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Lesbian, gay, and bisexual college student perspectives on disparities in weight-related behaviors and body image: A qualitative analysis

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Structured Abstract

Aims and objectives—To (1) explore college students' perceived sexual orientation-related barriers to engaging in physical activity, eating healthfully, and maintaining healthy body images and (2) identify types of campus resources on physical activity, healthy eating and body image available to lesbian, gay, and bisexual college students.

Background—Previous research has highlighted sexual orientation disparities in weight status, physical activity, healthy eating, and body image. Despite this, little is known about the context surrounding these disparities.

Design—Cross-sectional study using individual interviews.

Methods—Thirty (15 males, 15 females) lesbian, gay, bisexual, queer, and pansexual-identified college students, ages 18–30 participated in the study. Quasi-inductive coding was used to analyze transcribed interview data and an iterative coding process was used to organize data into themes.

Results—Many felt their sexual orientation helped them be physically active, engage in healthful eating habits, and have a positive body image. However, sexual orientation was also identified as a stressor that adversely impacted physical activity and eating habits.

Conclusions—LGB students may have to negotiate their sexuality in ways that could adversely influence their physical activity, eating habits, and body image. Both clinical and institutional interventions should be inclusive of all people, including LGB, queer, and pansexual students. Further, tailored interventions to meet the specific health needs of sexual minority populations are needed.

Relevance to clinical practice—Clinicians need to understand the context in which sexual minority young adults experience health promotion messaging and programming. Clinic-based tailored interventions are critical as part of a multi-faceted approach in promoting physical activity and healthier eating habits for all young people, including LGB, queer, and pansexual, in order to more effectively address the prevention of chronic diseases.

Keywords

college students; sexual orientation; physical activity; nutrition; body image; disparities; qualitative analysis

INTRODUCTION

There is a substantial dearth on research on weight-related health among lesbian, gay, and bisexual (LGB) individuals, as highlighted by a 2011 Institute of Medicine (IOM) report prioritizing research in this area (Institute of Medicine 2011). Since the release of the IOM report, research on weight-status disparities across sexual orientation groups has increased (Case *et al.* 2004, Boehmer *et al.* 2007, Austin *et al.* 2009, Boehmer & Bowen 2009, Dilley *et al.* 2009, Conron *et al.* 2010, Deputy & Boehmer 2010, 2014, Centers for Disease Control and Prevention 2011, Fredriksen-Goldsen *et al.* 2012, Blosnich & Silenzio, 2013, Fredriksen-Goldsen *et al.* 2013, Blosnich *et al.* 2014, Garland-Forshee *et al.* 2014, Rosario *et al.* 2014, Ward *et al.* 2014, Laska *et al.* 2015), however, there is still a substantial lack of research on sexual orientation disparities in weight behaviors such as physical activity, disordered eating behaviors, and dietary habits. Further, there is little understanding of the environmental, social, and behavior context surrounding potential disparities in weight behaviors.

BACKGROUND

A growing body of research reveals a disproportionate burden of obesity (Case *et al.* 2004, Boehmer *et al.* 2007, Austin *et al.* 2009a, Boehmer & Bowen 2009, Dilley *et al.* 2009, Conron *et al.* 2010, Deputy & Boehmer 2010, 2014, Centers for Disease Control and Prevention 2011, Fredriksen-Goldsen *et al.* 2012, Blosnich & Silenzio, 2013, Fredriksen-Goldsen *et al.* 2013, Blosnich *et al.* 2014, Garland-Forshee *et al.* 2014, Rosario *et al.* 2014, Ward *et al.* 2014, Laska *et al.* 2015), insufficient physical activity (Centers for Disease Control and Prevention 2011, Dilley *et al.* 2009, Fredriksen-Goldsen *et al.* 2013, Calzo *et al.* 2014, Garland-Forshee *et al.* 2014, Rosario *et al.* 2014, Laska *et al.* 2015), poor eating habits

