Published in final edited form as:
J Adolesc Health. 2009 September ; 45(3): 238–245. doi:10.1016/j.jadohealth.2009.02.001.

Sexual Orientation Disparities in Purging and Binge Eating From Early to Late Adolescence

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Abstract

Purpose—To describe patterns of purging and binge eating from early through late adolescence in female and male youth across a range of sexual orientations.

Methods—Using data from the prospective Growing Up Today Study, a large cohort of U.S. youth, we investigated trends in past-year self-reports of purging (ever vomit or use laxatives for weight control) and binge eating at least monthly. The analytic sample included 57,668 observations from repeated measures gathered from 13,795 youth ages 12 to 23 years providing information collected by self-administered questionnaires from six waves of data collection. We used multivariable logistic regression models to examine sexual orientation group (heterosexual, "mostly heterosexual," bisexual, and lesbian/gay) differences in purging and binge eating throughout adolescence, with same-gender heterosexuals as the referent group and controlling for age and race/ethnicity.

Results—Throughout adolescence, in most cases, sexual orientation group differences were evident at the youngest ages and persisted through adolescence. Among females and compared to heterosexuals, "mostly heterosexuals," bisexuals, and lesbians were more likely to report binge eating, but only "mostly heterosexuals" and bisexuals were also more likely to report purging. Among males, all three sexual orientation subgroups were more likely than heterosexual males to report both binge eating and purging. Within each orientation subgroup, females generally reported higher prevalence of purging and binge eating than did males.

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Conclusions—Clinicians need to be alert to the risk of eating disordered behaviors in lesbian, gay, bisexual, and "mostly heterosexual" adolescents of both genders in order to better evaluate these youth and refer them for treatment.

Keywords

eating disorders; purging; binge eating; adolescence; sexual orientation; lesbian; gay; bisexual; epidemiology

Introduction

Adolescence is a critical developmental period in the study of eating disorders because symptoms frequently emerge during this time and can influence morbidity in adulthood.[1] Eating disordered behaviors, such as vomiting, laxative or diuretic use, fasting, and binge eating have been associated with negative harmful psychological and physiological sequelae and often require clinical intervention.[1–4] When these behaviors occur in adolescence, especially during peak physiological and psychosocial developmental periods, and when they disproportionately affect marginalized subgroups of youth, the urgency of clinical intervention is amplified.

Research spanning several decades has accumulated evidence of an association between sexual orientation and eating disorder symptoms in adults, particularly in men,[5–8] but only a few studies have examined this relationship in community-based samples of adolescents. Two large school-based studies of Minnesota adolescents found elevated eating disorder symptoms in gay males[9] and males with same-sex sexual partners[10], compared to heterosexual males and males with only other sex partners. Working with a nationally representative, prospective cohort of high school students in Norway, Wichstrøm examined sexual orientation group differences in bulimic symptoms.[11] Both male and female youth with same-sex sexual experience were more likely to report bulimic symptoms than were youth without same-sex sexual experience (estimated three times the risk in females and seven times the risk in males with same-sex sexual experience).[11]

A leading model developed to help explain sexual orientation group disparities in health indictors is Minority Stress Theory, which posits that differential patterns in health are largely driven by antigay stigma, harassment and violence victimization, and social isolation and rejection in the family, school, and community settings.[12,13] The model proposes that in both females and males differences from the heterosexual majority and differences within and among orientation subgroups may be due in part to varying degrees of exposure to deleterious (e.g. stigma, victimization, rejection) and protective (e.g. family support, school and community connectedness) factors.[12–14]

