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A longitudinal investigation of perceived weight status as a mediator of sexual orientation disparities in maladaptive eating behaviors

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Abstract

Sexual minority adolescents are more likely than heterosexual peers to engage in maladaptive eating behaviors such as restrictive dieting. However, prior studies relied on cross-sectional data and did not test potential mechanisms. This study examined longitudinal associations between adolescent sexual minority status and three maladaptive eating behaviors (restrictive dieting, diet pill use, and drug-related dieting) in young adulthood and tested higher perceived weight status as a mediator of observed disparities. Data were drawn from Waves 2 (11th grade in 2010/2011) to 7 (4 years post high school in 2015/2016) of the NEXT Generation Health Study, a U.S. national longitudinal cohort of adolescents ($n = 1925$). Logistic regression analyses revealed that, relative to heterosexual females, sexual minority females were more likely to report any restrictive dieting (extreme food intake restriction) in the past year (62.9% vs. 37.0%; Adjusted Odds Ratio = 2.26, 95% CI = 1.07, 4.76). Associations between sexual minority status and diet pills use or drug-related dieting were not found. Results from structural equation modeling indicated that higher perceived weight status was a significant mediator of the association between sexual minority status and restrictive dieting among females. These findings highlight higher perceived weight status as an important cognitive mechanism explaining why sexual minority females are at heightened risk for restrictive dieting in young adulthood. To optimally inform prevention efforts, additional research is needed to test the extent to which minority stressors may shape weight perceptions and their contribution to maladaptive and disordered eating behaviors among sexual minority adolescents.

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Keywords

LGBQ; weight perception; dieting; disordered eating; mediation; longitudinal research

Introduction

Individuals who are attracted to the same sex, both sexes, or are questioning their sexual orientation (i.e., sexual minorities) may have elevated risk for maladaptive or disordered eating behaviors such as restrictive dieting (extreme food intake restriction) and diet pill use (Austin et al., 2004; Diemer, Grant, Munn-Chernoff, Patterson, & Duncan, 2015). During adolescence, perceived overweight has been identified as a stronger correlate of mental health problems and excessive school absenteeism than objective overweight (Duncan et al., 2017; Lankinen, Fröjd, Marttunen, & Kaltiala-Heino, 2018). For sexual minority youth, minority stressors such as internalized homophobia, expectation of rejection, and peer victimization could lead to a more negative perception of one's own body image and weight status (Miller & Luk, 2018). Given these findings, the primary goal of the current study is to investigate whether higher perceived weight status is one reason why sexual minority adolescents more frequently engage in maladaptive eating behaviors in young adulthood after controlling for baseline Body Mass Index (BMI). If identified as a significant mediator, higher perceived weight status could be considered a potentially modifiable intervention target to reduce sexual orientation disparities in maladaptive eating behaviors.

Sexual minority adolescents generally face increased rates of maladaptive eating behaviors relative to their heterosexual peers (Austin et al., 2004; Calzo et al., 2015; French, Story, Remafedi, Resnick, & Blum, 1996). However, it is unclear if these disparities extend into young adulthood and whether sexual minority adolescents are at similarly elevated risk for different types of maladaptive eating behaviors. Evidence from cross-sectional studies conducted among adolescents and young adults suggests that sexual orientation disparities in maladaptive eating behaviors may be larger during adolescence (Austin et al., 2004; Laska et al., 2015; Lipson & Sonnevile, 2017; Watson, Adjei, Saewyc, Homma, & Goodenow, 2017), possibly due to higher minority stress during this stage as adolescents develop their sexual identity (Hatzenbuehler, 2009; Meyer, 2003; Miller & Luk, 2018). Accordingly, it is important to longitudinally track adolescents into young adulthood and investigate whether risks of specific maladaptive eating behaviors among sexual minorities are also elevated during young adulthood.

