SGM youth. As parents may be sources of sexual orientation victimization toward their children,[35-37] our findings suggest that SGM youth may be additionally vulnerable to weight-based victimization, placing them at risk for compounding stressors in the home setting. Furthermore, the considerable range in reports of family teasing (eg, 44% in gay identified adolescents versus over 60% of adolescents who identified as pansexual or asexual) reiterate the need for research to examine diverse sexual and gender identities of youth and identify unique vulnerabilities of those with emerging sexual identity labels, as well as more established identities.

Taken together, the high frequency of SGM youth reporting familial weight victimization in our study indicates the need for research to examine potential differences in the nature and extent of weight-based victimization from mothers, fathers, and siblings, as well patterns of parental communication about body weight across youth with different sexual and gender identities. Given that approximately one-third of adolescents across sexual identity groups reported experiencing weight-based victimization from both family members and peers, our findings also suggest that some SGM youth are vulnerable to mistreatment in both the home and school settings. Compared with adolescents who identified as straight, odds of weight-based teasing from both family and peers were higher for those who identified as gay, lesbian, bisexual, queer, pansexual, asexual, and other. Compared with cisgender boys, higher odds of weight-based teasing from both family and peers were observed for cisgender girls, transgender boys, Assigned female at birth nonbinary adolescents, and Assigned male at birth nonbinary adolescents. Collectively, these findings indicate the need for additional research to examine vulnerabilities to weight-based victimization across different sexual and gender identities and suggest that these youth may benefit from support from other caring adults in their lives, such as teachers, coaches, or health care providers. Further, given the high levels of weight-based teasing reported in our sample, it

will be informative for future work to examine whether, and to what extent, SGM youth internalize weight bias, which has been linked with adverse health outcomes in emerging studies of heterosexual youth.[38]

Regardless of the source of weight-based victimization (peers or family), SGM adolescents reported these experiences at diverse body weight categories. Compared with previous research in primarily heterosexual samples of adolescents documenting disproportionally higher rates of weight-based victimization among adolescents with overweight and obesity compared with lower body weight categories,[3,26] we observed a different pattern in our study; weight-based victimization was reported at both low and high body weight categories in our sample. Compared with healthy weight peers, adolescents with an underweight, overweight, or obese BMI had increased odds of weight-based victimization from both peers and family members. Although odds of weight-based victimization remained highest (as much as 5 times higher) among adolescents with obesity, these findings highlight the importance of recognizing that SGM youth may be vulnerable to weight-based victimization at overweight and especially underweight BMI categories; this experience is not limited to adolescents with obesity. These findings are timely in light of the recent policy statement from the American Academy of Pediatrics recommending that pediatricians assess youth with obesity for emotional comorbidities associated with body weight, including weight-based victimization.[15] Our results suggest that pediatric providers should be aware that SGM youth may be vulnerable to weight-based victimization, regardless of their body size, and should screen these youth for victimization experiences not only in the context of sexual identity, but also body weight. This can include assessment of psychosocial comorbidities associated with weight-based victimization, such as low self-esteem, depression, anxiety, poor school performance, and maladaptive eating behaviors.[15]

Finally, it is important to highlight the high percentages of adolescents with emerging sexual identity labels (eg, pansexual, asexual) who reported weight-based victimization in our study. While sexual minority youth have typically been represented as a homogenous community in the scientific literature,[39,40] our study highlights the importance of including measurement of diverse sexual identities in research, and the need for increased recognition of the heterogeneity of sexual identity in youth. Only with more comprehensive measurement of these diverse sexual identities can we accurately understand the differences in their lived experiences and health-related disparities. Future research might additionally explore if there are patterns of youth who endorse emerging identity labels, such as pansexual, and also resist the victimization of diverse body sizes. We are not able to conclude from our data whether or not youth who are identifying as emerging sexual orientation labels are resisting oppression in unique ways, but there may be something unique about the disposition of this group of young people.