In fact, prior research does suggest that there may be important differences in health experiences across sexual orientation subgroups beyond those observed in comparison to the heterosexual majority. For instance, it is thought that bisexual populations may be at elevated risk for psychological distress and substance use compared to lesbian and gay populations, [15] perhaps due to violence victimization and low levels of protective factors, such as family and school connectedness.[14] Another sexual orientation subgroup – those with some same-sex attractions but do not identify as bisexual – has been found to have elevated risk for a range of health outcomes,[11,16,17] but possibly of a lesser magnitude than seen in bisexual, lesbian, and gay subgroups. In his sample of Norwegian high school students, Wichstrøm reported what appears to be an interim level of risk of bulimic symptoms in youth with "incidental" same-sex attractions that fell between that observed in heterosexuals (lowest risk) and a combined lesbian or gay and bisexual group (highest risk), though formal tests were not reported

comparing all three groups.[11] Studies with samples of sufficient size and orientation diversity are needed to advance our understanding of patterns in disparities that differentially affect subpopulations defined by gender and sexual orientation.

In the Growing Up Today Study (GUTS), a prospective cohort of over 16,000 adolescents living throughout the United States, our research group previously published results of cross-sectional analyses, using a single wave of data, in which we found elevated rates of purging and binge eating in "mostly heterosexual" girls and binge eating in gay and bisexual boys compared to same-gender heterosexuals.[18] For the present report, we now have access to six waves of GUTS data, extending our ability to advance knowledge as to how the prevalence of purging and binge eating may differ in youth across the range of sexual orientations in both genders observed from early through late adolescence. We hypothesized that, compared to same-gender heterosexuals, lesbian, gay, bisexual, and "mostly heterosexual" youth would report higher prevalence of purging and binge eating and would be more likely to have been told by a health care provider that they have an eating disorder. In addition, we hypothesized that gender would modify associations between sexual orientation and purging and binge eating such that the magnitude of disparities observed across sexual orientation groups within males would be larger than those observed within females.

Methods

Study Sample

GUTS cohort participants were age 9 to 14 years at baseline in 1996 and are the children of women participating in the Nurses' Health Study II, a prospective cohort of women.[19] Youth were enrolled upon return of a completed questionnaire after being queried, with permission of their mothers, about their interest in participating in the study. The cohort enrolled 9,039 girls and 7,843 boys, and the racial/ethnic composition of these youth is 93.3% white, 1.5% Asian, 0.9% African American, 1.5% Hispanic, 0.8% American Indian, and 2.2% other race/ethnicity. Since the baseline assessment, questionnaires have been sent annually or biennially.[20] For the present analyses, participants were included who responded to one or more of the questionnaires administered over six waves in 1998, 1999, 2000, 2001, 2003, and 2005. Repeated measures analyses were restricted to youth ages 12 to 23 years at the time of questionnaire completion. This study was approved by the Brigham and Women's Hospital institutional review board.

Measures

Sexual Orientation—Sexual orientation was first assessed on the 1999 questionnaire with an item asking, "Which of the following best describes your feelings? (1) completely heterosexual (attracted to persons of the opposite sex), (2) mostly heterosexual, (3) bisexual (equally attracted to men and women), (4) mostly homosexual, (5) completely homosexual (gay/lesbian, attracted to persons of the same sex), (6) not sure." The responses "mostly homosexual" and "completely homosexual" were collapsed to form a lesbian/gay category because subsample sizes were too small to keep separate in analyses. Sexual orientation was updated on each wave it was reported.

Purging and Binge Eating—Items assessing weight-control behaviors were adapted from the Youth Risk Behavior Surveillance System (YRBSS) questionnaire.[21] To assess vomiting or using laxatives to control weight, participants were asked, "During the past year, did you do any of the following to lose weight or keep from gaining weight?" with "Make yourself throw up" and "Take laxatives" as two of the methods listed. Six response options to gauge frequency of the behaviors ranged from "Never" to "Daily." Respondents reporting any vomiting and/or laxative use to control weight in the past year were coded as having purged.