(Centers for Disease Control and Prevention, 2011; Rosario *et al.* 2014, Laska *et al.* 2015), disordered eating (Austin *et al.* 2004, Austin *et al.* 2009, Centers for Disease Control and Prevention 2011, Austin *et al.* 2012, Diemer *et al.* 2015, Laska *et al.* 2015), and poor body image (Laska *et al.* 2015) among LGB individuals, with some differences across gender (Austin *et al.* 2004, Austin *et al.* 2009a, Austin *et al.* 2009b, Dilley *et al.* 2009, Conron *et al.*, 2010, Centers for Disease Control and Prevention 2011, Fredriksen-Goldsen *et al.* 2013, Blosnich *et al.* 2014, Calzo *et al.* 2014, Deputy & Boehmer 2014, Garland-Forshee *et al.* 2014, Rosario *et al.* 2014, Ward *et al.* 2014, Laska *et al.* 2015). However, few studies have explored contributing factors to these high levels of concern in LGB individuals. Given lack of research on reasons underlying these disparities in weight-related concerns across sexual orientation, qualitative research methods are particularly useful for gaining in-depth, contextualized understanding of LGB individuals' experiences with weight-related behaviors and body image.

In one study, researchers conducted focus groups with LGB women to explore attitudes and beliefs regarding barriers to healthy eating and physical activity (Bowen *et al.* 2008). Despite a desire to eat healthfully and be physically active, participants experienced general barriers to engaging in these healthy behaviors, such as confusion, lack of knowledge, and time constraints that were not specific to their sexual orientation. Although several qualitative studies have examined body image among LGB men, particularly gay men (Morgan & Arcelus 2009, Sanchez *et al.* 2009, Duncan 2010), few have explored gay men's experiences with nutrition, physical activity, or weight control behaviors (Morgan & Arcelus 2009).

Barriers to physical activity and healthy eating among LGB individuals may vary by life stage and situational context. Young adulthood, typically defined as ages 18–30 years (VanKim *et al.* 2012), is a developmental period associated with both deterioration in weight-related behaviors (Gordon-Larsen *et al.* 2004, Nelson *et al.* 2006, Park *et al.* 2006, Larson *et al.* 2007, Matthews *et al.* 2008, Nelson *et al.* 2008, Gordon-Larsen *et al.* 2010, Popkin 2010), and exploration of sexual orientation (Rosario *et al.* 2006, Savin-Williams & Ream 2007, Igartua *et al.* 2009). A large proportion of young adults are enrolled in college (National Center for Education Statistics 2013), which may provide a unique situational context for intervention delivery. We previously found differences between LGB and heterosexual college students for eating behaviors, physical activity, purging behaviors, binge eating, and body satisfaction (*blinded for review purposes*). Other studies have also found disparities across sexual orientation in unhealthy weight control behaviors and physical activity from adolescence into young adulthood (Austin *et al.* 2009b, Calzo *et al.* 2014).

To our knowledge, no studies have explored sexual orientation-related barriers to physical activity, healthy eating, and positive body image experienced by LGB college students. While certain barriers to physical activity and healthy eating are common across sexual orientation and age groups (such as lack of time or bad weather), LGB college students may experience unique barriers because of their sexual orientation; these barriers could be rooted in conditions related to discrimination, stigmatization, or prejudice (Hatzenbuehler 2009, Meyer 2003). Understanding challenges experienced by LGB college students is important

to inform policy and programmatic changes on college campuses that address and reduce these individuals' disproportionately high level of weight-related concerns.

Building on our previous quantitative work (*blinded for review purposes*) and to better understand LGB college students' weight-related health, the purpose of this qualitative study was to explore the context surrounding weight-related health among LGB college students. To achieve this aim, we elicited information on (1) college students' perceived sexual orientation-related barriers to engaging in physical activity, eating healthfully, and maintaining a healthy body image and (2) types of resources on physical activity, healthy eating, and body image LGB college students needed.

METHODS

Study population, design, measures, and collection

The study sample included a diverse group of non-heterosexual-identified college students (Table 1). Non-heterosexual identities provided by participants during recruitment included lesbian, gay, bisexual, queer, and pansexual. The terms queer and pansexual may reflect sexual attraction to a broader range of gender expressions than a simple male/female binary. The choice behind identifying as queer or pansexual varies from person to person; however, both identities recognize a degree of fluidity and instability in both sexuality and gender expression that LGB identities may not sufficiently capture (Halperin 2003). Other sexual identities, such as asexual or questioning, although eligible for the study, did not respond by the end of the data collection period. Similarly, all gender identities were eligible, however, study participants identified their gender as either "male" or "female."

