SEXUAL AND GENDER MINORITY (SGM) ADOLESCENTS' DISORDERED EATING: UNDERSTANDING GENERAL AND SGM-SPECIFIC RISK AND PROTECTIVE FACTORS

by

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ABSTRACT

Objective: Sexual and gender minority (SGM) adolescents are uniquely vulnerable to disordered eating, yet existing research has primarily considered their experiences under a singular "LGBTQ+" umbrella. The current study considers how general psychological factors (depressive symptoms, stress, and self-esteem) and SGM-specific factors (adolescents' feelings about their SGM identity) are associated with disordered eating. Additionally, we examine whether these factors differently affect sexual minority and gender minority adolescents. **Method:** SGM adolescents in the United States (N = 8,814; 65.0% sexual minority; 43.7% cisgender female; 66.9% White; M_{age} = 15.6 years) reported their disordered eating, depressive symptoms, stress, self-esteem, and feelings about their SGM identity on an anonymous, online survey. **Results:** Transmasculine adolescents reported the highest rates of caloric restriction, taking diet pills, purging, and binge eating; transfeminine adolescents reported the highest rates of taking laxatives. Depressive symptoms and stress were risk factors for disordered eating, whereas self-esteem served as a protective factor. Positive feelings about one's SGM identity were associated with lower odds of caloric restriction and purging only among gender minority adolescents. Openness about one's SGM identity was associated with lower odds of binge eating only among sexual minority adolescents. **Discussion:** This study is among the first to consider how SGM-specific factors influence SGM adolescents' likelihood to engage in disordered eating. Findings highlight important differences in the development of disordered eating between sexual and gender minority youth. Results suggest that clinicians working

with SGM youth consider how improving adolescents' feelings about their SGM identity may reduce risk for disordered eating.

Chapter 1

INTRODUCTION

Disordered eating behaviors are relatively common among sexual and gender minority (SGM) adolescents. Adolescents who engage in these behaviors are at increased risk for eating disorders (Neumark-Sztainer et al., 2011), a class of mental health disorders that disproportionately affect SGM populations (Connolly et al., 2016; Parker & Harriger, 2020). "SGM" is an umbrella term that refers to any adolescent who identifies with a non-heterosexual (e.g., lesbian, gay, bisexual) and/or non-cisgender (e.g., transgender, nonbinary, genderqueer) identity, including those who identify as both sexual minority and gender minority. Despite evidence of elevated rates of disordered eating, risk and protective factors related to adolescents' experiences of being SGM remain largely unexamined. Therefore, it is critical to examine the factors – both general and SGM-specific – related to disordered eating among SGM adolescents, and how they may differentially affect adolescents with a sexual or gender minority identity.

High rates of disordered eating have been documented among SGM adolescents. Nationally representative data from adolescents in the U.S. estimate that one-third of sexual minority adolescents engage in disordered eating (Hadland et al., 2014). Fasting, purging, and diet pill use appear to be particularly common among sexual minority male adolescents (Calzo et al., 2018; Miller & Luk, 2019), and sexual

minority female adolescents report greater laxative use, purging, and binge eating than heterosexual girls (Calzo et al., 2016, 2018). Furthermore, a recent nationwide study among adolescents aged 14-18 in the U.S. found that gender minority adolescents engaged in greater caloric restriction than cisgender adolescents (Roberts et al., 2021) and a representative sample of high schoolers in Massachusetts (U.S.) documented higher rates of fasting, diet pill and laxative use among gender minority adolescents than cisgender male adolescents (Guss et al., 2017). According to a study of gender minority adolescents and young adults aged 14-25 in Canada, approximately 48% engaged in disordered eating (R. J. Watson et al., 2017). Taken together, elevated rates of disordered eating among SGM youth warrant further examination into why these behaviors occur.

Stress, depressive symptoms, and self-esteem have been proposed as general factors contributing to disordered eating during adolescence, though they have primarily been studied among heterosexual, cisgender samples. Stress is considered an important factor for the development of eating disorders during adolescence (Ball & Lee, 2000; Rojo et al., 2006), and depressive symptoms have been shown to both longitudinally co-occur with disordered eating (Sharpe et al., 2018) and to longitudinally predict it (Ferreiro et al., 2012). Low self-esteem is considered a universal risk factor for eating disorders (Colmsee et al., 2021) as it increases the risk for body dissatisfaction (Espinoza et al., 2019). Together, stress, depressive symptoms, and self-esteem account for approximately 47-56% of the variance in adolescents' body image, an estimate calculated from a study of Australian

adolescents (Murray et al., 2011). These general psychological factors may uniquely affect SGM youth, leading to elevated rates of disordered eating.

Compared to their heterosexual, cisgender peers, SGM adolescents experience chronic daily stressors related to their minority identity status, contributing to disproportionate rates of negative mental health outcomes (Institute of Medicine, 2011). Minority stress theory, a conceptual framework for understanding how these chronic stressors cause mental health problems for sexual (Meyer, 2003; V. R. Brooks, 1981) and gender (Hendricks & Testa, 2012) minority populations, explains the association between chronic life stressors and increased incidence of disordered eating among SGM adolescents (Miller & Luk, 2019; Parker & Harriger, 2020). Chronic experiences of rejection and discrimination increase SGM adolescents' levels of stress and depressive symptoms (Connolly et al., 2016; Marshal et al., 2011) while lowering self-esteem (McDonald, 2018; Röder et al., 2018). Sexual minority (Marshal et al., 2011, 2013) and gender minority (Connolly et al., 2016) adolescents report greater depressive symptoms than heterosexual, cisgender adolescents. Furthermore, SGM adolescents' self-esteem is likely impacted by the chronic life stressors they experience, as environments with low social support are associated with lower self-esteem (McDonald, 2018; Röder et al., 2018). Therefore, SGM youth appear highly affected by stress, depressive symptoms, and low self-esteem—all associated with increased risk for disordered eating.

Beyond general psychological factors, relatively little is understood about whether SGM adolescents' perception of their identity may influence their risk for disordered eating. For example, SGM adolescents who are more accepting of their

identity may be at lower risk, showing lower levels of internalized homophobia, biphobia, or transphobia. Research with sexual minority women suggests that being open about one's identity is associated with improved body image (Mason et al., 2018). Additionally, adolescents in supportive social environments may have greater access to SGM resources and the larger SGM community, potentially improving their wellbeing (Parker & Harriger, 2020). For SGM adolescents, social support can decrease the risk for disordered eating through reductions in depressive symptoms (Colvin et al., 2019), decreased psychological distress (Birkett et al., 2015), and increased self-esteem (McDonald, 2018). Therefore, it is important to consider how SGM-specific factors, such as SGM adolescents' social environments and perceptions of their identity, could impact the incidence of disordered eating.

While research has highlighted general and, to a lesser degree, SGM-specific factors associated with disordered eating, it remains unknown how these factors may differentially affect adolescents with a sexual or gender minority identity. SGM adolescents have historically been studied under an "LGBTQ+" umbrella, though differences in their body image concerns may underpin differences in their disordered eating behaviors. For example, gender minority adolescents may engage in disordered eating to affirm their gender identity (Griffiths & Yager, 2019; Roberts et al., 2021; Romito et al., 2021), a concern that sexual minority individuals may not experience. Further, when these groups are collapsed into a singular category, important differences in disordered eating may be disguised. Additional research is needed to explore which factors are most strongly associated with SGM adolescents' disordered eating

behaviors, and whether these factors differentially affect sexual minority and gender minority populations.