To assess binge eating, participants were first asked about frequency of binge eating in the past year with a question worded in the following way: "Sometimes people will go on an 'eating binge,' where they eat an amount of food that most people, like their friends, would consider to be very large, in a short period of time. During the past year, how often did you go on an eating binge?" Five response options to gauge frequency of binge eating ranged from "Never" to "More than once a week." Those who reported binge eating at least monthly were then asked, "Did you feel out of control, like you couldn't stop eating even if you wanted to stop?" with the response options "No" or "Yes." Those who reported binge eating at least monthly in the past year while feeling out of control were coded as having binged. In adolescent girls, self-report items assessing vomiting and laxative use for weight control have been found to have high sensitivity (0.93) and specificity (0.86) and those assessing binge eating have been found to have moderate sensitivity (0.53) and specificity (0.78).[22] A final question that was included on the 2005 questionnaire asked participants if a doctor, nurse, or other health care provider had ever told them they had an eating disorder.

Statistical Analysis

With six waves of data from GUTS participants, we investigated sexual orientation group patterns in the prevalence of purging and binge eating from early through late adolescence. Structuring the repeated measures data into a person-period database, in which each person has a number of records equal to the number of waves they responded to, we conducted Generalized Estimating Equations (GEE) analyses. GEE is used to accommodate correlated data both from repeated measures and from siblings clustered within families.[23] This method estimates the population average across the repeated measures and is a commonly used approach to analyzing longitudinal cohort data.[24]

We tested sexual orientation group differences in trends in the prevalence of purging in the past year and binge eating at least monthly in the past year. Models estimated odds ratios (OR) and 95% confidence intervals (CI) with heterosexuals as the referent group and included sexual orientation assessed in the same year as purging and binge eating. Multivariable models controlled for age group (12–14, 15–16, 17–18, 19–20, and 21–23 years) and race/ethnicity, and main analyses were stratified by gender. We also examined age-group-by-sexual-orientation interaction terms and examined differences across the sexual orientation subgroups.

In additional analyses, we examined gender differences in two ways. First, we compared the prevalence of purging and binge eating in females vs. males within each sexual orientation subgroup in repeated measures multivariable models stratified by sexual orientation group and controlling for age group and race/ethnicity. Second, we tested gender-by-sexual-orientation interaction terms in multivariable models combining data from the whole cohort to examine whether gender modified associations between sexual orientation group and purging and binge eating, controlling for age group and race/ethnicity.

Lastly, restricting analyses to data gathered via the 2005 questionnaire, we compared sexual orientation groups on the proportion reporting they had ever been told by a doctor, nurse, or other health care provider that they had an eating disorder. Cross-sectional multivariable logistic models were stratified by gender and controlled for age and race/ethnicity. We used the SAS statistical package version 9.1 (PROC GENMOD) for all analyses.[25]

For the repeated measures analyses, 14,852 participants ages 12 to 23 years provided 63,325 observations collected via the 1998, 1999, 2000, 2001, 2003, and 2005 GUTS questionnaires. Of these observations, 4,534 were excluded for missing sexual orientation, and 499 were excluded from youth who reported being unsure of their orientation. In addition, 624 observations were excluded for missing information on purging and/or binge eating, leaving us with an analytic sample of 57,668 observations (91.1% of total observations before

exclusions) from 13,795 GUTS participants (81.7% of baseline cohort). See Table 1 for the number of participants in each sexual orientation group per wave of data collection and the number of observations per age group. Most participants included in analyses provided multiple repeated measures. Only 9.7% provided data at just one collection wave; whereas, 11.0% provided data on two waves, 12.0% on three waves, and 67.4% on four to six waves.

For analyses examining communication with a health care provider about having an eating disorder, we used responses provided to the long-form version of the 2005 questionnaire. (Most participants completed the survey long-form version, while 9% completed an abbreviated version that did not include the communication item.) Of the 9,500 participants responding to the 2005 long-form questionnaire; 20 were excluded for missing sexual orientation, 2 were excluded for being unsure of their orientation, and 337 were excluded for missing information on whether they had been told they have an eating disorder, resulting in an analytic sample of 9,141 (96.2% of respondents to the 2005 long-form questionnaire).