The current prospective investigation focuses on three types of diet-related maladaptive eating behaviors - restrictive dieting, diet pill use, and drug-related dieting (use of cigarettes/nicotine to control appetite or dieting to facilitate alcohol intoxication). Generally, adolescents who perceive themselves as overweight may have excessive desire to lose weight and therefore adopt maladaptive dieting behaviors (Atlantis, Barnes, & Ball, 2008). Data from the Massachusetts Youth Risk Behavior Survey indicated that adolescent sexual minority males and females both reported more unhealthy weight control behaviors than heterosexual peers, (Hadland, Austin, Goodenow, & Calzo, 2014). Recent cross-sectional data from the NEXT Generation Health Study further showed that adolescent sexual

minority females are more likely to perceive themselves as being overweight and overestimate their weight status compared to heterosexual females (Luk et al., 2018). As perceived overweight has also been linked to increased odds of fasting, skipping meals, and diet pill use (Chung, Perrin, & Skinner, 2013; Talamayan, Springer, Kelder, Gorospe, & Joye, 2006), the possibility that higher perceived weight status would mediate the associations between sexual minority status and maladaptive eating behaviors need to be empirically evaluated.

Sex differences in disordered eating and weight-related behaviors by sexual orientation have been found in prior studies (Miller & Luk, 2018). For example, among adolescents in the Growing Up Today Study (GUTS), sexual minority males were more likely to be lean-concerned relative to heterosexual males (Calzo et al., 2015). In another analysis of data from GUTS, gay/bisexual males were more concerned with trying to look like boys/men in media than heterosexual males, whereas lesbian/bisexual females were less concerned with trying to look like girls/women in media than heterosexual females (Austin et al., 2004). Moreover, the associations between sexual minority status with restrictive eating and diet pill use may vary by sex (Miller & Luk, 2018). Together, these studies highlight the importance of exploring potential sex differences in the mediating role of perceived weight status on sexual minority status and maladaptive eating behaviors.

Utilizing a contemporary cohort of U.S. adolescents, the current study has three goals. First, we examined prospective associations between adolescent sexual minority status and young adulthood maladaptive eating behaviors six years later. Second, we evaluated perceived weight status as a mediator of these prospective associations. Third, we examined whether the mediational pathways differed by sex.

Method

Sample

The NEXT Generation Health Study (NEXT) is a 7-year longitudinal study of 2785 10th graders who were followed annually from 2009/2010 to 2015/2016. A 3-stage stratified design was used to recruit a nationally representative sample of U.S. high school students. Sexual orientation was assessed in Wave 2, when participants were in 11th grade ($n = 2439$; 87.6% of the full sample; mean age = 17.2, SD = 0.51). The final analytic sample included 1925 youth (78.9% of Wave 2 sample; mean age = 22.6, SD = 0.52) who provided valid responses to race/ethnicity, family affluence, self-reported height and weight, sexual orientation, and maladaptive eating behaviors at Wave 7. Parents provided written consent for adolescent participation; upon turning 18 years of age, participants provided consent. The study was approved by the Institutional Review Board of the *Eunice Kennedy Shriver* National Institute of Child Health and Human Development.

Measures

Sexual Orientation (Wave 2)—Sexual attraction is the most important dimension of sexual orientation during adolescence (Friedman et al., 2004; Saewyc, 2011). Thus, we adapted a single item measure of sexual attraction from the Seattle Teen Health Risk Survey

1995 to assess adolescent sexual orientation (Hillard, Peterfreund, & Cheadle, 1996). Participants were asked to choose which of the following best describe their sexual orientation: (1) “attraction to opposite gender,” (2) “attraction to same gender,” (3) “attraction to both genders,” and (4) “questioning.” Table 1 presents frequencies and percentages of responses. Due to low frequencies, those endorsing any same-sex or questioning attraction were combined for analyses.

Perceived Weight Status (Waves 3–6)—A single-item with test-retest agreement of 90% was taken from the Project EAT (Eating and Activity in Teens) Study to measure perceived weight status (Neumark-Sztainer et al., 2012). Participants were asked: “At this time do you feel that you are...” (1) “very underweight,” (2) “somewhat underweight,” (3) “about the right weight,” (4) “somewhat overweight,” or (5) “very overweight.” Perceived weight status was constructed as a latent variable using this item across four time points. Each item was treated as a continuous indicator, with a higher latent mean score indicating higher perceived weight status.