Therefore, the current study has two aims. First, we examine the role of general factors (stress, depressive symptoms, self-esteem) and SGM-specific factors (feelings about SGM identity, access to SGM resources, future beliefs about life as an SGM person, openness about SGM identity, and stress of "coming out") on SGM adolescents' disordered eating behaviors. Second, we examine whether these factors are differentially associated with disordered eating as a function of a sexual or gender minority identity.

Chapter 2

METHOD

2.1 Participants and Procedure

Our study utilized a subset of data (*n* = 8,814) from a larger sample of 17,112 adolescents who participated in the *LGBTQ National Teen Survey*, an online, anonymous survey that assessed SGM adolescents' experiences across the U.S. described previously (R. J. Watson et al., 2020). In partnership with the Human Rights Campaign (HRC), data were collected from April to December 2017. English-speaking SGM adolescents (ages 13-17) residing in the U.S. were eligible to participate. Participants were recruited through HRC's community partners and social media. Respondents spanned all 50 U.S. states., and were primarily White (61.9%), followed by multiple racial/ethnic identities (14.3%), Hispanic/Latinx (11.4%), Black (4.0%), Asian American (4.0%), and another race not listed (2.1%). For compensation, participants were offered HRC wristbands and entered in a raffle for an online gift card. All procedures were approved by the Institutional Review Board.

Participants were included in the current analyses if they had complete data for all independent variables and at least one disordered eating outcome behavior, resulting in a final sample of 8,814 SGM adolescents. Table 2-1 displays full demographic information. Compared to those who were excluded from the final analytic sample (*n* = 8,298), included participants were more likely to be assigned female at birth, older, White, have a lower BMI percentile and identify as gender minority (vs. cisgender), and less likely to be Black.

Table 2-1. Sample Characteristics

	Cisgender Sexual Minority *n* = 5,711 *n* (%)	Gender Minority *n* = 3,103 *n* (%)
Age *M (SD)*	15.7 (1.23)	15.5 (1.29)
Racial/Ethnic Identity		
White	3,748 (65.63)	2,149 (69.26)
Black	256 (4.48)	91 (2.93)
Hispanic, Latinx/a/o	629 (11.01)	229 (7.38)
Asian American	261 (4.57)	91 (2.93)
Native American	17 (0.30)	17 (0.55)
Biracial or Multiracial	706 (12.36)	477 (15.37)
Other	94 (1.65)	49 (1.58)
Sexual Orientation		
Straight/heterosexual	0	144 (4.64)
Gay/lesbian	2,564 (44.90)	709 (22.85)
Bisexual	2,227 (38.99)	725 (23.36)
Pansexual	442 (7.74)	770 (24.81)
Queer	124 (2.17)	276 (8.89)
Asexual	189 (3.31)	260 (8.38)
Questioning	93 (1.63)	100 (3.22)
Other	72 (1.26)	119 (3.83)
Gender Identity		
Cisgender girl	3,852 (67.45)	-
Cisgender boy	1,859 (32.55)	-
Trans girl	-	101 (3.25)
Trans boy	-	767 (24.72)
Nonbinary AFAB	-	2,034 (65.55)
Nonbinary AMAB	-	201 (6.45)
Psychosocial risk & resilience factors *M* (*SD*)		
Self-esteem	1.58 (.64)	1.20 (.60)
Depressive symptoms	1.19 (.72)	1.60 (.73)
General stress	6.31 (1.96)	6.79 (1.86)
SGM—positive affect	2.28 (.62)	2.19 (.63)
SGM—access	1.64 (.80)	1.81 (.80)
SGM—future beliefs	2.29 (.67)	2.07 (.76)
SGM—openness	1.80 (.76)	1.75 (.71)
SGM—stress of coming out	2.19 (1.09)	2.37 (.99)

Note. SGM-specific items are on a 4-point Likert scale from 0 to 3. SGM—positive affect is pride and positive feelings about SGM identity. SGM—access is resource access and involvement in events related to SGM issues. SGM—future beliefs is positive beliefs about one's role as an SGM adult. SGM—openness is feeling able to be oneself as an SGM person in various contexts.

2.2 Measures

2.2.1 Sexual Orientation

Participants responded to the survey item "How do you describe your sexual identity?" with one of the following responses: "gay or lesbian," "bisexual," "straight, that is, not gay," or "something else." If they selected "something else," they were given additional response options: "queer," "pansexual," "asexual," "questioning," and "other." Participants who selected "other" were able to describe their sexual identity in a text box. If their written response matched one of the earlier response options, they were then appropriately categorized.

2.2.2 Gender Identity

Participants first responded to "What sex were you assigned at birth?" (response options: male/female) followed by "What is your current gender identity?" Adolescents could select "male," "female," "trans male/trans boy," "trans female/trans girl," "non-binary," "gender queer/gender nonconforming," or "Different identity (please state)." If they selected the last option, they were able to describe their identity in a text box.

2.2.3 Gender Minority and Sexual Minority Categorizations

For purposes of the current study, adolescents were considered gender minority if they selected a gender identity that did not match their sex assigned at birth, or if they selected one of the transgender, non-binary, or genderqueer/nonconforming options. Adolescents were considered cisgender sexual minority if they selected a sexual minority sexual orientation and reported a gender identity congruent with their

sex assigned at birth (i.e., were not categorized as having a gender minority identity). Throughout this manuscript, “sexual minority” refers to cisgender sexual minority adolescents specifically.

2.2.4 Disordered Eating

Using items developed from a prior questionnaire of adolescents’ eating behaviors (Neumark-Sztainer et al., 2002), participants were asked, “How often have you done each of the following things in order to lose weight or keep from gaining weight during the past year?” with options ranging from *1* (“Never”) to *4* (“On a Regular Basis”). Responses were then dichotomized into *0* (participant has never engaged in this behavior) to *1* (participant has engaged in this behavior) to capture five distinct disordered eating behaviors: caloric restriction (including fasting, eating little, and/or skipping meals), taking diet pills, purging (self-induced vomiting), taking laxatives, and objective binge eating (eating an objectively large amount of food while experiencing loss of control eating). Prior research with adolescents has used a similar protocol for dichotomizing distinct disordered eating behaviors (see Hazzard et al., 2021).

2.2.5 General Factors (Non-SGM Specific)

Self-esteem, stress, and depression were included as general psychological factors predicting disordered eating. Self-esteem was measured using the Rosenberg Self-Esteem Scale (RSES; Rosenberg, 1965), a 10-item measure validated for use with adolescents (Bagley & Mallick, 2001; current sample $\alpha = .91$). To assess stress, participants were asked to “please mark the appropriate number corresponding with your average level of stress,” with response options ranging from *1* (“not very

stressed") to *10* ("very stressed"). To measure depression, participants responded to a 10-item scale adapted from Kutcher's Adolescent Depression Scale (KADS; S. Brooks, 2004; current sample α = .90) assessing how often participants felt various depressive symptoms with responses ranging from *0* ("hardly ever") to *3* ("all of the time"), such as "low mood, sadness, feeling blah or down, depressed, just can't be bothered." One item from the original scale assessing suicidality and self-harm was removed.