Eligibility criteria included being 18–30 years old and currently enrolled as a college student. Participants were recruited from a single, large, urban university. Flyers were posted in public spaces and electronically distributed through student-run LGB organizations on-campus. Further, we recruited participants at the Twin Cities Pride festival (a local annual celebration of the LGBTQ community) although these participants also attended the same university. Interested individuals contacted study staff to confirm eligibility. All interviews were conducted by the first author, were audio-recorded, and transcribed verbatim. A total of 30 interviews (15 male, 15 female) were conducted between July 2013 and February 2014, lasting 15–68 minutes (average length: 34:18). Participants received a \$20 gift card incentive upon interview completion.

A semi-structured interview guide was used (Table 2), with probes, follow-up questions, and prompts provided as necessary to delve into participants' views and experiences. Question development was partially informed by findings from our previous epidemiologic research on weight-related sexual orientation disparities among college students attending 2- and 4-year institutions throughout Minnesota (*blinded for review purposes*). Generally, interviews started with questions regarding barriers to physical activity and healthy eating, followed by questions on body image. Finally, questions assessed need for campus resources for physical activity, healthy eating, and body image that addressed participant barriers related to sexual orientation. Included was a question about a hypothetical LGB-specific physical activity program at the campus recreation center and whether participants would be interested in

such a resource. Participants also completed a brief demographic survey, assessing gender, sexual orientation, race, educational attainment, current degree program, employment, and self-reported height and weight.

This analysis focused on aspects of body image, physical activity, healthy eating, and resources related to participants' sexual orientation. Participants also noted common barriers to physical activity and healthy eating not specific to their sexual orientation, such as lack of time and motivation as well as high cost and lack of access to healthy foods, which are not presented here.

Written consent was obtained from all participants. The University of Minnesota IRB approved all aspects of this study.

Data coding and analysis

All transcripts were cross-checked with audio recordings for accuracy prior to coding. Coding and analyses were conducted using ATLAS.ti 7 (ATLAS.ti Scientific Software Development GmbH, 2002–2012).

A quasi-inductive coding technique was used to analyze interview transcripts (Saldana 2009). More specifically, there were two cycles of coding conducted by the first author and reviewed by the research team throughout the analysis process. In the first cycle, participant descriptors, including information from the demographic survey, were added to the dataset as a first step. The second step was structural coding, or grouping similar responses under a common code before more detailed coding (Saldana 2009). Further, during this step, we developed appropriate categories that can be used to summarize and explain the data. Questions posed within the interview formed the basis for which responses were generally grouped (e.g., physical activity barriers, body image) and additional groupings were added later when responses fell outside the topics of the interview script. The third step was descriptive coding, which involved coding individual responses with key words or short phrases (e.g., gym discomfort, added layer of stress around sexuality) that represent closely what was shared by each participant.

After the first cycle of coding, a second cycle of coding was completed to identify overarching themes as well as distinctions within and across participant sub-groups (i.e., gender and sexual orientation). This process involved going through the interview data again and conducting pattern coding, where common codes (generated from the first cycle) were conceptually grouped into similar categories based on study aims to identify common themes across the participants' data. Overall, this iterative coding process involved examining and reexamining coding decisions for each interview to ensure that data were coded consistently.

Data were carefully examined by gender to determine any differences and similarities within and across genders. Code frequency counts were assessed for additional insight and demonstrated patterns.

RESULTS

Findings were divided into four main themes discussed below: 1) body image, 2) physical activity, 3) healthy eating, and 4) resources. Resulting themes are summarized in Tables 3–5, with supporting quotes for each theme.

Body image

There were three body image sub-themes related to sexual orientation: one reflecting a more positive body image due to sexual orientation and two which were negative (Table 3). About one third of women experienced more positive body images with greater diversity of body types and acceptance of that diversity within the LGB community. Some shared examples of having LGB friends who had healthier body images than their non-LGB peers. As a corollary, only two women discussed having negative experiences or perceptions of body image specific to the LGB community. More often, women talked about having negative experiences regarding female bodies within society at-large.