Maladaptive Eating Behaviors (Wave 7)—Maladaptive eating behaviors were assessed using a list of nine different unhealthy and extreme weight control behaviors taken from the Project EAT study (Neumark-Sztainer et al., 2012). The test-retest agreement of these items ranged from 85% for unhealthy behaviors to 96% for extreme weight control behaviors. Participants were asked: “Have you done any of the following things in order to lose weight or keep from gaining weight during the past year?” In the current study, restrictive dieting was measured by any positive response to the following three items: “fasted,” “ate very little food”, and “skipped meals.” Diet pills and food substitute was measured by any positive response to the following four items: “took diet pills,” “used laxative,” “used diuretics (water pills),” and “used food substitute (powder/special drink).” Drug-related dieting was measured by any positive response to the last two items: “ate very little food specifically because I planned to drink alcohol afterwards” and “smoked more cigarettes.”

Covariates—Participants reported race/ethnicity, which was categorized into 4 groups: White, African American, Hispanic and other. The Health Behaviour School-Aged Family Affluence Scale was used to measure socioeconomic inequalities with items such as family car and computer ownership and frequency of family holidays (Currie et al., 2008). Body Mass Index was calculated based on participants’ report of their weight without clothes in pounds and height without shoes in feet and inches. To aid meaningful comparisons among adolescents, we computed the BMI *z*-score (BMI-*z*) based on the Centers for Disease Control and Prevention (CDC) growth charts (Kuczmarski, 2000) to adjust for age and sex differences. When available, BMI-*z* scores at Wave 2 were used (for 95% of participants); for 97 (5%) participants who had missing BMI-*z* at Wave 2, we used their BMI-*z* scores at Wave 1 to represent their baseline BMI-*z*.

Statistical Analyses

Sexual orientation disparities in three types of maladaptive behaviors were examined using unadjusted and adjusted (controlling for race/ethnicity, family affluence, and BMI-*z* assessed at Wave 1 or Wave 2, and the average perceived weight status score across Waves 3–6)

logistic regression analyses, conducted separately for males and females. To examine the mediating role of perceived weight status, we modeled perceived weight status across Waves 3 to 6 as a latent variable within a structural equation modeling (SEM) framework. Multiple-group analyses were conducted to evaluate sex differences. Mediated effects were examined using the product of coefficients with bootstrapped confidence intervals. The Robust Weighted Least Squares (WLSMV) estimator with a probit link was used to model maladaptive eating behaviors as binary outcomes. All participants reported at least one wave of data on perceived weight status, and the vast majority of participants (97.6%) had at least two waves of data on perceived weight status. Missing data in higher perceived weight status was handled using the pairwise present method under the missing at random with respect to covariates (MARX) assumption (Asparouhov & Muthén, 2010). Logistic regression analyses were conducted in STATA 14, and mediation analyses were conducted in Mplus 8. All analyses accounted for the complex survey design of the NEXT study.

Results

Demographic characteristics for the Wave 2 NEXT sample and the analytic sample are largely similar (Table 1). Results from logistic regression analyses are presented in Table 2. Relative to heterosexual males, sexual minority males did not report higher rates of restrictive dieting (14.5% vs. 22.3%), diet pills and food substitutes (3.8% vs. 6.5%), or drug-related dieting (5.3% vs. 7.8%). In contrast, sexual minority females were more likely than heterosexual females to report any restrictive dieting in the past year (62.9% vs. 37.0%; Odds Ratio = 2.89, 95% CI = 1.45, 5.73). This association remained significant after controlling for covariates (Adjusted Odds Ratio = 2.26, 95% CI = 1.07, 4.76). Sexual minority females did not report higher rates of diet pills and food substitutes (20.6% vs. 23.4%) or drug-related dieting (8.3% vs. 12.0%) than heterosexual females.

Means and standard deviations of BMI-z at study baseline and perceived weight status across Wave 2 to Wave 6 are presented in Table 3. To test mediation by perceived weight status and moderation by sex, a multiple-group SEM was applied. Model fit statistics and chi-square difference tests from nested SEMs are presented in Table 4. For all three models, model fit was excellent when the direct and indirect paths were freed across groups, and model fit worsened when these paths were constrained to be equal across male and female participants. The chi-square difference tests further provided evidence for moderation by sex. Accordingly, all final models were estimated with direct and indirect paths from sexual orientation to maladaptive eating behaviors freed across groups.