Our study has several limitations. This research represents cross-sectional data and non-probability sampling methods; thus, it will be important for longitudinal research to study SGM youth throughout adolescence and into emerging adulthood, as their sexual and gender identities, body weight, and experiences of weight-based victimization may change over time. Our study focused on 13- to-17-year-olds and cannot be generalized to younger or older LGBTQ individuals. As a point of comparison, HRC's 2012 "Growing up LGBT in America" report of over 10 000 LGBT adolescents had a higher representation of Hispanics and Blacks compared with our sample,[41] yet our sample had a substantial portion of youth who identified as biracial or multiracial (13%). These racial-ethnic differences reiterate that our study results pertain to those who responded to our survey and may not be generalizable to other populations of LGBTQ youth. The lack of a heterosexual cisgender comparison group also prevents direct comparisons of weight-based victimization between SGM and heterosexual adolescents. Finally, our study relied on self-reported responses of adolescents; some evidence has found that sexual minority youth underreport BMI,[42] so it is possible that misreporting of body weight in this manner could have resulted in fewer participants being accurately classified in overweight or obese BMI categories. Thus, objective measures for height and weight are ideal. Similarly, it is possible that SGM youth in our sample may have underreported weight-based victimization given that our survey questions did not inquire about different forms of victimization (eg, cyber-bullying versus verbal teasing) and/or if they perceived victimization related to their sexual orientation or gender identity as being more salient. It will be important for future research to explore different forms of weight-based victimization using more comprehensive measures, and how SGM youth perceive the severity of weight-based victimization relative to victimization they experience because of their sexual orientation or gender identity. Nevertheless, our study has important strengths, including a large, diverse sample of sexual minority adolescents, and novel insights about the extent and sources of weight-based victimization in adolescents with diverse sexual identities.

In conclusion, this large-scale examination of SGM minority adolescents indicates that weight-based victimization is a common experience across diverse sexual and gender identities and body weight categories. Our results emphasize the high percentage of adolescents across both established and emerging sexual identity groups reporting weight-based victimization from peers and family. While research on weight-based victimization and sexual identity have been primarily studied in isolation of each other, our findings highlight the importance of increased attention to the intersection of social identities related to body weight, sexual orientation, and gender identity in youth. These issues warrant attention not only in research, but also among parents, educators, and health providers who interact with adolescents, who should exercise heightened awareness of the vulnerability of weight-related mistreatment among SGM youth.

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R.W. conceptualized and designed the study, coordinated and supervised data collection, and critically reviewed the manuscript for important intellectual content. R.P. contributed to the conceptualization, design, and survey instruments of the study, drafted the initial

manuscript, and revised the manuscript. M.H. carried out the statistical analyses and contributed to writing and revising the manuscript. All authors approved the final manuscript as submitted and agree to be accountable for all aspects of the work.

CONFLICT OF INTEREST

No conflict of interest was declared.