In contrast, two negative body image sub-themes emerged among men only. Nearly all men talked about the emphasis and pressure among gay males to have a particular physique and appearance. Many of these comments were associated with needing to be seen as sexually desirable to other gay men. Further, nearly half of the men talked about masculinity in the gay male community as an influence on their body image and weight-related behaviors. Many men felt that although masculinity, in general, was defined by being muscular and appearing more athletic, being gay or bisexual intensified this particular physical emphasis. Several discussed how masculine body images in the gay male community consisted of being muscular yet thin, noting that emphasis on thinness was unique to the gay male community.

Physical activity

Nearly half of participants (n=14) noted that they did not attribute any existing physical activity barriers to their sexual orientation. Similarly, nearly half of participants noted that their sexual orientation supported them in being more physical activity through perceived social norms rather than acting as a barrier (Table 4). However, over half of women and one-third of men reported some level of discomfort at the gym and/or campus recreation facilities. Many of these participants attributed their discomfort to factors such as feeling that they need to look a certain way at the gym (which some participants shared was rooted in their perceived body image expectations within the LGB community) or other aspects of the gym environment that create social barriers. Not all participants who shared experiences of gym discomfort felt it was a major barrier to their physical activity. Those who did not feel it was a major barrier shared that they were able to overcome that barrier or seek out other avenues for physical activity. Many participants indicated that the majority of their physical activity was achieved from walking or biking on campus.

Healthy eating

Many participants (n=16) did not attribute any of their barriers to healthy eating to their sexual orientation (Table 4). Similar to physical activity, many participants felt that their

sexual orientation facilitated healthy eating, often through social networks such as having LGB friends who ate healthier or through perceived social norms, such as those around vegetarianism or veganism, within the LGB community. Experiences varied among those who felt that their sexual orientation was a source for less healthy eating. A few men talked about less healthy eating that was associated with the “bar culture” being the main platform for socializing within the LGB community, while a few women noted that they experienced negative stereotypes or expectations around the eating habits of lesbian or gay women.

Binge eating was a form of unhealthy eating among participants. Some participants discussed experiences with binge eating in response to stressful experiences, particularly noting that their sexual orientation was either an added stressor or potential trigger for binge eating. Few participants had experiences with purging behaviors specifically related to their sexual orientation, although some commented that purging behaviors may be linked to body image expectations.

Resources

Participants identified strategies that their college could implement to encourage more physical activity, healthy eating, and healthier body image (Table 5). Half of participants felt there was no need to tailor resources specifically to their sexual orientation. Some participants indicated they were comfortable accessing current resources and that sexual orientation was not a barrier; thus they did not feel that they needed resources to accommodate their sexuality. However, many also expressed interest in having either student groups or other organized opportunities (such as seminars or courses) available on-campus to discuss weight-related issues that adversely impact the LGB college student community with other students (including the general student body). Among men, body image was of particular concern, with nearly half of participants considering body image the most important point.

In contrast, several participants felt that existing resources needed to be more inclusive. Inclusivity varied on participant experiences; however, the general sentiment was that existing resources did not always create spaces that were safe, comfortable, or accepting of individual differences or experiences. For example, some participants felt that resources should not promote a gender binary or gender stereotypes, with a few noting a need for gender-neutral resources (such as locker rooms and bathrooms). Others wanted to feel safe accessing resources and not feel that their sexual orientation would be an area for experiencing discrimination.

Several participants indicated that reaching out to LGB students specifically and strategically with outreach materials could increase LGB students accessing general resources (i.e., resources that are not specifically tailored to sexual orientation, but address healthy eating, physical activity and body image, overall). In other words, resources could be designed for the general college student population; however, outreach and recruitment of students should be targeted toward LGB students.

We asked participants about their interest in participating in an LGB-specific physical activity program offered through the campus recreation center. Nearly half said they would

be interested in attending, with most feeling it would be an opportunity to meet other LGB students. Among those who were not interested in attending, reasons varied from not being out to not needing that resource to be physically active.

DISCUSSION

Our findings highlight unique perspectives and experiences of LGB, queer, and pansexual college students. For example, participants identified less healthy eating due to social opportunities within the LGB community or feeling uncomfortable with being at the gym because of their sexual orientation. In addition to barriers, we found that sexual orientation facilitated more physical activity and healthy eating for some students. Although many women experienced positive body image within the LGB community, this was not true for men. Findings suggested a need for college interventions addressing structural barriers (such as gender neutral locker rooms and bathrooms) as well as perceived lack of awareness of LGB student experiences. Resources also need to be offered to LGB college students through more outreach and LGB-specific interventions.