Results from mediation analyses are presented in Table 5, in which the standardized regression coefficients, the direct and indirect path estimates, and the bootstrapped 95% CIs are reported separately for males and females. There was no evidence for mediation among males. Among females, indirect associations were observed for all three maladaptive eating behaviors. Relative to heterosexual females, sexual minority females were more likely to report higher perceived weight status ($\beta = 0.17$, 95% CI = 0.09, 0.27), which in turn was associated with greater probability of restrictive dieting ($\beta = 0.42$, 95% CI = 0.34, 0.50), diet pills and food substitutes ($\beta = 0.47$, 95% CI = 0.35, 0.59), and drug-related dieting ($\beta = 0.39$, 95% CI = 0.25, 0.49). Standardized path coefficients of the mediation analyses

involving sexual minority status and restrictive dieting are illustrated in Figure 1. It is notable that for the latter two outcomes, there was an absence of significant total effect of sexual minority status despite significant indirect associations. As reported in Table 5, this is likely due to the opposite signs in the direct and indirect effects of sexual minority status on diet pills and food substitutes and drug-related dieting, leading to no overall associations between sexual minority status and these outcomes (MacKinnon, Krull, & Lockwood, 2000).

Discussion

Extending prior research which identified perceived overweight as a mediator of the association between weight status and unhealthy eating behaviors (Kim, Cho, Cho, & Lim, 2009; Saules et al., 2009), the current longitudinal study examined higher perceived weight status as a potential mediator of sexual orientation disparities in maladaptive eating behaviors after controlling for baseline BMI. Our prospective analyses indicate that sexual minority status during adolescence is associated with restrictive dieting among females only, with almost 63% of sexual minority females reporting any restrictive dieting four years post high school. Sexual minority females were more likely to perceive themselves as being overweight, and this in turn was associated with greater probability of restrictive dieting as well as diet pill use and drug-related dieting. These findings highlight higher perceived weight status as a key mechanism through which sexual minority status may confer risk for subsequent maladaptive eating behaviors during the transition from adolescence into young adulthood.

The absence of associations of sexual minority status with higher perceived weight status or maladaptive eating behaviors among males was somewhat unexpected (Dakanalis et al., 2012; Smith, Hawkeswood, Bodell, & Joiner, 2011). Prior studies indicate that, during adolescence, sexual minority males tend to be more lean-concerned than heterosexual males (Calzo et al., 2015; Miller & Luk, 2018). Our prospective analyses examining young adulthood maladaptive eating behaviors as outcomes did not show any sexual orientation disparities among males, reflecting possible developmental variations in which this disparity is reduced in emerging adulthood. Alternatively, the higher perceived weight status measure utilized in this study may not capture the type of weight concerns that sexual minority males have, which may be more specific to leanness and/or a desire to look like men in the media (Austin et al., 2004; Calzo et al., 2015). Future studies with more comprehensive measurement of body image and satisfaction are needed to further investigate our current findings.

The lack of associations between sexual minority status and diet pill use or drug-related dieting indicates that sexual orientation disparities in maladaptive eating behaviors during young adulthood may be limited to weight control behaviors that are more frequently reported. These findings could be useful in guiding prevention and intervention efforts to focus more on common restrictive dieting behaviors in the initial phase, particularly among sexual minority females. As higher perceived weight status was found to be a risk factor for maladaptive eating behaviors among both males and females (irrespective of sexual minority status), programs to help address inaccurate body perception and promote positive body

image would be beneficial for all adolescents. Additional research is needed to identify sexual minority specific risk factors, including minority stressors and negative media influence on body image and weight perception (Miller & Luk, 2018).

This study has several strength and limitations. Notable strengths include the use of longitudinal data to discern the temporality of associations, statistical control for important confounders such as BMI, and the latent variable modeling approach to minimize measurement error in the estimation of higher perceived weight status. Additionally, the use of a contemporary cohort of U.S. adolescents provides current and nationally representative prevalence estimates of maladaptive eating behaviors. Limitations include the use of a single sexual attraction item to measure sexual orientation, limited sample size for sexual orientation subgroup analyses, and the reliance of single item measures for weight perception and maladaptive eating behaviors. Moreover, binge eating, loss of control eating, and purging were not assessed and data on BMI-z was not collected at the later waves of the NEXT study. Future studies could address these limitations by examining multiple dimensions of sexual orientation (attraction, behavior, and identity), exploring mechanisms for sexual minority subgroups using larger prospective datasets, examining objective measure of body weight as a competing mediation pathway, and utilizing more comprehensive measures of maladaptive eating behaviors.

