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Sexual orientation and disordered eating behaviors among self-identified male and female college students

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ABSTRACT

This study compared the risk of a) clinically diagnosed eating disorders, and b) disordered eating behaviors, separately among three groups of United States college students, controlling for known covariates. These groups included college students self-identifying as: 1) gay/lesbian; 2) bisexual; and, 3) unsure, with self-identified heterosexuals as the reference. Data from the American College Health Association's National College Health Assessment II (2008–2009) were utilized (N = 110,412). Adjusted logistic regression analyses, stratified by self-reported gender, examined the effect of self-identified sexual identity on clinical eating disorder diagnosis and disordered eating behaviors. Covariates included self-reported binge drinking (past 2 weeks), stress (last 12 months), smoking (past 30 days), depression (past 12 months), fraternity/sorority membership, college athletics participations, and race. Additional logistic regression sub-analyses examined sexual minorities only, with gay/lesbian as the referent. Gay, unsure, or bisexual men were at significantly increased odds to report both clinical eating disorders and disordered eating behaviors when compared to heterosexual men in both the unadjusted and adjusted models ($p < .002$). All sexual minority men and women were significantly more likely to report dieting to lose weight compared to heterosexual men and women ($p < .002$). Targeted disordered eating and eating disorder prevention efforts are needed for those who are sexual minorities, particularly for sexual minority men.

1. Introduction

Eating disorders are associated with both physical and mental health problems (Johnson, Spitzer, & Williams, 2001; Wonderlich & Mitchell, 1997). However, researchers suggest that more diverse samples are needed to better understand its etiology (Petrie & Rogers, 2001). Sell and Becker (2001) state that "one of the greatest threats to the health of lesbian, gay, and bisexual Americans is the lack of scientific information about their health" (pp. 876). Notably, sexual minorities (SM) might experience more stress according to the Minority Stress Model (Meyer, 2003) and may be more susceptible to developing eating disorders and disordered eating behaviors. Not clinically diagnosed with the DSM-V (APA, 2013), disordered eating includes unhealthy behaviors to control one's weight, including fasting or skipping meals, using diet pills, laxatives, or vomiting (Croll, Neumark-Sztainer, Story, & Ireland, 2002). Gay men are at increased risk for both eating disorders and disordered eating than are heterosexual men (Hospers & Jansen, 2005; Yelland & Tiggemann, 2003). However, the extent to which both eating disorders and disordered eating are present among lesbian and bisexual women is unclear (Feldman & Meyer, 2007).

The prevalence of eating disorders or disordered eating among those self-identified as unsure regarding their sexual orientation is unknown because they are: 1) excluded from analyses due to the low sample size (Austin et al., 2009); 2) collapsed with other SM groups (Zhao, Montoro, Igartua, & Thombs, 2010); or 3) collapsed with heterosexuals (Remafedi, French, Story, Resnick, & Blum, 1998). Although collapsing into a single SM group is a traditional practice in research, combining these SM groups may suppress unique differences among the independent groups (Matthews, Blosnich, Farmer, & Adams, 2014).

Therefore, the purpose was to compare differences between sexual orientations (i.e., heterosexual, gay/lesbian, bisexual, unsure) among (a) clinically diagnosed eating disorders, and (b) disordered eating in a large, national sample of United States college students. SM men were hypothesized to experience higher odds of disordered eating

Abbreviations: SM, sexual minority.

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compared to heterosexual men. No hypothesis was generated for women, as the research is mixed.

2. Material and methods

2.1. Sample

This study utilized data from the American College Health Association National College Health Assessment (ACHA-NCHA) collected during the 2008–2009 academic year (ACHA, 2008; ACHA, 2009). More detailed information about the survey is published elsewhere (ACHA, 2004; ACHA, 2005).

2.2. Instrumentation

Independent variables included two questions: "What is your gender?" (male/female/transgender) and "What is your sexual orientation?" (heterosexual, gay/lesbian, bisexual, or unsure). Dependent variables included disordered eating behaviors and clinically diagnosed eating disorder questions. The question "Within the last 12 months, have you been diagnosed or treated by a professional for any of the following?" indicated clinically diagnosed eating disorders. Anorexia and bulimia were the responses to this question selected for this study from a list of conditions (e.g., anxiety, etc.). Responses were coded as "No, not diagnosed" or "Yes, diagnosed". Disordered eating behaviors were obtained with the question: "Within the last 30 days, did you do any of the following?": (a) 'diet to lose weight' (yes/no); (b) 'vomit or take laxatives to lose weight' (yes/no); and, (c) 'take diet pills to lose weight' (yes/no). These questions have been utilized in previous studies to examine unhealthy weight loss practices (Matthews, Zullig, Ward, Horn, & Huebner, 2012; Thatcher & Rhea, 2003; Wharton, Adams, & Hampl, 2008). Analyses were stratified by gender, due to differential health effects by gender for sexual orientation (Lindley, Walsemann, & Carter, 2011).