Results

As shown in Figure 1, throughout adolescence, lesbian/gay, bisexual, and "mostly heterosexual" subgroups among both females and males fairly consistently showed higher past-year prevalence of purging and binge eating. In most cases, orientation group differences were evident at the youngest ages and persisted through adolescence, and females in all groups generally reported higher prevalence than did their male counterparts.

In repeated measures statistical models stratified by gender and comparing trends in prevalence through adolescence, with few exceptions, heterosexuals were the least likely to report purging or binge eating (Table 2). In multivariable models, interaction terms between sexual orientation and age group were not found to be statistically significant. (Data not shown.)

Significant differences were observed in models comparing across sexual orientation subgroups: Bisexual females had a higher odds of purging when compared to both "mostly heterosexual" (OR 1.4; 95% CI 1.0, 1.9; $P<0.05$) and lesbian females (OR 2.1; 95% CI 1.0, 4.2; $P<0.05$); gay males had higher odds of both binge eating (OR 2.6; 95% CI 1.1, 5.9; $P<0.05$) and purging (OR 3.0; 95% CI 1.4, 6.1; $P<0.01$) when compared to "mostly heterosexual" males.

In additional analyses comparing females vs. males within orientation subgroup strata, we found in most cases that females were more likely than males to report purging and binge eating (heterosexual females vs. males: purging OR 11.2 [95% CI 8.9, 14.2] and binge eating OR 6.4 [95% CI 5.0, 8.2]; "mostly heterosexual": OR 5.0 [95% CI 3.1, 8.0] and OR 4.4 [95% CI 2.4, 8.1]; bisexual: OR 4.1 [95% CI 1.6, 10.6] and OR 3.6 [95% CI 0.8, 16.4; $P=0.09$]). In comparing lesbians to gay males, however, gender differences were modest and did not reach statistical significance (females vs. males purging: OR 1.4 [95% CI 0.7, 3.0; $P=0.34$]; binge eating: OR 2.1 [95% CI 0.8, 5.7; $P=0.14$]).

In other analyses to examine gender patterns, in which we combined data from the whole cohort, we tested gender-by-sexual-orientation-group interaction terms. In the purging model, we found the interaction terms to be significant for the "mostly heterosexual," bisexual, and lesbian/gay groups, indicating that males in each of these subgroups experienced an elevated relative risk for purging compared to heterosexual males that was of greater magnitude than that experienced by their female counterparts compared to heterosexual females. In the comparable binge eating model, a similar gender-by-sexual-orientation-group interaction was found only for the gay/lesbian subgroup. (Data not shown.)

Finally, we found most sexual orientation subgroups to be at elevated risk compared to same-gender heterosexuals of ever having been told by a doctor, nurse, or other health care provider that they had an eating disorder, controlling for age and race/ethnicity (Table 3).

Discussion

This study expands our knowledge of temporal patterns in purging and binge eating experienced throughout adolescence, finding that sexual orientation-related disparities emerge early in adolescence in both females and males and largely persist. Our study also underscores the importance of examining differences in health experiences patterned by gender and sexual orientation subgroup.

Our findings are consistent with those of Wichstrøm, who found in a representative sample of Norwegian high school students that youth with same-sex sexual experience were more likely to report bulimic symptoms than were peers without same-sex sexual experience.[11] Wichstrøm also found elevated rates in the subgroup of youth who described themselves as having "incidental" same-sex attractions, who made up 12.8% of females and 4.5% of males in the 12-to-19-year-old Norwegian sample. This group is likely to be comparable to the subgroup of GUTS participants who describe themselves as "mostly heterosexual," who make up approximately 8.3% of females and 4.1% of males in the GUTS sample in a similar age range. It is not known why "mostly heterosexuals" are more likely than heterosexuals to report purging and binge eating, but previous research in our cohort and other studies indicates that this group is at elevated risk for depressive symptoms[26], bullying[27] and violence victimization,[16] all factors that have been found to increase risk for eating disorder symptoms in adolescents.[28] Prior research has identified bisexual populations as perhaps at uniquely elevated risk for mental health and substance use problems,[14,15] an observation that our study partially supports. Among females in the GUTS cohort, bisexuals were at greater risk for purging for weight control but not binge eating compared to "mostly heterosexuals" and lesbians. In our sample, compared to heterosexual females, lesbians reported a higher prevalence of binge eating (though P=0.06), as did "mostly heterosexual" and bisexual females. Binge eating may contribute to higher rates of overweight particularly observed in lesbians compared to heterosexual women,[29] but more research is needed to explore this relationship.