Despite these limitations, this study provides valuable information about risk of maladaptive eating behaviors during young adulthood according to adolescent sexual minority status. Our findings provide recent prevalence estimates restrictive dieting, diet pill use, and drug-related dieting among U.S. sexual minority and heterosexual adolescents. We further highlight higher perceived weight status as a cognitive mechanism linking sexual minority status maladaptive eating behaviors in young adulthood among females. Future research can expand on our mediation model by testing whether emotional dysregulation and the experience of minority stress would reinforce maladaptive weight behaviors (Miller & Luk, 2018). A comprehensive examination of a multiple-mediator model across development would optimally inform prevention and intervention efforts by targeting the most salient mediators leading to maladaptive eating behaviors among sexual minority youth.

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Highlights

- Sexual minority females were more likely to report past year restrictive dieting than heterosexual females.
- Direct associations between sexual minority status and diet pills use or drug-related dieting were not found.
- Perceived weight status was a significant mediator of the association between sexual minority status and restrictive dieting among females.
- Perceived weight status is an important cognitive mechanism explaining why sexual minority females are at heightened risk
- Interventions may target factors that shape weight perception among sexual minority females.

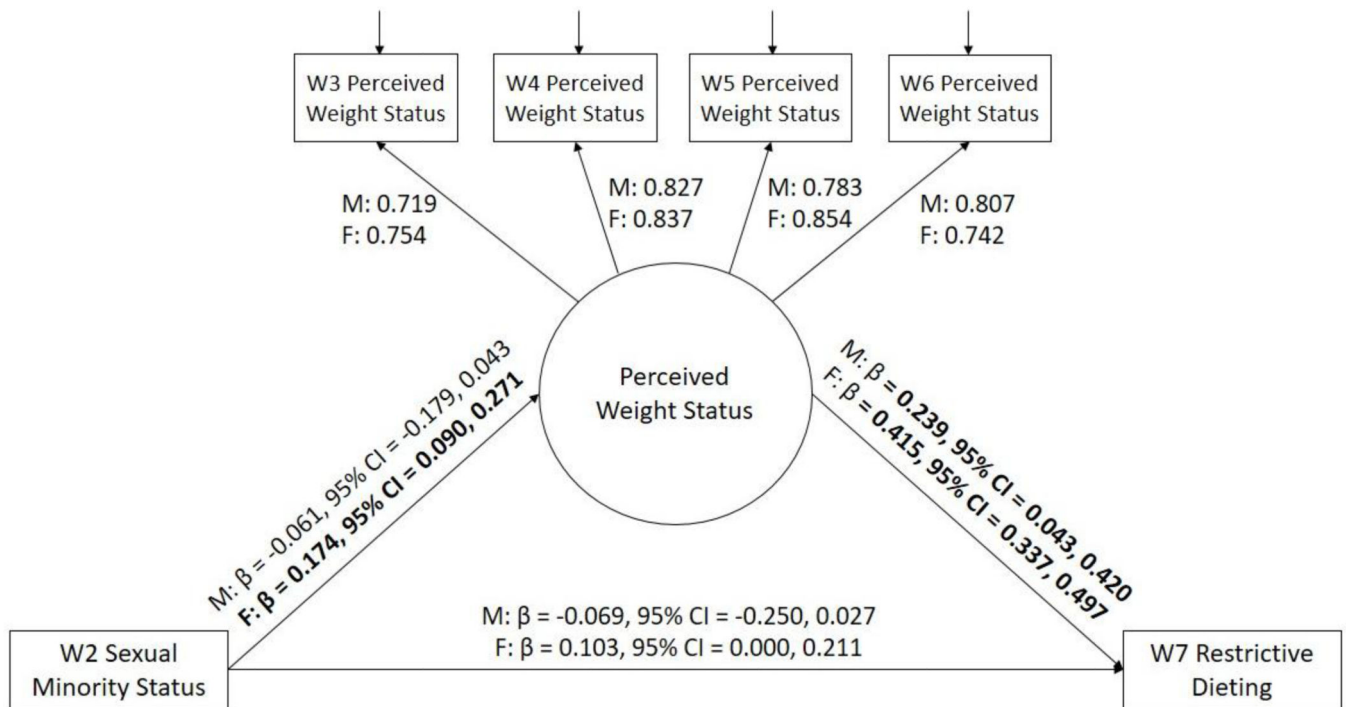


Figure 1.