Although we did not specifically examine barriers unrelated to sexual orientation, the college setting provides an exclusive experience to students. Inherent structures within the institution, such as scheduling of classes or food offerings in cafeterias and dining halls, present barriers across the student body, including non-heterosexual students. These findings emphasize the importance of shifting structural aspects within the college setting to more effectively improve the health of all students as well as ensuring that structures and resources available to students (such as campus recreation centers) are consistently inclusive of all students, including non-heterosexual students.

Across physical activity and healthy eating, participants discussed the importance of socializing and social norms (e.g., going to bars, vegetarianism among LGB friends). Opportunities to socialize were a common reason for participation in an LGB-specific physical activity program and also for having a student group. This socializing piece is critical when considering intervention development, particularly when targeting behavior change. Previous studies have noted the importance of socializing or social networks in weight-related behaviors among young people (Eisenberg *et al.* 2005, Voorhees *et al.* 2005, VanKim & Nelson 2013). Similarly, the most common intervention idea suggested by participants was a student group or course that would provide a platform for discussing issues around physical activity, healthy eating, and body image. Related, we had the positive findings that sexual orientation facilitated healthier eating, more physical activity, and healthier body image for some students. Many of these participants discussed having LGB friends or perceptions of social norms within the LGB community that facilitated healthier habits. This finding further highlights how social components may be critical in developing interventions for this population. More exploration into social components of physical activity, healthy eating, and body image among non-heterosexual college students may be needed to more effectively develop interventions as well as encourage and motivate participation.

Our findings build on our previous quantitative work by providing context to some of the disparities we identified (*blinded for review purposes*). Although most participants were white, this was approximately reflective of Minnesota's college student racial/ethnic make-up. However, all participants were from a single 4-year institution, thus limiting our findings. Future research should examine experiences of 2-year college students, as well as young adults not in school, as these populations are highly understudied. Other recruitment strategies should be considered in future studies. The use of individual interviews as a qualitative method allowed participants more safety in sharing personal experiences around their sexuality (especially for those who were not out or completely comfortable with their sexuality), representing a strength of this study. However, this format did not allow participants to engage with each other, as a focus group format would, thus we may have missed shared experiences of non-heterosexual college students that were not apparent in the individual format. Future research should employ a group interview format to explore additional themes related to body image, physical activity, and healthy eating among non-heterosexual college students.

CONCLUSION

Our study highlights some unique sexual orientation-related barriers and facilitators that LGB, queer, and pansexual college students may experience around physical activity, healthy eating, and body image. Positive findings related to healthier habits highlight an area to harness in future intervention development. Based on our findings, tailored interventions are needed to address some of the disparities experienced by non-heterosexual college students. Interventions need to promote greater inclusivity by ensuring that a broad range of students would feel safe accessing resources. Potential strategies included raising awareness around LGB student experiences and having more gender-neutral resources available, such as bathrooms. Further, general programmatic outreach may want to specifically target LGB students to increase participation. Interventions tailored to LGB students, such as health promotion efforts that specifically help LGB students overcome social and structural barriers, may also be beneficial.

RELEVANCE TO CLINICAL PRACTICE

Lesbian, gay, bisexual, queer, and pansexual college students represent a unique subpopulation with pressing health needs related to physical activity, nutrition, and body image. These are critical areas of health promotion because they contribute to leading causes of chronic disease and illness, including diabetes, cardiovascular disease, obesity, and depression. Health care clinicians play key roles in promoting healthy lifestyles and often are core to a multifaceted approach to address health disparities experienced by sexual minority students. Thus, health care clinicians need to sensitively and appropriately provide relevant prevention and treatment care in the context of lesbian, gay, bisexual, queer, and pansexual students, with inclusion of weight-related health issues in order to promote overall healthy lifestyles, including adequate physical activity, healthier eating habits, and positive body image. Although not specifically highlighted among students, inclusive health care provided to students is also a critical aspect of overall health maintenance and promotion.