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REFERENCES

1. Hales CM, Carroll MD, Fryar CDOC. Prevalence of obesity among adults and youth: United States, 2015–2016. *NCHS Data Brief*. 2017;288:1-8.
2. Bradshaw CP, Waasdorp TE, O'Brennan LM, Gulemetova M. Teachers' and education support professionals' perspectives on bullying and prevention: findings from a national education association study. *Sch Psychol Rev*. 2013;42(3):280-297.
3. Bucchianeri MM, Eisenberg ME, Neumark-Sztainer D. Weightism, racism, classism, and sexism: shared forms of harassment in adolescents. *J Adolesc Health*. 2013;53(1):47-53.
4. Waasdorp TE, Mehari K, Bradshaw CP. Obese and overweight youth: risk for experiencing bullying victimization and internalizing symptoms. *Am J Orthopsychiatry*. 2018;88(4):483-491.
5. Puhl RM, Luedicke J, DePierre JA. Parental concerns about weight-based victimization in youth. *Child Obes*. 2013;9(6):540-548.
6. Puhl RM, Latner JD, O'Brien K, Luedicke J, Forhan M, Danielsdottir S. Cross-national perspectives about weight-based bullying in youth: nature, extent and remedies. *Pediatr Obes*. 2016;11(4):241-250.
7. Puhl RM, Peterson JL, Luedicke J. Weight-based victimization: bullying experiences of weight loss treatment-seeking youth. *Pediatrics*. 2013;131(1):e1-e9.
8. Neumark-Sztainer D, Bauer KW, Friend S, Hannan PJ, Story M, Berge JM. Family weight talk and dieting: how much do they matter for body dissatisfaction and disordered eating behaviors in adolescent girls? *J Adolesc Health*. 2010;47(3):270-276.
9. Bucchianeri MM, Eisenberg ME, Wall MM, Piran N, Neumark-Sztainer D. Multiple types of harassment: associations with emotional well-being and unhealthy behaviors in adolescents. *J Adolesc Health*. 2014;54(6):724-729.
10. Eisenberg ME, Berge JM, Fulkerson JA, Neumark-Sztainer D. Associations between hurtful weight-related comments by family and significant other and the development of disordered eating behaviors in young adults. *J Behav Med*. 2012;35(5):500-508.
11. Haines J, Hannan PJ, Van Den Berg P, Eisenberg ME, Neumark-Sztainer D. Weight-related teasing from adolescence to young adulthood: longitudinal and secular trends between 1999 and 2010. *Obesity*. 2013;21(9):E428-E434.
12. Lampard AM, MacLehose RF, Eisenberg ME, Neumark-Sztainer D, Davison KK. Weight-related teasing in the school environment: associations with psychosocial health and weight control practices among adolescent boys and girls. *J Youth Adolesc*. 2014;43(10):1770-1780.
13. Juvonen J, Lessard LM, Schacter HL, Suchilt L. Emotional implications of weight stigma across middle school: the role of weight-based peer discrimination. *J Clin Child Adolesc Psychol*. 2017;46(1):150-158.
14. Puhl RM, Wall MM, Chen C, Bryn Austin S, Eisenberg ME, Neumark-Sztainer D. Experiences of weight teasing in adolescence and weight-related outcomes in adulthood: a 15-year longitudinal study. *Prev Med*. 2017;100:173-179.
15. Pont SJ, Puhl RM, Cook SR, Slusser W. Stigma experienced by children and adolescents with obesity. *Pediatrics*. 2017;140(6):e20173034.
16. Austin SB, Nelson LA, Birkett MA, Calzo JP, Everett B. Eating disorder symptoms and obesity at the intersections of gender, ethnicity, and sexual orientation in US high school students. *Am J Public Health*. 2013;103(2):16-22.
17. Austin SB, Ziyadeh NJ, Corliss HL, et al. Sexual orientation disparities in weight status in adolescence: findings from a prospective study. *Obesity*. 2009;17(9):1776-1782.
18. Katz-wise SL, Blood EA, Milliren CE, et al. Sexual orientation disparities in BMI among US adolescents and young adults in three race/ethnicity groups. *J of Obesity*. 2014;2014:1-8. https://doi.org/10.1155/2014/537242
19. Deputy NP, Boehmer U. Determinants of body weight among men of different sexual orientation. *Prev Med (Baltim)*. 2010;51(2):129-131.
20. Eliason MJ, Ingraham N, Fogel SC, et al. A systematic review of the literature on weight in sexual minority women. *Womens Health Issues*. 2015;25(2):162-175.
21. Jun HJ, Corliss HL, Nichols LP, Pazaris MJ, Spiegelman D, Austin SB. Adult body mass index trajectories and sexual orientation: The Nurses' health study II. *Am J Prev Med*. 2012;42(4):348-354.
22. Laska MN, Van Kim NA, Erickson DJ, Lust K, Eisenberg ME, Rosser BRS. Disparities in weight and weight behaviors by sexual orientation in college students. *Am J Public Health*. 2015;105(1):111-121.
23. Vankim NA, Erickson DJ, Eisenberg ME, Lust K, Rosser BRS, Laska MN. Weight-related disparities for transgender college students. *Health Behav Pol Rev*. 2014;1(2):161-171.
24. Streed CG, McCarthy EP, Haas JS. Association between gender minority status and self-reported physical and mental health in the United States. *JAMA Intern Med*. 2017;177(8):1210-1212.
25. Klaver M, Dekker MJ, de Mutsert R, Twisk JWR, den Heijer M. Cross-sex hormone therapy in transgender persons affects total body weight, body fat and lean body mass: a meta-analysis. *Andrologia*. 2017;49(5):e12660.
26. Garnett BR, Masyn KE, Austin SB, Miller M, Williams DR, Viswanath K. The intersectionality of discrimination attributes and bullying among youth: an applied latent class analysis. *J Youth Adolesc*. 2014;43(8):1225-1239.
27. White AE, Moeller J, Ivcevic Z, Brackett MA. Gender identity and sexual identity labels used by U.S. high school students: a co-occurrence network analysis. *Psychol Sex Orientat Gend Divers*. 2018;5(2):243-252.
28. Watson RJ, Wheldon CW, Puhl RM. Evidence of diverse identities in a large national sample of sexual and gender minority youth. *J Res Adolesc*. https://doi.org/10.1111/jora.12488
29. Kuczmarski R, Ogden C, Guo S, et al. 2000 CDC Growth Charts for the United States: methods and development. *Vital Heal Stat*. 2002;11(246):1-203.
30. 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.
31. Neumark-Sztainer D, Wall M, Perry C, Story M. Correlates of fruit and vegetable intake among adolescents: findings from Project EAT. *Prev Med*. 2003;37(3):198-208.
32. Thompson JK, Cattarin J, Fowler H, 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.