Structural equation model testing perceived weight status as a mediator of sexual orientation differences in restrictive dieting

Note. All coefficients were standardized. The arrow from sexual minority status to perceived weight status represents the coefficients for the association between sexual minority status and perceived weight status. The arrow from perceived weight status to restrictive dieting represents the coefficients for the association between perceived weight status and restrictive dieting, controlling for sexual minority status and covariates. The coefficient from sexual minority status to restrictive dieting quantifies the direct association between sexual minority status and restrictive dieting not through perceived weight status. W2 = Wave 2; W7 = Wave 7; M = Males; F = Females.

Table 1.

Demographic characteristics for the Wave 2 NEXT sample and the analytic sample

	Wave 2 NEXT sample (n = 2439)						Analytic sample (n = 1925)					
	Overall			Overall			Males (n = 795)			Females (n = 1130)		
	Frequency	Percent		Frequency	Percent		Frequency	Percent		Frequency	Percent	
Sex												
Male	1076	44.9%		795	41.0%	--	--	--	--	--	--	--
Female	1363	55.1%		1130	59.0%	--	--	--	--	--	--	--
Race/Ethnicity												
White	986	58.6%		819	59.2%		346	60.8%		473	58.1%	
African American	611	17.5%		461	18.1%		162	14.6%		299	20.5%	
Hispanic	715	19.6%		550	18.7%		251	19.2%		299	18.4%	
Other	120	4.3%		95	4.0%		36	5.5%		59	3.0%	
Family affluence												
Low	775	23.1%		590	22.8%		238	22.9%		352	22.8%	
Medium	1148	49.8%		907	50.3%		388	53.4%		519	48.1%	
High	516	27.1%		428	26.9%		169	23.6%		259	29.1%	
Sexual orientation												
Attracted to opposite gender	2196	93.7%		1767	93.8%		753	96.6%		1014	91.9%	
Attracted to same gender	45	1.2%		36	1.4%		19	1.8%		17	1.1%	
Attracted to both genders	119	3.7%		93	3.7%		15	0.8%		78	5.7%	
Questioning	42	1.4%		29	1.0%		8	0.7%		21	1.3%	

Note. Unweighted frequencies and weighted percentages are presented. Wave 2 data were collected in 2010/2011 in the United States.

Table 2.

Maladaptive eating behaviors at Wave 7 by sexual orientation at Wave 2

		Males (<i>n</i> = 795)					
		Weighted percentages		Unadjusted		Adjusted	
	Heterosexual	Sexual minority	Odds Ratio	95% CI	Odds Ratio	95% CI	
1. Restrictive dieting	22.3%	14.5%	0.59	0.18, 1.95	0.48	0.14, 1.61	
2. Diet pills and food substitutes	6.5%	3.8%	0.57	0.13, 2.41	0.61	0.11, 3.36	
3. Drug-related dieting	7.8%	5.3%	0.66	0.19, 2.34	0.33	0.06, 1.85	
		Females (<i>n</i> = 1130)					
		Weighted percentages		Unadjusted		Adjusted	
	Heterosexual	Sexual minority	Odds Ratio	95% CI	Odds Ratio	95% CI	
1. Restrictive dieting	37.0%	62.9%	2.89	1.45, 5.73	2.26	1.07, 4.76	
2. Diet pills and food substitutes	23.4%	20.6%	0.85	0.36, 2.01	0.56	0.20, 1.58	
3. Drug-related dieting	12.0%	8.3%	0.67	0.32, 1.41	0.44	0.16, 1.22	

Note. Race/ethnicity, family affluence, baseline BMI-*z*, and perceived weight status were included as covariates in the adjusted models. Significant differences by sexual orientation ($p < 0.05$) are in **bold**. Wave 2 data were collected in 2010/2011 in the United States, and Wave 7 data were collected in 2015/2016 in the United States.