2.3. Data analyses

Descriptive statistics and adjusted logistic regressions were conducted via PC-SAS, version 9.3. A Bonferroni correction controlled for alpha inflation; results were considered statistically significant at $p < .002$. Covariates included race, sorority/fraternity membership, college athletic participation, cigarette use (past 30 days), stress levels (past 12 months), binge drinking (five or more drinks at one sitting during the past two weeks), and depression (last 12 months), based on previous research with SMs and/or eating disorder behaviors (e.g., Basow, Foran, & Bookwala, 2007; Blosnich, Jarrett, & Horn, 2010; Holm-Denoma, Scaringi, Gordon, Van Orden, & Joiner, 2009; Reel, 2013; Safren & Heimberg, 1999). Although there is some shared variance between smoking and binge drinking in the current study (Spearman rank $r = .38$, $p < .0001$), these covariates were included enhance understanding of the relationship between SMs and their engagement in unhealthy dieting behaviors, and clinically diagnosed eating disorders. All covariates were entered simultaneously into the models.

After removing those who reported being transgender ($n = 175$, 0.015%), those who did not report their gender or sexual orientation ($n = 2375$, 2.1%), and those with incomplete data on the dependent variables ($n = 828$, 0.073%), a total of 110,412 participants were included in subsequent analyses. Those who were excluded were significantly less likely to diet to lose weight, $\chi^2(1, N = 111{,}048) = 20.42$, $p < .01$; significantly more likely to report vomiting/laxatives to lose weight, $\chi^2(1, N = 110{,}669) = 16.50$, $p < .01$; significantly more likely to take diet pills to lose weight, $\chi^2(1, N = 110{,}601) = 31.33$, $p < .01$ during the past 30 days; and, significantly more likely to report an eating disorder diagnosis, $\chi^2(1, N = 110{,}345) = 42.44$, $p < .01$ than those who were not excluded.

3. Results

Approximately 66% ($n = 72{,}653$) of the respondents identified as women and most respondents (92.6%, $n = 102{,}191$) self-identified as heterosexual. Sample characteristics are in Table 1.

3.1. Main analyses

Because of the small proportion of students who reported having been clinically diagnosed or treated for both bulimia or anorexia during the past 12 months (see Table 1), endorsement of bulimia or anorexia diagnoses/treatment were combined into one category (i.e., "clinically diagnosed eating disorder") for the main analyses and dichotomized into 'yes (diagnosed)' and 'no (not diagnosed)' categories for analysis.

Table 1
Sample characteristics by gender.

Group	Men 37,760 n (%)	Women 72,652 n (%)	Total 110, 412
Mean Age (*SD*)	22.4 (5.5)	22.1 (5.7)	22.1 (5.7)
Sexual Orientation			
Heterosexual	34,568 (91.5)	67,623 (93.1)	102,191
Gay/Lesbian	1653 (4.4)	1152 (1.6)	2805
Bisexual	857 (2.3)	2553 (3.5)	3110
Unsure	682 (1.8)	1324 (1.8)	2006
Enrollment status			
Full-time	35,230 (93.3)	67,348 (92.7)	102,578
Part-time	2228 (5.9)	4795 (6.6)	,023
Other	302 (0.8)	509 (0.7)	811
Sorority/Fraternity Member			
Yes	3418 (9.0)	6425 (8.8)	9843
No	34,342 (91.0)	66,227 (91.2)	100,569
College athletics participation			
Yes	20,336 (53.9)	21,668 (29.8)	42,004
No	17,424 (46.1)	50,984 (70.2)	68,408
Bulimia diagnosis by professional (last 12 months)			
Yes	125 (0.3)	749 (1.0)	874
No	37,635 (99.7)	71,903 (99.0)	109,538
Anorexia diagnosis by professional (last 12 months)			
Yes	129 (0.4)	779 (1.1)	908
No	37,631 (99.6)	71,873 (98.9)	109,504
Dieted to lose weight (past 30 days)			
Yes	9746 (25.8)	31,027 (42.7)	40,773
No	28,014 (74.2)	41,625 (57.3)	69,639
Took diet pills to lose weight (past 30 days)			
Yes	803 (2.1)	3224 (4.4)	4027
No	36,957 (97.9)	69,428 (95.6)	106,385
Laxatives/vomited to lose weight (past 30 days)			
Yes	319 (0.8)	2695 (3.7)	3014
No	37,441 (99.2)	69,957 (96.3)	107,398
Cigarette use, past 30 days			
No	23,562 (62.4)	48,677 (67.0)	72,239
Yes, but not last 30 days	6606 (17.5)	13,005 (17.9)	19,611
1+ days	7592 (20.1)	10,970 (15.1)	18,562
Binge drank, past two weeks			
No	20,655 (54.7)	50,275 (69.2)	70,930
1+ times	17,105 (45.3)	22,377 (30.8)	39,482
Stress levels, past 12 months			
None	1238 (3.3)	436 (0.6)	1674
Less than average	5127 (13.5)	3850 (5.3)	8977
Average	15,324 (40.6)	27,826 (38.3)	43,150
More than average	13,321 (35.3)	32,621 (44.9)	45,942
Tremendous	2750 (7.3)	7919 (10.9)	10,669
Depressive symptoms, past 12 months			
Yes	9931 (26.3)	23,903 (32.9)	33,834
No	27,829 (73.7)	48,749 (67.1)	76,578