Findings from studies with adult samples suggest that the disparities we observed throughout adolescence are likely to persist to some extent in adulthood, especially in men. Studies of community-based and clinical samples have found gay and bisexual men to have greater likelihood of reporting weight concerns, body dissatisfaction, and dietary restraint than heterosexual men.[5,8,30] Research findings among women have been less consistent, and several adult studies comparing lesbian and heterosexual women have found few differences between the groups.[5,31] Feldman and Meyer found gay and bisexual men ages 18 to 59 years to report higher rates of bulimia than did heterosexual men, but they did not find significant differences comparing lesbian and bisexual women to heterosexual women.[7] An explanation for the gender difference in consistency of findings may be due to the relatively high prevalence of eating disorder symptoms in heterosexual females (unlike their heterosexual male counterparts) and therefore the low magnitude of relative measures (e.g. odds ratios, risk ratios) of orientation disparities among women compared to the magnitude of disparities observed among males. Most studies to date may not have had sufficient sample sizes to detect statistically significant orientation group differences of low magnitude expected among women.

Our study extends the prior research in at least two important ways. First, we were able to examine patterns in prevalence across developmental periods throughout adolescence, revealing that disparities in purging and binge eating emerge as early as ages 12 to 14 years

and largely persist through late adolescence. Interestingly, visual displays of our data presented in Figure 1 are suggestive of a possible downturn in prevalence in the lesbian and bisexual female groups and also in the gay (but not bisexual) male group by the older age periods, with rates of purging and binge eating moving toward those of heterosexual peers perhaps by young adulthood. Rosario et al. and others have proposed that integration of a lesbian, gay, or bisexual identity over time through adolescence may have positive effects on self-esteem and psychological health,[32,33] though further research is needed to more fully explore hypothesized reductions in symptoms in lesbian and gay and perhaps other subgroups as they transition into adulthood.

Second, our study is substantially larger than most prior research and includes six waves of repeated measures, allowing us to document evidence that gender and orientation subgroup modify the relationship between sexual orientation and purging and binge eating in adolescents. The relative odds estimated within the male subsample for “mostly heterosexual,” bisexual, and gay males were substantially larger than those estimated within the female sample. That said, it is important to recognize that in most cases females within each orientation subgroup reported higher prevalence of purging and binge eating than did their male counterparts throughout the observed age period.

The emergence of disparities early in adolescence in both females and males suggests this vulnerability may be driven in part by factors shared in common by both genders, such as the types of factors posited in Minority Stress Theory.[12,13] Earlier age of recognition and disclosure of lesbian, gay, or bisexual sexual orientation is linked with abuse and bullying victimization and psychological distress,[34,35] and disapproval from parents is positively associated with stress[36] and victimization by parents.[37] In this context, it is plausible that lesbian, gay, bisexual, and “mostly heterosexual” youth in early and middle adolescence may adopt a range of unhealthful coping methods,[13] including unhealthful eating and weight control patterns. Stress and negative affect have been found to be associated with symptoms of eating disorders.[38,39]

Our study has several potential limitations. Generalizability of the findings is reduced by the cohort’s composition: More than 90% of participants are of white race/ethnicity and all are children of nurses. Nevertheless, GUTS recruitment was not based on sexual orientation, which therefore reduces sexual-orientation-related selection bias that can be common to samples recruited through lesbian, gay, and bisexual community settings. Small subgroup sizes for bisexual males and lesbians may have reduced stability of estimates for these groups. In addition, we did not examine other deleterious weight-control behaviors characteristic of clinical and subclinical eating disorders, such as excessive exercise, use of diuretics, and fasting nor did we conduct clinical interviews to establish diagnosis of an eating disorder.[3,40] Disparities may also exist in these other behaviors and in full-criteria disorder and therefore warrant further study.