Table 3. Means and standard deviations of BMI-z at study baseline and perceived weight status across Wave 2 to Wave 6

	Observations	Males			Females		
		Overall	LGBQ	Heterosexual	LGBQ	Heterosexual	Heterosexual
		<i>M (SD)</i>	<i>M (SD)</i>	<i>M (SD)</i>	<i>M (SD)</i>	<i>M (SD)</i>	<i>M (SD)</i>
Baseline BMI-z	1925	0.48 (1.09)	0.08 (1.50)	0.49 (1.21)	0.91 (1.21)	0.45 (0.97)	
Wave 2 perceived weight status	1909	3.30 (0.74)	2.83 (0.98)	3.16 (0.68)	3.83 (0.91)	3.37 (0.72)	
Wave 3 perceived weight status	1802	3.34 (0.74)	3.07 (1.18)	3.18 (0.68)	3.91 (0.85)	3.41 (0.73)	
Wave 4 perceived weight status	1705	3.40 (0.73)	2.99 (0.89)	3.23 (0.68)	3.85 (0.89)	3.48 (0.71)	
Wave 5 perceived weight status	1719	3.40 (0.75)	3.00 (0.98)	3.19 (0.72)	3.85 (0.82)	3.50 (0.71)	
Wave 6 perceived weight status	1821	3.43 (0.72)	3.01 (0.85)	3.21 (0.62)	3.89 (0.96)	3.55 (0.71)	

Note. *M* = Mean; *SD* = Standard Deviation.

Table 4.

Model fit statistics and chi-square difference tests from nested multiple-group structural equation models

Models	χ^2	df	P	RMSEA (90% CIs)	CFI	TLI	WRMR	Difference Test	
								χ^2	df
Restrictive dieting									
1. Direct and indirect paths freed	69.535	53	0.0633	0.018 (0.000, 0.029)	0.979	0.973	1.102		
2. Direct and indirect paths fixed	99.688	56	0.0003	0.028 (0.019, 0.037)	0.946	0.932	1.548	22.115	3 0.0001
Diet pills and food substitutes									
1. Direct and indirect paths freed	68.748	53	0.0717	0.018 (0.000, 0.028)	0.981	0.974	1.100		
2. Direct and indirect paths fixed	92.018	56	0.0017	0.026 (0.016, 0.035)	0.955	0.944	1.450	16.867	3 0.0008
Drug-related dieting									
1. Direct and indirect paths freed	78.146	53	0.0139	0.022 (0.010, 0.032)	0.966	0.955	1.234		
2. Direct and indirect paths fixed	118.161	56	0.0000	0.034 (0.025, 0.042)	0.916	0.895	1.755	30.743	3 0.0000

Note. Nested models constraining direct and indirect paths to be equal across male and female participants worsened model fit. Chi-square difference tests were also significant, indicating sex differences in the direct and indirect paths examined. Thus, these three paths were freely estimated across groups in the final models.

Table 5.

Indirect and direct effects of sexual minority status on maladaptive eating behaviors through perceived weight status by sex

		Males (<i>n</i> = 795)			Females (<i>n</i> = 1130)		
Paths from sexual minority status to perceived weight status to:		<i>b</i> for path a (95% CI)	<i>b</i> for path b (95% CI)	Direct effect (95% CI)	Indirect effect (95% CI)		
1. Restrictive Dieting		-0.061 (-0.179, 0.043)	0.239 (0.043, 0.420)	-0.069 (-0.250, 0.027)	-0.015 (-0.073, 0.007)		
2. Diet Pills and Food Substitutes		-0.061 (-0.179, 0.043)	0.400 (0.221, 0.607)	-0.043 (-0.557, 0.065)	-0.024 (-0.076, 0.012)		
3. Drug-Related Dieting		-0.061 (-0.179, 0.043)	-0.011 (-0.277, 0.293)	-0.075 (-0.553, 0.043)	0.001 (-0.023, 0.028)		
Paths from sexual minority status to perceived weight status to:		<i>b</i> for path a (95% CI)	<i>b</i> for path b (95% CI)	Direct effect (95% CI)	Indirect effect (95% CI)		
1. Restrictive Dieting		0.174 (0.090, 0.271)	0.415 (0.337, 0.497)	0.103 (0.000, 0.211)	0.072 (0.034, 0.124)		
2. Diet Pills and Food Substitutes		0.175 (0.090, 0.271)	0.470 (0.347, 0.593)	-0.093 (-0.228, 0.032)	0.082 (0.038, 0.144)		
3. Drug-Related Dieting		0.175 (0.091, 0.271)	0.377 (0.250, 0.490)	-0.114 (-0.249, 0.009)	0.066 (0.035, 0.119)		

Note. Significant associations were in **bold**.