2.2.6 SGM-Specific Factors

2.2.6.1 Feelings about one's SGM Identity

SGM-specific factors corresponded to adolescents' feelings about their SGM identity. These factors were measured using 15 items developed by the HRC, corresponding to four subscales about having an LGBTQ+ identity: positive feelings about SGM identity (5 items; e.g., "I am proud to be part of the LGBTQ community"; current sample α = .81); access to SGM resources (3 items; e.g., "Do you have access to information about LGBTQ issues?"; current sample α = .67); future beliefs about life as an SGM person (3 items; e.g., "Are you able to see yourself in the future as a happy or successful LGBTQ adult?"; current sample α = .72); and openness about SGM identity (4 items; e.g., "As an LGBTQ person, are you able to be yourself at home?"; current sample α = .75). Responses ranged from *0* ("Definitely no") to *3* ("Definitely yes"). Scores for each subscale were averaged, with higher scores indicating more positive feelings, access to resources, positive future beliefs, and openness relating to one's SGM identity, respectively.

2.2.6.2 Stress of Coming Out

Additionally, participants were provided with 10 different scenarios, with the instructions "For each event listed below we would like you to rate how stressful the situation was for you. Using the numbers provided tell us how stressful the event was." Responses ranged from *0* ("no stress") to *4* ("extremely stressful"). An example scenario includes: "When your close friends first found out that you were LGBTQ." Each event also included an "N/A" option, in case the adolescent had not "come out" in a given scenario, or the scenario did not apply to them. A mean score was calculated using only the items they responded to. Participants who indicated N/A for all items were coded as missing for the "stress of coming out" variable. Final mean scores ranged from 0 to 4, with higher scores indicating more stress relating to coming out.

2.3 Analytic Plan

Chi Square tests compared rates of ever engaging in each disordered eating behavior across subgroups of adolescents. Specifically, analyses compared the following 10 subgroups: gay cisgender male adolescents, lesbian cisgender female adolescents, bisexual cisgender male adolescents, bisexual cisgender female adolescents, cisgender male adolescents with another minority sexual orientation, cisgender female adolescents with another minority sexual orientation, transmasculine adolescents, transfeminine adolescents, nonbinary/genderqueer adolescents assigned female at birth, nonbinary/genderqueer adolescents assigned male at birth. A Bonferroni correction was applied to the significance threshold to address inflated Type I error (.05/45 comparisons = .0011).

To examine the effect of each independent variable on the likelihood of engaging in each disordered eating behavior, separate logistic regression models for each of the five disordered eating behaviors were conducted. Each model controlled for race, age, assigned sex, BMI percentile, and gender identity (1 = cisgender, 0 = gender minority). The associations were examined in a two-step process. The first set of models ("Model 1") included as independent variables general psychological factors (self-esteem, depressive symptoms, and stress) as well as SGM-specific factors (positive feelings about SGM identity; access to SGM resources; future beliefs about life as an SGM person; and openness about SGM identity). The second set of models ("Model 2") added one additional SGM-specific variable: the stress of coming out. This variable was added at step 2 because it only applies to adolescents who were out about their SGM identities to at least one person and thus excludes participants who were not yet out to anyone (n = 289).

Finally, to assess the moderating role of sexual minority vs. gender minority identity on the associations between the independent variables and each disordered eating outcome, interaction terms between gender identity (cisgender, sexual minority vs. gender minority) and each independent variable of interest were added into each model. These models were conducted as described above, first with all general and SGM-specific predictors except stress of coming out ("Model 3"), then with all predictors including stress of coming out ("Model 4"). These models included the same covariates as prior. Sexual minority vs. gender minority identity was dummy coded such that 1 = cisgender sexual minority adolescents and 0 = gender minority adolescents. When models indicated a significant interaction, simple slope analyses

were conducted to ascertain differences in the effect of the predictor on the outcome for sexual minority adolescents vs. gender minority adolescents.

Chapter 3

RESULTS

The majority of adolescents in the current study reported engaging in a disordered eating behavior, particularly caloric restriction. The percentage of adolescents in each identity subgroup reporting ever engaging in each disordered eating behavior, as well as differences across groups, are presented in Table 3-1. Transmasculine adolescents reported the highest rates of caloric restriction, taking diet pills, purging, and binge eating; transfeminine adolescents reported the highest rates of taking laxatives. Transgender and nonbinary/genderqueer adolescents generally reported higher rates of disordered eating, though sexual minority female adolescents also reported high rates, particularly for caloric restriction and purging.

Associations between general, SGM-specific factors, and disordered eating for the entire SGM sample (without examining sexual minority vs. gender minority differences) are presented in Table 3-2. Self-esteem and positive feelings about SGM identity were associated with less likelihood of caloric restriction, whereas depressive symptoms and stress of coming out were associated with greater likelihood of caloric restriction. Depressive symptoms and positive beliefs about one's future as an SGM person were associated with greater likelihood of taking diet pills. Self-esteem and positive feelings about SGM identity were associated with less likelihood of purging, whereas depressive symptoms, general stress, access to SGM resources, positive beliefs about the future as an SGM person, and stress of coming out were associated with greater likelihood to engage in purging. Depressive symptoms were associated

with greater likelihood to take laxatives. Self-esteem, positive feelings about SGM identity and openness as an SGM person were associated with less likelihood to binge eat, whereas depressive symptoms, general stress, positive beliefs about the future as an SGM person, and stress of coming out were associated with greater likelihood to engage in binge eating.

In the moderation models, several significant interaction terms suggested differences between sexual minority and gender minority adolescents (see Table 3-3). Simple slopes for all significant interactions are presented in Figure 3-1. To retain a larger sample, interactions are plotted from Model 3 analyses (including adolescents who are not yet out about their SGM identity). Specifically, self-esteem was associated with lower odds of caloric restriction for both sexual minority (b = -.46, OR = .63, $p < .001$) and gender minority (b = -.87, OR = .42, $p < .001$) adolescents, though the association was stronger for gender minority adolescents. Depressive symptoms were associated with higher odds of caloric restriction for both sexual minority (b = .88, OR = 2.41, $p < .001$) and gender minority (b = .44, OR = 1.57, $p < .001$) adolescents, though the association was stronger for sexual minority adolescents. Openness about one's SGM identity was associated with lower odds of caloric restriction for sexual minority adolescents (b = -.16, OR = .85, $p < .001$) but was associated with higher odds of caloric restriction for gender minority adolescents (b = .16, OR = 1.17, $p = .03$). Positive feelings about SGM identity was associated with lower odds of engaging in caloric restriction among gender minority adolescents only (b = -.28, OR = .76, $p < .001$); this association was not significant among sexual minority adolescents. Among gender minority adolescents, positive feelings about SGM identity was associated with lower odds of purging (b = -.34, OR = .71, $p <$

.001) while access to SGM resources was associated with higher odds of purging (b = .17, OR = 1.19, $p < .001$); there were no significant associations between these variables and purging for sexual minority adolescents. Openness about SGM identity was also associated with lower odds of binge eating for sexual minority adolescents (b = -.16, OR = .85, $p < .001$); this association was not significant among gender minority adolescents.

Table 3-1. Descriptive Statistics.