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References

- Austin SB, Ziyadeh NJ, nJA, Camargo CA Jr, Colditz GA, Field AE. Sexual orientation, weight concerns, and eating-disordered behaviors in adolescent girls and boys. *Journal of the American Academy of Child and Adolescent Psychiatry*. 2004; 43(9):1115–1123. [PubMed: 15322415]
- Austin SB, Ziyadeh NJ, Corliss HL, Haines J, Rockett HR, Wypij D, Field AE. Sexual orientation disparities in weight status in adolescence: Findings from a prospective study. *Obesity*. 2009a; 17(9):1776–1782. [PubMed: 19300430]
- Austin SB, Ziyadeh NJ, Corliss HL, Rosario M, Wypij D, Haines J, Camargo CA Jr, Field AE. Sexual orientation disparities in purging and binge eating from early to late adolescence. *Journal of Adolescent Health*. 2009b; 45(3):238–245. [PubMed: 19699419]
- Austin SB, Nelson LA, Birkett MA, Calzo JP, Everett B. Eating disorder symptoms and obesity at the intersections of gender, ethnicity, and sexual orientation in US high school students. *American Journal of Public Health*. 2012; 103(2):16–22.
- Blosnich JR, Silenzio VMB. Physical health indicators among lesbian, gay, and bisexual U.S. veterans. *Annals of Epidemiology*. 2013; 23(7):448–451. [PubMed: 23688720]
- Blosnich JR, Farmer GW, Lee JGL, Silenzio VMB, Bowen D. Health inequalities among sexual minority adults: Evidence from 10 U.S. states. *American Journal of Preventive Medicine*. 2014; 46:337–349. [PubMed: 24650836]
- Boehmer U, Bowen DJ, Bauer GR. Overweight and obesity in sexual-minority women: evidence from population-based data. *American Journal of Public Health*. 2007; 97(6):1134–40. [PubMed: 17463369]
- Boehmer U, Bowen DJ. Examining factors linked to overweight and obesity in women of different sexual orientations. *Preventive Medicine*. 2009; 48(4):357–361. [PubMed: 19463478]
- Bowen DJ, Balsam KF, Diergaarde B, Russo M, Escamilla GM. Healthy eating, exercise, and weight: Impressions of sexual minority women. *Women & Health*. 2008; 44(1):79–93.
- Calzo JP, Roberts AL, Corliss HL, Blood EA, Kroshus E, Austin SB. Physical activity disparities in heterosexual and sexual minority youth ages 12–22 years old: roles of childhood gender nonconformity and athletic self-esteem. *Annals of Behavioral Medicine*. 2014; 47(1):17–27. [PubMed: 24347406]
- Case P, Austin SB, Hunter DJ, Manson JE, Malspeis S, Willet WC, Spiegelman D. Sexual orientation, health risk factors, and physical functioning in the Nurses' Health Study II. *Journal of Women's Health*. 2004; 13(9):1033–1047.
- Centers for Disease Control and Prevention. Sexual identity, sex of sexual contacts, and health-risk behaviors among students in grades 9–12 - Youth Risk Behavior Surveillance, Selected Sites, United States, 2001–2009. *Morbidity and Mortality Weekly Report*. 2011; 60(SS-7):1–133.
- Conron KJ, Mimiaga MJ, Landers SJ. A population-based study of sexual orientation identity and gender differences in adult health. *American Journal of Public Health*. 2010; 100(10):1953–60. [PubMed: 20516373]
- Deputy NP, Boehmer U. Determinants of body weight among men of different sexual orientations. *Preventive Medicine*. 2010; 51:129–131. [PubMed: 20510272]
- Deputy NP, Boehmer U. Weight status and sexual orientation: differences by age and within racial and ethnic subgroups. *American Journal of Public Health*. 2014; 104(1):103–109. [PubMed: 24228650]