Implications

Health care providers working with youth need to be alert to the elevated risk of eating disordered behaviors in “mostly heterosexual,” bisexual, and lesbian/gay adolescents of both genders. Behaviors such as binge eating and vomiting, laxative or diuretic use, excessive exercising, and fasting for weight control have been linked with many harmful psychological and physiological effects on health,[1–4] and these effects are particularly concerning when they coincide with developmental periods in which healthy growth and maturation are expected to occur. Lesbian, gay, bisexual, and “mostly heterosexual” youth engaging in any of these behaviors need to be evaluated for symptom severity and referred for appropriate treatment by providers who are sensitive to the specific needs of these populations. In addition, new research

initiatives will need to examine hypothesized causes of disparities in order to develop preventive interventions that will be effective for these youth.

Acknowledgments

The authors would like to thank the GUTS team of investigators for their contributions to this paper and the thousands of young people across the country participating in the Growing Up Today Study. This study was funded by the Lesbian Health Fund of the Gay and Lesbian Medical Association, Robert Wood Johnson Foundation, and grants HD045763, DK46834, DK59570, and HL03533 from the National Institutes of Health. S.B. Austin, H.L. Corliss, and A.E. Field are supported by the Leadership Education in Adolescent Health project, Maternal and Child Health Bureau, HRSA grant 6T71-MC00009-17. J. Haines is supported by grant 200510MFE-154556-10955 from the Canadian Institutes of Health Research.

Sources of Funding: This study was funded by the Lesbian Health Fund of the Gay and Lesbian Medical Association; Robert Wood Johnson Foundation; grants HD045763, DK46834, DK59570, and HL03533 from the National Institutes of Health; Leadership Education in Adolescent Health Project grant from the Maternal and Child Health Bureau, Health Resources and Services Administration, Department of Health and Human Services; and grant 200510MFE-154556-10955 from the Canadian Institutes of Health Research.

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Figure 1a. Females: % Purging in Past Year[a]

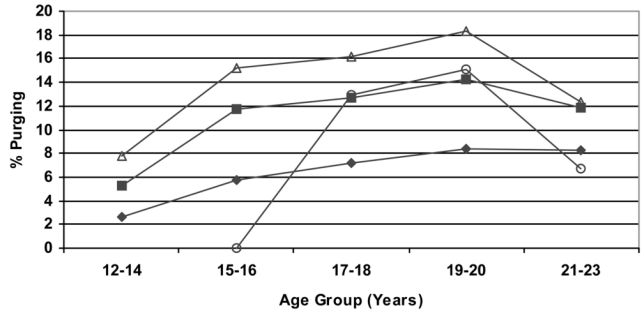

Figure 1b. Males: % Purging in Past Year

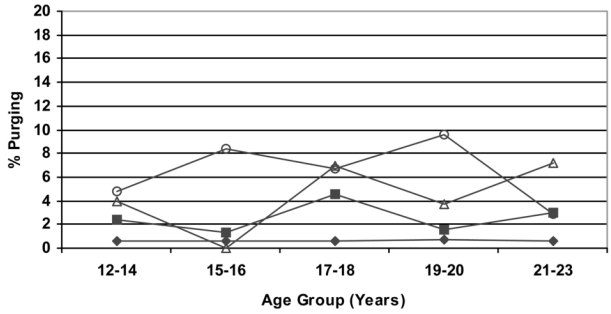

Figure 1c. Females: % Binge Eating at Least Once Per Month in Past Year[a]