	Full Sample	Cisgender Sexual Minority						Gender Minority				
n (%)	*n* = 8,814	Gay Boys *n*=1,333	Lesbian Girls *n*=1,231	Bisexual Boys *n*=438	Bisexual Girls *n*=1,789	Other SM Boys *n*=88	Other SM Girls *n*=832	Trans boys *n*=767	Trans girls *n*=101	Nonbinary AFAB *n*=2,034	Nonbinary AMAB *n*=201	χ^2
Caloric Restriction	6370 (72.39)	825^{abcde} (62.1)	858^{afghi} (69.8)	264^{fjklm} (60.3)	1351^{bgjn} (75.6)	47^{nopq} (53.4)	623^{cko} (74.9)	610^{dhlpr} (79.8)	66 (65.3)	1588^{eimq} (78.2)	138^{r} (68.7)	193.42, $p < .001$
Diet Pills[1]	617 (7.06)	82 (6.21)	66^{a} (5.40)	28 (6.42)	129 (7.25)	1 (1.15)	61 (7.38)	71^{a} (9.35)	7 (7.07)	156 (7.76)	16 (8.0)	19.59, $p = .02$
Purge (Vomit)	1699 (19.34)	152^{abcde} (11.5)	209^{afgh} (17.0)	44^{fijklm} (10.1)	355^{bin} (19.9)	9° (10.2)	157^{cjp} (18.9)	$239^{dgknopqr}$ (31.3)	23^{l} (22.8)	479^{ehmq} (23.7)	32^{r} (16.0)	182.48, $p < .001$
Laxatives	588 (6.70)	75 (5.66)	77 (6.27)	28 (6.39)	124 (6.95)	3 (3.41)	42^{a} (5.06)	67 (8.82)	14^{a} (14.0)	141 (6.96)	17 (8.5)	23.21, $p = .006$
Binge Eat	2960 (33.66)	327^{abcd} (24.6)	354^{efgh} (28.8)	89^{eijkl} (20.5)	633^{aimn} (35.5)	22 (25.0)	282^{bfjop} (33.9)	328^{cgkmo} (42.8)	34 (33.7)	829^{dhlnp} (40.9)	62 (30.8)	177.54, $p < .001$

Note. Values sharing a superscript are significantly different from each other at $p < .0011$ (Bonferroni corrected). Disordered eating measures capture behavior in the past year. Participants were coded as engaging in caloric restriction if they indicated having fasted, ate very little, and/or skipped meals.
[1]Denotes analyses where some expected frequencies were less than 5.

Table 3-2. Associations between psychological comorbidities and disordered eating behaviors.

	Model 1 *n* = 8814			Model 2: With Stress of Coming Out *n* = 8525		
	b (SE)	OR	*p*	b (SE)	OR	*p*
Caloric Restriction						
Self-esteem	**-.58 (.06)**	**.56**	**< .001**	**-.61 (.06)**	**.54**	**< .001**
Depressive symptoms	**.73 (.05)**	**2.07**	**< .001**	**.72 (.05)**	**2.06**	**< .001**
General stress	.02 (.02)	1.02	.19	.01 (.02)	1.01	.55
SGM—positive feelings	**-.13 (.05)**	**.88**	**.02**	-.10 (.06)	.90	.07
SGM—access to resources	-.02 (.04)	.99	.68	-.02 (.04)	.98	.52
SGM—future beliefs	.09 (.04)	1.09	.05	.09 (.05)	1.09	.05
SGM—openness	-.06 (.04)	.94	.14	-.05 (.05)	.95	.27
SGM—stress of coming out	--	--	--	**.07 (.03)**	**1.07**	**.01**
Diet Pills						
Self-esteem	-.04 (.10)	.96	.66	-.08 (.10)	.93	.45
Depressive symptoms	**.78 (.08)**	**2.18**	**< .001**	**.75 (.08)**	**2.12**	**< .001**
General stress	.04 (.03)	1.04	.18	.04 (.03)	1.04	.18
SGM—positive feelings	-.04 (.08)	.96	.62	-.03 (.08)	.97	.73
SGM—access to resources	-.06 (.06)	.94	.25	-.07 (.06)	.93	.21
SGM—future beliefs	**.18 (.07)**	**1.19**	**.009**	**.19 (.07)**	**1.21**	**.006**
SGM—openness	-.07 (.07)	.93	.28	-.07 (.07)	.94	.35
SGM—stress of coming out	--	--	--	.03 (.05)	1.03	.35
Purge (Vomit)						
Self-esteem	**-.48 (.07)**	**.62**	**< .001**	**-.52 (.07)**	**.60**	**< .001**
Depressive symptoms	**.75 (.06)**	**2.12**	**< .001**	**.74 (.06)**	**2.09**	**< .001**
General stress	**.04 (.02)**	**1.04**	**.03**	.03 (.02)	1.03	.10
SGM—positive feelings	**-.20 (.05)**	**.82**	**< .001**	**-.18 (.05)**	**.84**	**.001**
SGM—access to resources	**.08 (.04)**	**1.08**	**.04**	.08 (.04)	1.08	.05
SGM—future beliefs	**.12 (.05)**	**1.13**	**.008**	**.13 (.05)**	**1.14**	**.004**
SGM—openness	-.03 (.05)	.97	.47	.005 (.05)	1.00	.92
SGM—stress of coming out	--	--	--	**.09 (.03)**	**1.09**	**.004**
Laxatives						
Self-esteem	-.12 (.10)	.89	.24	-.17 (.10)	.84	.09
Depressive symptoms	**.73 (.08)**	**2.08**	**< .001**	**.70 (.08)**	**2.01**	**< .001**
General stress	-.02 (.03)	.98	.51	-.02 (.03)	.98	.41
SGM—positive feelings	-.12 (.08)	.88	.12	-.08 (.08)	.92	.30
SGM—access to resources	.07 (.06)	1.07	.22	.07 (.06)	1.07	.24
SGM—future beliefs	.08 (.07)	1.08	.25	.06 (.07)	1.07	.36
SGM—openness	-.07 (.07)	.94	.34	-.08 (.07)	.92	.28
SGM—stress of coming out	--	--	--	.03 (.05)	1.03	.55
Binge Eat						
Self-esteem	**-.48 (.06)**	**.62**	**< .001**	**-.49 (.06)**	**.61**	**< .001**
Depressive symptoms	**.60 (.05)**	**1.82**	**< .001**	**.59 (.05)**	**1.80**	**< .001**
General stress	**.04 (.02)**	**1.04**	**.007**	**.03 (.02)**	**1.04**	**.02**
SGM—positive feelings	**-.17 (.05)**	**.84**	**< .001**	**-.13 (.05)**	**.88**	**.005**
SGM—access to resources	.03 (.03)	1.03	.42	.02 (.03)	1.02	.47
SGM—future beliefs	**.08 (.04)**	**1.08**	**.04**	.08 (.04)	1.08	.05
SGM—openness	**-.09 (.04)**	**.91**	**.02**	-.08 (.04)	.92	.05
SGM—stress of coming out	--	--	--	**.09 (.03)**	**1.09**	**< .001**