- Diemer EW, Grant JD, Munn-Chernoff M, Patterson D, Duncan AE. Gender Identity, Sexual Orientation, and Eating-Related Pathology in a National Sample of College Students. *Journal of Adolescent Health*. 2015; :1–6. DOI: 10.1016/j.jadohealth.2015.03.003
- Dilley JA, Simmons KW, Boysun MJ, Pizacani BA, Stark MJ. Demonstrating the importance of feasibility of including sexual orientation in public health surveys: Health disparities in the Pacific Northwest. *American Journal of Public Health*. 2009; 99(10):1–8.
- Duncan D. Embodying the gay self: Body image, reflexivity and embodied identity. *Health Sociology Review*. 2010; 19(4):437–450.
- Eisenberg ME, Neumark-Sztainer D, Story M, Perry C. The role of social norms and friends' influences on unhealthy weight-control behaviors among adolescent girls. *Social Science & Medicine*. 2005; 60(6):1165–1173. [PubMed: 15626514]
- Fredriksen-Goldsen KI, Kim H, Barkan S. Disability among lesbian, gay, and bisexual adults: Disparities in prevalence and risk. *American Journal of Public Health*. 2012; 102:16–21.
- Fredriksen-Goldsen KI, Kim HJ, Barkan SE, Muraco A, Hoy-Ellis CP. Health disparities among lesbian, gay, and bisexual older adults: results from a population-based study. *American Journal of Public Health*. 2013; 103(10):1802–1809. [PubMed: 23763391]
- Garland-Forshee RY, Fiala SC, Ngo DL, Moseley K. Sexual orientation and sex differences in adult chronic conditions, health risk factors, and protective health practices: Oregon 2005–2008. *Preventing Chronic Disease*. 2014; 11:E136. [PubMed: 25101493]
- Gordon-Larsen P, Nelson MC, Popkin BM. Longitudinal physical activity and sedentary behavior trends: adolescence to adulthood. *American Journal of Preventive Medicine*. 2004; 27(4):277–283. [PubMed: 15488356]
- Gordon-Larsen P, The NS, Adair S. Longitudinal trends in obesity in the United States from adolescence to the third decade of life. *Obesity*. 2010; 18(9):1801–1804. [PubMed: 20035278]
- Halperin DM. The normalization of queer theory. *Journal of Homosexuality*. 2003; 45(2–4):339–343. [PubMed: 14651188]
- Hatzenbuehler ML. How does sexual minority stigma “get under the skin”? A psychological mediation framework. *Psychological Bulletin*. 2009; 135(5):707–730. [PubMed: 19702379]
- Igartua K, Thombs BD, Burgos G, Montoro R. Concordance and discrepancy in sexual identity, attraction, and behavior among adolescents. *Journal of Adolescent Health*. 2009; 45(6):602–608. [PubMed: 19931833]
- Institute of Medicine. *The Health of Lesbian, Gay, Bisexual, and Transgender People: Building a Foundation for Better Understanding*. Washington, DC: Institute of Medicine; 2011.
- Larson NI, Neumark-Sztainer D, Hannan PJ, Story M. Trends in adolescent fruit and vegetable consumption, 1999–2004 - Project EAT. *American Journal of Preventive Medicine*. 2007; 32(2): 147–150. [PubMed: 17234489]
- Laska MN, VanKim NA, Erickson DJ, Lust K, Eisenberg ME, Rosser BRS. Disparities in weight and weight behaviors by sexual orientation in college students. *American Journal of Public Health*. 2015; 105(1):111–121. [PubMed: 25393177]
- Matthews CE, Chen KY, Freedson PS, Buchowski MS, Beech BM, Pate RR, Troiano RP. Amount of time spent in sedentary behaviors in the United States, 2003–2004. *American Journal of Epidemiology*. 2008; 167(7):875–881. [PubMed: 18303006]
- Meyer IH. Prejudice, social stress, and mental health in lesbian, gay, and bisexual populations: conceptual issues and research evidence. *Psychological Bulletin*. 2003; 129(5):674–97. [PubMed: 12956539]
- Morgan JF, Arcelus J. Body image in gay and straight Men: A qualitative study. *European Eating Disorders Review*. 2009; 17(6):435–443. [PubMed: 19644913]
- National Center for Education Statistics. Enrollment rates of 18- to 24-year-olds in degree-granting institutions, by level of institution and sex and race/ethnicity of student: 1967 through 2012. 2013. Retrieved June 24, 2014, from http://nces.ed.gov/programs/digest/d13/tables/dt13_302.60.asp
- Nelson MC, Neumark-Sztainer D, Hannan PJ, Sirard JR, Story M. Longitudinal and secular trends in physical activity and sedentary behavior during adolescence. *Pediatrics*. 2006; 118(6):E1627–E1634. [PubMed: 17142492]