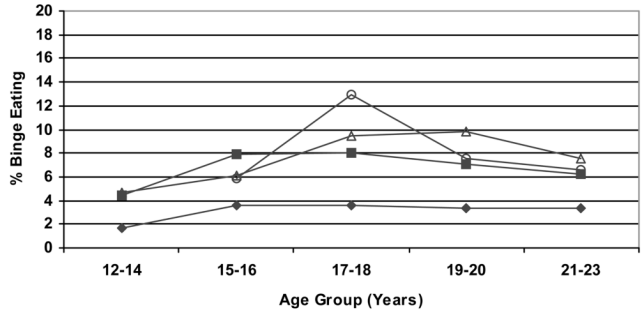

Figure 1d. Males: % Binge Eating at Least Once Per Month in Past Year

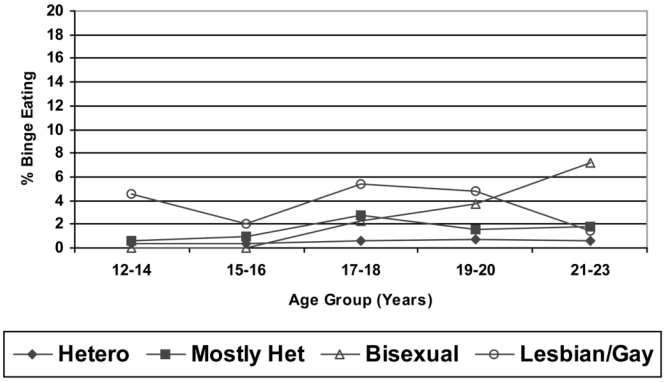

Figure 1.

Patterns in reports of past year purging and binge eating by sexual orientation from early to late adolescence in a prospective cohort of U.S. adolescent females and males over six waves of data collection

[a] Data not shown for lesbians in 12–14 year age group due to small sample size (fewer than 10 observations).

Table 1

Number of participants by sexual orientation group per wave of data collection and the number of repeated-measures observations by sexual orientation and age group across six waves of data collection in a U.S. prospective cohort of adolescents (N=13,795).

Wave of Data Collection	**1998**	**1999**	**2000**	**2001**	**2003**	**2005**
FEMALES (n = 7,933)	n = 4,613	n = 5,948	n = 5,957	n = 6,066	n = 6,458	n = 6,123
Heterosexual	4,273	5,506	5,288	5,340	5,747	5,210
Mostly Heterosexual	288	381	547	591	537	713
Bisexual	44	52	103	116	129	133
Lesbian	8	9	19	19	45	67
MALES (n = 5,862)	n = 2,992	n = 4,009	n = 3,864	n = 3,870	n = 4,112	n = 3,656
Heterosexual	2,850	3,824	3,637	3,635	3,843	3,319
Mostly Heterosexual	109	143	159	167	160	224
Bisexual	14	20	25	22	33	22
Gay	19	22	43	46	76	91
Age Groups (Years)	**12–14**	**15 – 16**	**17 – 18**	**19 – 20**	**21 – 23**	
FEMALES (# Obs[a] = 35,165)	# Obs = 7,602	# Obs = 8,457	# Obs = 8,007	# Obs = 6,549	# Obs = 4,550	
	# Obs (%)	# Obs (%)	# Obs (%)	# Obs (%)	# Obs (%)	
Heterosexual	7,153 (94.1)	7,610 (90.0)	7,081 (88.4)	5,675 (86.7)	3,845 (84.5)	
Mostly Heterosexual	379 (5.0)	700 (8.3)	759 (9.5)	679 (10.4)	540 (11.9)	
Bisexual	64 (0.8)	130 (1.5)	136 (1.7)	142 (2.2)	105 (2.3)	
Lesbian	6 (<0.1)	17 (0.2)	31 (0.4)	53 (0.8)	60 (1.3)	
MALES (# Obs[a] = 22,503)	# Obs = 5,547	# Obs = 5,467	# Obs = 4,960	# Obs = 3,896	# Obs = 2,633	
	# Obs (%)	# Obs (%)	# Obs (%)	# Obs (%)	# Obs (%)	
Heterosexual	5,334 (96.2)	5,174 (94.6)	4,627 (93.3)	3,590 (92.1)	2,383 (90.5)	
Mostly Heterosexual	167 (3.0)	218 (4.0)	215 (4.3)	196 (5.0)	166 (6.3)	

Wave of Data Collection	1998	1999	2000	2001	2003	2005
Bisexual	25 (0.5)	27 (0.5)	43 (0.9)	27 (0.7)	14 (0.5)	
Gay	21 (0.4)	48 (0.9)	75 (1.5)	83 (2.1)	70 (2.7)	

[a] # Obs = number of repeated-measures observations.