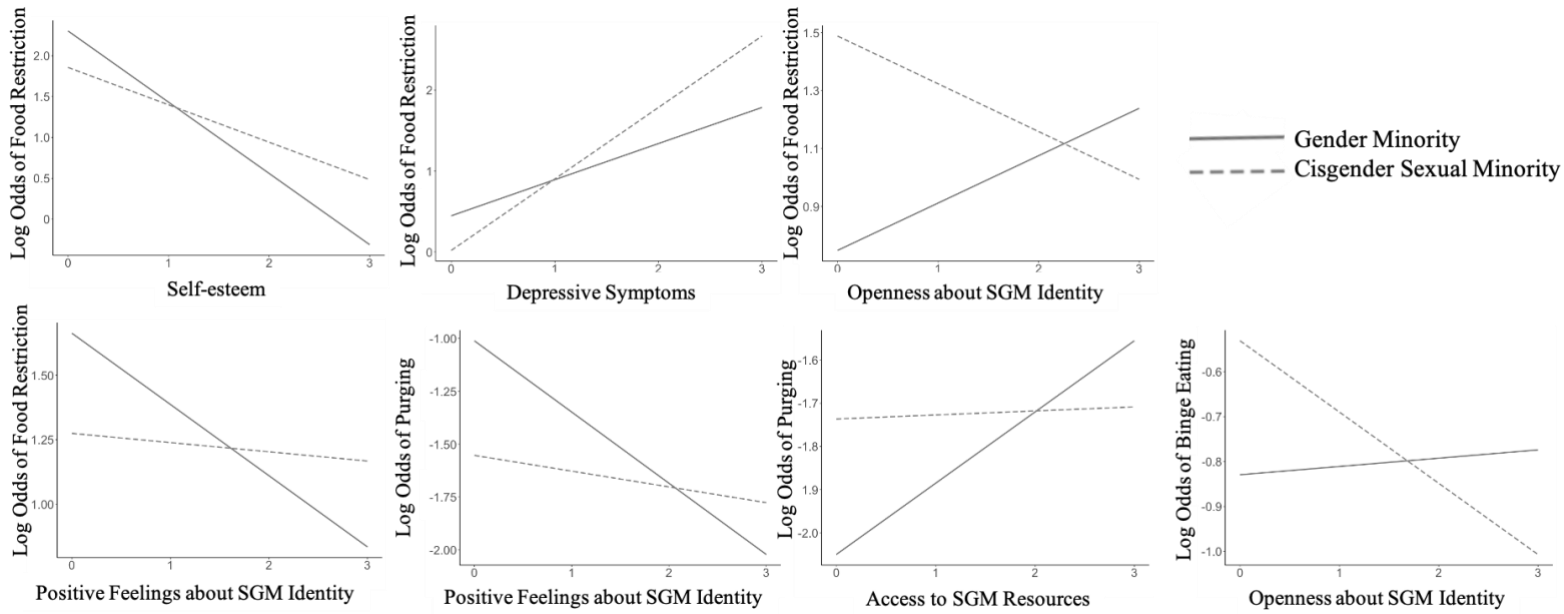
Note. All models control for race, age, assigned sex, BMI percentile, and cisgender vs. gender minority identity. Model 2 that includes stress of coming out only includes participants who are out to at least one person. Significant coefficients ($p < .05$) are in bold.

Table 3-3. Interaction terms for associations between psychological comorbidities and disordered eating behaviors by cisgender sexual minority and gender minority adolescents.

	Model 1 *n* = 8814			Model 2: With Stress of Coming Out *n* = 8525		
	b (SE)	OR	*p*	b (SE)	OR	*p*
Caloric Restriction						
Self-esteem	**.41 (.13)**	**1.51**	**.001**	**.39 (.13)**	**1.48**	**.002**
Depressive symptoms	**.44 (.11)**	**1.54**	**< .001**	**.45 (.11)**	**1.56**	**< .001**
General stress	-.05 (.03)	.95	.14	-.06 (.03)	.94	.09
SGM—positive feelings	**.24 (.11)**	**1.27**	**.03**	.22 (.12)	1.25	.05
SGM—access to resources	-.0005 (.08)	1.00	.99	.002 (.08)	1.00	.98
SGM—future beliefs	-.16 (.09)	.85	.08	-.17 (.09)	.85	.07
SGM—openness	**-.33 (.09)**	**.72**	**< .001**	**-.35 (.10)**	**.71**	**< .001**
SGM—stress of coming out	--	--	--	-.08 (.06)	.92	.19
Diet Pills						
Self-esteem	-.22 (.20)	.80	.26	-.29 (.20)	.75	.14
Depressive symptoms	-.05 (.17)	.95	.76	-.09 (.17)	.91	.58
General stress	-.11 (.05)	.90	.05	-.10 (.06)	.90	.06
SGM—positive feelings	.10 (.16)	1.10	.54	.11 (.16)	1.12	.49
SGM—access to resources	-.001 (.01)	1.00	.99	-.01 (.11)	.99	.93
SGM—future beliefs	-.15 (.14)	.86	.28	-.11 (.14)	.89	.41
SGM—openness	.13 (.14)	1.14	.33	.16 (.14)	1.17	.28
SGM—stress of coming out	--	--	--	-.02 (.09)	.98	.83
Purge (Vomit)						
Self-esteem	.07 (.14)	1.08	.59	.01 (.14)	1.01	.93
Depressive symptoms	-.12 (.11)	.88	.28	-.15 (.11)	.86	.20
General stress	.002 (.04)	1.00	.95	.0003 (.04)	1.00	.99
SGM—positive feelings	**.26 (.11)**	**1.30**	**.01**	**.24 (.11)**	**1.27**	**.03**
SGM—access to resources	**-.16 (.08)**	**.86**	**.04**	**-.16 (.08)**	**.85**	**.04**
SGM—future beliefs	-.15 (.09)	.86	.10	.13 (.09)	.88	.17
SGM—openness	-.10 (.09)	.90	.27	-.09 (.10)	.92	.38
SGM—stress of coming out	--	--	--	-.02 (.06)	.98	.73
Laxatives						
Self-esteem	.05 (.20)	1.05	.79	-.05 (.21)	.95	.79
Depressive symptoms	.01 (.17)	1.01	.96	-.05 (.17)	.95	.79
General stress	-.07 (.05)	.93	.17	-.08 (.06)	.92	.14
SGM—positive feelings	.05 (.160	1.05	.77	.12 (.16)	1.13	.45
SGM—access to resources	.01 (.12)	1.01	.91	.01 (.12)	1.01	.91
SGM—future beliefs	.07 (.14)	1.07	.62	.04 (.14)	1.04	.76
SGM—openness	.18 (.14)	1.20	.20	.18 (.150	1.20	.22
SGM—stress of coming out	--	--	--	.005 (.10)	1.00	.96
Binge Eat						
Self-esteem	-.002 (.12)	1.00	.99	-.02 (.12)	.98	.89
Depressive symptoms	.01 (.10)	1.01	.91	.02 (.10)	1.02	.86
General stress	-.03 (.03)	.97	.28	-.03 (.03)	.97	.27
SGM—positive feelings	.05 (.09)	1.05	.28	.04 (.10)	1.05	.64
SGM—access to resources	.05 (.07)	1.05	.44	.06 (.07)	1.06	.37
SGM—future beliefs	.06 (.08)	1.07	.42	.08 (.08)	1.08	.32
SGM—openness	**-.18 (.08)**	**.84**	**.03**	**-.17 (.08)**	**.84**	**.04**
SGM—stress of coming out	--	--	--	.003 (.05)	1.00	.96

Note. Coefficients represent interaction terms for the differences in the association between the predictor and the outcome by cisgender sexual minority vs. gender minority identity. All models control for race, age, assigned sex, and BMI percentile. Model 2 that includes stress of coming out only includes participants who are out to at least one person. Significant coefficients ($p < .05$) are in bold.