33. 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.
34. Kull RM, Kosciw JG, Greytak EA. From statehouse to schoolhouse: anti-bullying policy efforts in U.S. states and school districts. New York; 2015. https://www.glsen.org/sites/default/files/GLSEN%20%20From%20Statehouse%20to%20Schoohouse%202015_0.pdf
35. Snapp SD, Watson RJ, Russell ST, Diaz RM, Ryan C. Social support networks for LGBT young adults: low cost strategies for positive adjustment. *Fam Relat*. 2015;64(3):420-430.
36. Ryan CL, Huebner D, Diaz RM, Sanchez J. Family rejection as a predictor of negative health outcomes in White and Latino lesbian, gay, and bisexual young adults. *Pediatrics*. 2009;123(1):346-352.
37. Sterzing PR, Hong JS, Gartner RE, Auslander WF. Child maltreatment and bullying victimization among a community-based sample of sexual minority youth: the meditating role of psychological distress. *J Child Adolesc Trauma*. 2016;9(4):283-293.
38. Zuba A, Warschburger P. The role of weight teasing and weight bias internalization in psychological functioning: a prospective study among school-aged children. *Eur Child Adolesc Psychiatry*. 2017;26(10):1245-1255.
39. Savin-Willams RC. A critique of research on sexual-minority youths. *J Adolesc*. 2001;24(1):5-13.
40. Institute of Medicine (IOM). *The Health of Lesbian, Gay, Bisexual, and Transgender People: Building a Foundation for Better Understanding*. Washington, DC: Institute of Medicine; 2011.
41. Human Rights Campaign. Growing up LGBT in America: HRC youth survey report and key findings. 2012. https://assets2.hrc.org/files/assets/resources/Growing-Up- LGBT-in America_Report.pdf (Accessed 9 September 2018).
42. Richmond TK, Walls CE, Bryn Austin S. Sexual orientation and bias in self-reported BMI. *Obesity*. 2012;20(8):1703-1709.

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