Table 2

Multivariable adjusted odds ratios (OR) and 95% confidence intervals (CI) from repeated measures analyses of purging, binge eating, and bulimic behaviors by sexual orientation and age group in a U.S. prospective cohort of adolescents across six waves of data collection[a]

	Purging[b] OR (95% CI)[a]	Binge Eating[c] OR (95% CI)[a]
FEMALES		
Sexual Orientation		
Heterosexual	Ref	Ref
Mostly Heterosexual	1.6 (1.3, 1.8)###	1.8 (1.5, 2.3)###
Bisexual	2.2 (1.6, 2.9)###	2.2 (1.6, 3.2)###
Lesbian	1.0 (0.5, 2.0)	2.1 (1.0, 4.6)
Age Group (Years)		
12 to 14	Ref	Ref
15 to 16	2.2 (1.9, 2.5)###	2.1 (1.8, 2.6)###
17 to 18	2.7 (2.3, 3.1)###	2.2 (1.8, 2.7)###
19 to 20	3.2 (2.7, 3.7)###	2.0 (1.6, 2.4)###
21 to 23	2.9 (2.4, 3.4)###	1.8 (1.4, 2.3)###
MALES		
Sexual Orientation		
Heterosexual	Ref	Ref
Mostly Heterosexual	3.9 (2.3, 6.6)###	2.8 (1.5, 5.4)##
Bisexual	7.4 (2.9, 18.8)###	4.6 (1.2, 18.1)*
Gay	11.6 (6.6, 20.3)###	7.2 (3.7, 14.0)###
Age Group (Years)		
12 to 14	Ref	Ref
15 to 16	1.0 (0.6, 1.5)	0.9 (0.5, 1.5)
17 to 18	1.2 (0.8, 1.9)	1.7 (1.0, 2.8)*
19 to 20	1.3 (0.8, 2.0)	1.8 (1.0, 3.0)*
21 to 23	0.9 (0.5, 1.6)	1.5 (0.8, 2.8)

[a] ORs and 95% CIs adjusted for sexual orientation, age group, and race/ethnicity.

[b] Purging defined as vomiting and/or using laxatives to control weight in the past year.

[c] Binge eating defined as binge eating at least once per month in past year.

* $P<0.05$

# $P<0.01$

$P<0.001$

$P<0.0001$

Table 3

Lifetime prevalence and multivariable adjusted odds ratios (OR) and 95% confidence intervals (CI) of participant ever being told of having an eating disorder by a health care provider in a U.S. cohort of adolescents (N= 9,141)[a]

	Ever Told of Having Eating Disorder by Health Care Provider	
	%	OR (95% CI)[a]
FEMALES		
Sexual Orientation		
Heterosexual	3.6	Ref
Mostly Heterosexual	7.1	2.0 (1.5, 2.8)[###]
Bisexual	11.7	3.6 (2.1, 6.3) [###]
Lesbian	8.2	2.3 (0.9, 5.9)
MALES		
Sexual Orientation		
Heterosexual	0.2	Ref
Mostly Heterosexual	0.5	2.4 (0.3, 21.0)
Bisexual	4.8	24.8 (2.9, 212.7)[#]
Gay	2.3	12.0 (2.2, 65.4)[#]

[a] ORs and 95% CIs adjusted for sexual orientation, age, and race/ethnicity.

[*] $P<0.05$

[#] $P<0.01$

[##] $P<0.001$

[###] $P<0.0001$