Figure 3-1. Differences in associations between psychosocial risk and protective factors and log odds of disordered eating across cisgender sexual minority and gender minority adolescents.



Note. SGM-specific items are on a 4-point Likert scale from 0 to 3. SGM—positive affect is pride and positive feelings about SGM identity. SGM—access is resource access and involvement in events related to SGM issues. SGM—future beliefs is positive beliefs about one's role as an SGM adult. SGM—openness is feeling able to be oneself as an SGM person in various contexts.

Chapter 4

DISCUSSION

The current study advances prior work by comparing how general and SGM-specific factors are uniquely implicated in SGM adolescents' disordered eating. For sexual and gender minority adolescents, stress and depression were generally identified as risk factors, whereas self-esteem, positive feelings about SGM identity, and openness about SGM identity were generally protective factors. However, when examined more closely, results indicated that some SGM-specific factors affected sexual and gender minority adolescents' likelihood to engage in disordered eating differently. These results highlight the importance of considering the unique experiences of sexual and gender minority youth.

4.1 Disordered Eating among SGM Adolescents

Our study began with a comparison of disordered eating behaviors between subgroups of SGM adolescents. Most adolescents in the current study had engaged in at least one disordered eating behavior, particularly caloric restriction. Gender minority adolescents exhibited greater disordered eating than sexual minority adolescents in the current study. Transmasculine adolescents reported the highest levels of caloric restriction, purging, binge eating, and using diet pills, echoing prior

work showing elevated restriction and purging among transmasculine adolescents (Roberts et al., 2021). Importantly, other research has documented higher rates of disordered eating among sexual minority college students than gender minority (Simone et al., 2020). Among the sexual minority adolescents, bisexual female adolescents, and sexual minority female adolescents other than “bisexual” or “lesbian” (e.g., pansexual), exhibited elevated disordered eating. Bisexual+ populations may be at elevated risk for disordered eating due to unique bisexual minority stress; research with adults supports that bisexual women experience sexual objectification in its traditional sense (Fredrickson & Roberts, 1997), in addition to fetishization of their bisexual identity, erasure, antibisexual discrimination, and internalized biphobia (Brewster et al., 2014; Serpe et al., 2020), ultimately contributing to eating disorder symptomatology (Brewster et al., 2014).

4.2 General Risk and Protective Factors for Disordered Eating

When comparing which general factors were most relevant to sexual and gender minority adolescents’ disordered eating behaviors, several results emerged. For both sexual and gender minority adolescents, findings extend prior work that depression and stress increase the risk of disordered eating, while self-esteem decreases it (Murray et al., 2011). Depressive symptoms were associated with greater likelihood of caloric restriction, purging, binge eating, diet pill, and laxative use, for both sexual and gender minority participants. The association between depressive symptoms and caloric restriction was particularly strong for sexual minority adolescents. Stress was associated with increased binge eating and purging for both

sexual and gender minority participants, suggesting that these behaviors may be a marker of stress or potential coping mechanism (Parker & Harriger, 2020). Self-esteem was associated with lower likelihood of engaging in caloric restriction among both sexual and gender minority adolescents, though the association was significantly stronger among gender minority adolescents. Self-esteem was also associated with lower likelihood of purging and binge eating, suggesting that self-esteem may buffer against the negative effects of stress (Murray et al., 2011).

4.3 SGM-Specific Risk and Protective factors for Disordered Eating

The current study also compared which SGM-specific factors were particularly relevant for sexual or gender minority adolescents' disordered eating. More positive feelings about SGM identity were associated with decreased likelihood of binge eating among both sexual and gender minority adolescents, though were only associated with lowered odds of caloric restriction and purging for gender minority adolescents. These results suggest that improving gender minority adolescents' perceptions of their identity may reduce the risk for caloric restriction, a particularly common disordered eating behavior (Guss et al., 2017; Roberts et al., 2021). It remains unknown why feeling positively about one's SGM identity was not associated with less caloric restriction among sexual minority adolescents. Gender identity congruence is negatively associated with gender minority adolescents' caloric restriction (Roberts et al., 2021), so perhaps feeling more positively about one's SGM identity may indicate greater gender identity congruence and decreased likelihood of caloric restriction. Among sexual minority adults, caloric restriction is associated with minority stressors like victimization, discrimination, and harassment (Convertino et al., 2021; L. B.

Watson et al., 2015), events that may occur regardless of sexual minority individual's feelings about their SGM identity.

Whether adolescents' openness about their SGM identity was a risk or protective factor for disordered eating differed between sexual and gender minority adolescents. Among sexual minority adolescents, greater openness was associated with lower odds of caloric restriction, whereas the opposite was true for gender minority adolescents. While the current study cannot comment on *why* these results emerged, it is possible that gender minority adolescents' openness may indicate greater identification with the gender minority community, who may use caloric restriction to align their physical appearance with their gender identity, as reported in case studies (Romito et al., 2021). For sexual minority adolescents, greater openness about SGM identity was associated with a decreased risk of binge eating, perhaps reflecting decreased internalized homophobia or biphobia. Future work should attempt to disentangle the relationship between openness and risk for disordered eating, with attention towards the unique experiences of sexual and gender minority youth.

Surprisingly, more positive future beliefs about life as an SGM person and greater access to SGM resources were both risk factors for disordered eating. Positive future beliefs about life as an SGM person were associated with increased likelihood of diet pill use, purging, and binge eating for both sexual and gender minority adolescents. It is possible that the "future beliefs" items captured dissonance for adolescents who are *currently* in distress over their identity, but are hopeful that the future will be better—a prevalent message found in the "It Gets Better" project, a program designed to prevent suicidality among SGM youth (Savage & Miller, 2011). Access to SGM resources was associated with higher odds of purging for gender

minority adolescents, but not sexual minority adolescents. Gender minority adolescents with greater access to resources may be more involved in the SGM community, a community that may encourage its own appearance ideals. Indeed, a recent review suggested that the SGM community is both a place of social support and inclusion that may also disseminate increased appearance pressures (Parker & Harriger, 2020). Future work should consider whether pieces of SGM resources and community may inadvertently encourage unattainable appearance ideals, and in turn, disordered eating.

For sexual and gender minority adolescents who had "come out" to others, the stress of coming out was significantly associated with greater likelihood of caloric restriction, purging, and binge eating. These findings indicate that SGM adolescents may use disordered eating to cope with negative emotional experiences that accompany "coming out," a process fraught with significant distress and stigmatization (Cox et al., 2010; Schimmel-Bristow et al., 2018). Beyond "coming out," future work should consider identity concealment, in which adolescents do not share their identity with others. Both stress of coming out, and identity concealment, may indicate a lack of social support or stressful interpersonal relationships, increasing the risk for disordered eating behaviors (Parker & Harriger, 2020). For clinicians working with SGM youth, special care must be taken to help youth navigate the coming out process and the distress that may accompany it.

4.4 Limitations and Future Directions

While the current study presents a first glimpse into how general and SGM-specific factors may be related to the disordered eating behaviors of sexual and gender minority youth, the data do not allow us to comment on the reasons, mechanisms, or

confounding factors behind these findings. Research on the role of minority stress in SGM adolescents' disordered eating is still in its infancy, and more work is necessary to understand how identity development and perception, SGM-community involvement, and beliefs about the future may affect SGM adolescents' disordered eating. Additional work should explore the origins and temporal relationships of these factors to better understand the nature of their associations with disordered eating. For example, longitudinal designs would offer greater insight into how "coming out" affects disordered eating among SGM adolescents. Lastly, while the current study benefitted from a large sample of SGM adolescents across the U.S., it is unknown if these results generalize to other cultural contexts. The U.S. generally reports greater acceptance of SGM identities than other countries, though is not among the most accepting (Flores, 2019). Future research on SGM adolescents' feelings about their identity in less-accepting cultural climates will be especially important to further this research.

4.5 Conclusion

The current study is among the first to examine how both general and SGM-specific factors contribute to sexual and gender minority adolescents' disordered eating. For all adolescents in the study, depressive symptoms, stress, and distress over "coming out" were risk factors for disordered eating, while self-esteem and positive feelings about one's SGM identity were protective factors. Beliefs about the future as SGM, ability to be open with others as SGM, and access to SGM resources all had complex associations with disordered eating that differed for sexual and gender minority groups. Findings underscore the need to consider differences between sexual and gender minority adolescents' distinct body image concerns and reasons for

engaging in disordered eating. By exploring why SGM adolescents are uniquely vulnerable to eating pathology, the current study sheds light on the factors that clinicians, researchers, and caregivers to SGM youth ought to consider when evaluating SGM adolescents' risk for disordered eating.

REFERENCES

Bagley, C., & Mallick, K. (2001). Normative data and mental health construct validity for the Rosenberg Self-Esteem Scale in British adolescents. *International Journal of Adolescence and Youth*, *9*(2–3), 117–126. https://doi.org/10.1080/02673843.2001.9747871

Ball, K., & Lee, C. (2000). Relationships between psychological stress, coping and disordered eating: A review. *Psychology & Health*, *14*(6), 1007–1035. https://doi.org/10.1080/08870440008407364

Brewster, M. E., Velez, B. L., Esposito, J., Wong, S., Geiger, E., & Keum, B. T. (2014). Moving beyond the binary with disordered eating research: A test and extension of objectification theory with bisexual women. *Journal of Counseling Psychology*, *61*(1), 50–62. https://doi.org/10.1037/a0034748

Brooks, S. (2004). The Kutcher Adolescent Depression Scale (KADS). *Child and Adolescent Psychopharmacology News*, *9*(5), 4–6. https://doi.org/10.1521/capn.9.5.4.52044

Brooks, V. R. (1981). *Minority Stress and Lesbian Women*. Lexington, MA: Lexington Books.

Calzo, J. P., Horton, N. J., Sonneville, K. R., Swanson, S. A., Crosby, R. D., Micali, N., Eddy, K. T., & Field, A. E. (2016). Male eating disorder symptom patterns and health correlates from 13 to 26 years of age. *Journal of the American Academy of Child & Adolescent Psychiatry*, *55*(8), 693-700.e2. https://doi.org/10.1016/j.jaac.2016.05.011

Calzo, J. P., Austin, S. B., & Micali, N. (2018). Sexual orientation disparities in eating disorder symptoms among adolescent boys and girls in the UK. *European Child & Adolescent Psychiatry*, *27*(11), 1483–1490. http://dx.doi.org/10.1007/s00787-018-1145-9

Colmsee, I.-S. O., Hank, P., & Bošnjak, M. (2021). Low self-esteem as a risk factor for eating disorders. *Zeitschrift Für Psychologie*, *229*(1), 48–69. https://doi.org/10.1027/2151-2604/a000433

Colvin, S., Egan, J. E., & Coulter, R. W. S. (2019). School climate & sexual and gender minority adolescent mental health. *Journal of Youth and Adolescence*, *48*(10), 1938–1951. http://dx.doi.org/10.1007/s10964-019-01108-w

Connolly, M. D., Zervos, M. J., Barone, C. J., Johnson, C. C., & Joseph, C. L. M. (2016). The mental health of transgender youth: Advances in understanding. *Journal of Adolescent Health*, *59*(5), 489–495. https://doi.org/10.1016/j.jadohealth.2016.06.012

Convertino, A. D., Brady, J. P., Albright, C. A., Gonzales, M., & Blashill, A. J. (2021). The role of sexual minority stress and community involvement on disordered eating, dysmorphic concerns and appearance- and performance-enhancing drug misuse. *Body Image*, *36*, 53–63. https://doi.org/10.1016/j.bodyim.2020.10.006

Cox, N., Dewaele, A., van Houtte, M., & Vincke, J. (2010). Stress-related growth, coming out, and internalized homonegativity in lesbian, gay, and bisexual youth: An examination of stress-related growth within the minority stress model. *Journal of Homosexuality*, *58*(1), 117–137. https://doi.org/10.1080/00918369.2011.533631

Espinoza, P., Penelo, E., Mora, M., Francisco, R., González, M. L., & Raich, R. M. (2019). Bidirectional relations between disordered eating, internalization of beauty ideals, and self-esteem: A longitudinal study with adolescents. *The Journal of Early Adolescence*, *39*(9), 1244–1260. https://doi.org/10.1177/0272431618812734

Ferreiro, F., Seoane, G., & Senra, C. (2012). Gender-related risk and protective factors for depressive symptoms and disordered eating in adolescence: A 4-year longitudinal study. *Journal of Youth and Adolescence*, *41*(5), 607–622. http://dx.doi.org/10.1007/s10964-011-9718-7

Flores, A. (2019). *Social acceptance of LGBT people in 174 countries: 1981 to 2017* (Research That Matters, pp. 1–52). UCLA School of Law Williams Institute. https://escholarship.org/content/qt5qs218xd/qt5qs218xd.pdf

Fredrickson, B. L., & Roberts, T.-A. (1997). Objectification Theory. *Psychology of Women Quarterly*, *21*(2), 173–206. https://doi.org/10.1111/j.1471-6402.1997.tb00108.x

Griffiths, S., & Yager, Z. (2019). Gender, embodiment, and eating disorders. *Journal of Adolescent Health*, *64*(4), 425–426. https://doi.org/10.1016/j.jadohealth.2019.01.016

Guss, C. E., Williams, D. N., Reisner, S. L., Austin, S. B., & Katz-Wise, S. L. (2017). Disordered weight management behaviors, nonprescription steroid use, and weight perception in transgender youth. *Journal of Adolescent Health*, *60*(1), 17–22. https://doi.org/10.1016/j.jadohealth.2016.08.027

Hadland, S. E., Austin, S. B., Goodenow, C. S., & Calzo, J. P. (2014). Weight misperception and unhealthy weight control behaviors among sexual minorities in the general adolescent population. *Journal of Adolescent Health*, *54*(3), 296–303. http://dx.doi.org/10.1016/j.jadohealth.2013.08.021

Hazzard, V. M., Simone, M., Austin, S. B., Larson, N., & Neumark-Sztainer, D. (2021). Diet pill and laxative use for weight control predicts first-time receipt of an eating disorder diagnosis within the next 5 years among female adolescents and young adults. *International Journal of Eating Disorders*, *54*(7), 1289–1294. https://doi.org/10.1002/eat.23531

Hendricks, M. L., & Testa, R. J. (2012). A conceptual framework for clinical work with transgender and gender nonconforming clients: An adaptation of the Minority Stress Model. *Professional Psychology: Research and Practice*, *43*(5), 460–467. https://doi.org/10.1037/a0029597

Institute of Medicine. (2011). *The Health of Lesbian, Gay, Bisexual, and Transgender People: Building a Foundation for Better Understanding*. The National Academies Press. https://doi.org/10.17226/13128

Marshal, M. P., Dermody, S. S., Cheong, J., Burton, C. M., Friedman, M. S., Aranda, F., & Hughes, T. L. (2013). Trajectories of depressive symptoms and suicidality among heterosexual and sexual minority youth. *Journal of Youth and Adolescence*, *42*(8), 1243–1256. http://dx.doi.org/10.1007/s10964-013-9970-0

Marshal, M. P., Dietz, L. J., Friedman, M. S., Stall, R., Smith, H. A., McGinley, J., Thoma, B. C., Murray, P. J., D'Augelli, A. R., & Brent, D. A. (2011). Suicidality and depression disparities between sexual minority and heterosexual youth: A meta-analytic review. *Journal of Adolescent Health*, *49*(2), 115–123. https://doi.org/10.1016/j.jadohealth.2011.02.005

Mason, T. B., Lewis, R. J., & Heron, K. E. (2018). Disordered eating and body image concerns among sexual minority women: A systematic review and testable model. *Psychology of Sexual Orientation and Gender Diversity*, *5*(4), 397. https://doi.org/10.1037/sgd0000293

McDonald, K. (2018). Social support and mental health in lgbtq adolescents: A review of the literature. *Issues in Mental Health Nursing*, *39*(1), 16–29. https://doi.org/10.1080/01612840.2017.1398283

Meyer, I. H. (2003). Prejudice, social stress, and mental health in lesbian, gay, and bisexual populations: Conceptual issues and research evidence. *Psychological Bulletin*, *129*(5), 674. https://doi.org/10.1037/0033-2909.129.5.674

Miller, J. M., & Luk, J. W. (2019). A systematic review of sexual orientation disparities in disordered eating and weight-related behaviors among adolescents and young adults: Toward a developmental model. *Adolescent Research Review*, *4*(2), 187–208. https://doi.org/10.1007/s40894-018-0079-2

Murray, K. M., Byrne, D. G., & Rieger, E. (2011). Investigating adolescent stress and body image. *Journal of Adolescence*, *34*(2), 269–278. https://doi.org/10.1016/j.adolescence.2010.05.004

Neumark-Sztainer, D., Croll, J., Story, M., Hannan, P. J., French, S. A., & Perry, C. (2002). Ethnic/racial differences in weight-related concerns and behaviors among adolescent girls and boys: Findings from Project EAT. *Journal of Psychosomatic Research*, *53*(5), 963–974. https://doi.org/10.1016/S0022-3999(02)00486-5

Neumark-Sztainer, D., Wall, M., Larson, N. I., Eisenberg, M. E., & loth, k. (2011). dieting and disordered eating behaviors from adolescence to young adulthood: Findings from a 10-year longitudinal study. *Journal of the American Dietetic Association*, *111*(7), 1004–1011. https://doi.org/10.1016/j.jada.2011.04.012

Parker, L. L., & Harriger, J. A. (2020). Eating disorders and disordered eating behaviors in the LGBT population: A review of the literature. *Journal of Eating Disorders*, *8*(1), 51. https://doi.org/10.1186/s40337-020-00327-y

Roberts, S. R., Salk, R. H., Thoma, B. C., Romito, M., Levine, M. D., & Choukas-Bradley, S. (2021). Disparities in disordered eating between gender minority and cisgender adolescents. *International Journal of Eating Disorders*, *54*(7), 1135–1146. https://doi.org/10.1002/eat.23494

Röder, M., Barkmann, C., Richter-Appelt, H., Schulte-Markwort, M., Ravens-Sieberer, U., & Becker, I. (2018). Health-related quality of life in transgender adolescents: Associations with body image and emotional and behavioral problems. *International Journal of Transgenderism*, *19*(1), 78–91. https://doi.org/10.1080/15532739.2018.1425649

Rojo, L., Conesa, L., Bermudez, O., & Livianos, L. (2006). Influence of stress in the onset of eating disorders: Data from a two-stage epidemiologic controlled study. *Psychosomatic Medicine*, *68*(4), 628–635. https://doi.org/10.1097/01.psy.0000227749.58726.41

Romito, M., Salk, R. H., Thoma, B. C., Romito, M., Levine, M. D., & Choukas-Bradley, S. (2021). Exploring transgender adolescents' body image concerns and disordered eating: Semi-structured interviews with nine gender minority youth. *Body Image*, *37*, 50–62.

Rosenberg, M. (1965). Rosenberg Self-Esteem Scale. *Acceptance and Commitment Therapy, Measures package*, *61*(52), 18.

Savage, D., & Miller, T. (2011). How It All Got Started. *It Gets Better Project*. https://itgetsbetter.org/blog/initiatives/how-it-all-got-started/

Schimmel-Bristow, A., Haley, S. G., Crouch, J. M., Evans, Y. N., Ahrens, K. R., McCarty, C. A., & Inwards-Breland, D. J. (2018). Youth and caregiver experiences of gender identity transition: A qualitative study. *Psychology of Sexual Orientation and Gender Diversity*, *5*(2), 273–281. https://doi.org/10.1037/sgd0000269

Serpe, C., Brown, C., Criss, S., Lamkins, K., & Watson, L. (2020). Bisexual women: Experiencing and coping with objectification, prejudice, and erasure. *Journal of Bisexuality*, *20*(4), 456–492. https://doi.org/10.1080/15299716.2020.1820421

Sharpe, H., Patalay, P., Choo, T.-H., Wall, M., Mason, S. M., Goldschmidt, A. B., & Neumark-Sztainer, D. (2018). Bidirectional associations between body dissatisfaction and depressive symptoms from adolescence through early adulthood. *Development and Psychopathology*, *30*(4), 1447–1458. http://dx.doi.org/10.1017/S0954579417001663

Simone, M., Askew, A., Lust, K., Eisenberg, M. E., & Pisetsky, E. M. (2020). Disparities in self-reported eating disorders and academic impairment in sexual and gender minority college students relative to their heterosexual and cisgender peers. *International Journal of Eating Disorders*, *53*(4), 513–524. https://doi.org/10.1002/eat.23226

Watson, L. B., Grotewiel, M., Farrell, M., Marshik, J., & Schneider, M. (2015). Experiences of sexual objectification, minority stress, and disordered eating among sexual minority women. *Psychology of Women Quarterly*, *39*(4), 458–470. https://doi.org/10.1177/0361684315575024

Watson, R. J., Veale, J. F., & Saewyc, E. M. (2017). Disordered eating behaviors among transgender youth: Probability profiles from risk and protective factors. *International Journal of Eating Disorders*, *50*(5), 515–522. https://doi.org/10.1002/eat.22627

Watson, R. J., Wheldon, C. W., & Puhl, R. M. (2020). Evidence of Diverse Identities in a Large National Sample of Sexual and Gender Minority Adolescents. *Journal of Research on Adolescence*, *30*(S2), 431–442. https://doi.org/10.1111/jora.12488