- Nelson MC, Story M, Larson NI, Neumark-Sztainer D, Lytle L. Emerging adulthood and college-aged youth: an overlooked age for weight-related behavior change. *Obesity*. 2008; 16(10):2205–2211. [PubMed: 18719665]
- Park MJ, Mulye TP, Adams SH, Brindis CD, Irwin CE Jr. The health status of young adults in the United States. *Journal of Adolescent Health*. 2006; 39(3):305–317. [PubMed: 16919791]
- Popkin BM. Patterns of beverage use across the lifecycle. *Physiology & Behavior*. 2010; 100(1):4–9. [PubMed: 20045423]
- Rosario M, Schrimshaw EW, Hunter J, Braun L. Sexual identity development among gay, lesbian, and bisexual youths: consistency and change over time. *Journal of Sex Research*. 2006; 43(1):46–58. [PubMed: 16817067]
- Rosario M, Corliss HL, Everett BG, Reisner SL, Austin SB, Buchting FO, Birkett M. Sexual orientation disparities in cancer-related risk behaviors of tobacco, alcohol, sexual behaviors, and diet and physical activity: pooled Youth Risk Behavior Surveys. *American Journal of Public Health*. 2014; 104(2):245–254. [PubMed: 24328632]
- Saldana, J. *The Coding Manual for Qualitative Researchers*. Sage Publications; 2009.
- Sanchez FJ, Greenberg ST, Liu WM, Vilain E. Reported Effects of Masculine Ideals on Gay Men. *Psychology of Men & Masculinity*. 2009; 10(1):73–87. [PubMed: 20628534]
- Savin-Williams RC, Ream GL. Prevalence and stability of sexual orientation components during adolescence and young adulthood. *Archives of Sexual Behavior*. 2007; 36(3):385–394. [PubMed: 17195103]
- VanKim NA, Larson NI, Laska MN. Emerging adulthood: a critical age for preventing excess weight gain? *Adolescent Medicine*. 2012; 23:571–588.
- VanKim NA, Nelson TF. Vigorous physical activity, mental health, perceived stress, and socializing among college students. *American Journal of Health Promotion*. 2013; 28(1):7–15. [PubMed: 23470187]
- Voorhees CC, Murray D, Welk G, Birnbaum AS, Ribisl KM, Johnson CC, Pfeiffer KA, Saksvig B, Jobe JB. The role of peer social network factors and physical activity in adolescent girls. *American Journal of Health Behavior*. 2005; 29(2):183–190. [PubMed: 15698985]
- Ward, BW.; Dahlhamer, JM.; Galinsky, AM.; Joestl, SS. *Sexual orientation and health among US adults: National Health Interview Survey, 2013*. Hyattsville, MD: 2014.

Summary box

What does this paper contribute to the wider global clinical community?

- Sexual minority college students experience unique health needs that warrant attention from clinicians, to improve health promotion efforts targeting chronic diseases including obesity, diabetes, cardiovascular disease, and depression.
- Providing tailored sexual orientation-inclusive health care and health promotion is critical to ensuring optimal health for sexual minority college students.

Table 1

Demographic characteristics of participants (n=30)

	Total		Males	Females
Mean age (range)	22.1 (18–30)	22.2 (18–30)	22.1 (18–29)	
Sexual identity				
Gay/Lesbian	16	53%	11	73%
Bisexual	8	27%	2	13%
Queer	3	10%	1	7%
Pansexual	3	10%	1	7%
Race/ethnicity ^a				
White	25	83%	11	73%
Asian/Pacific Islander	3	10%	2	13%
Latino/Hispanic	2	7%	1	7%
Black	2	7%	2	13%
Highest level of education achieved				
High school/GED	2	7%	1	7%
Some college	19	63%	11	73%
Associate's degree	3	10%	0	0%
College graduate	4	13%	2	13%
Graduate school	2	7%	1	7%
Currently enrolled in school				
Yes, 4-year college	25	83%	13	87%
Yes, graduate program	5	17%	2	13%
Employment status ^b				
Not currently working for pay	9	30%	6	40%
Part-time on campus	13	43%	5	33%
Part-time off campus	9	30%	5	33%
Full-time on campus	1	3%	0	0%

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	Total	Males	Females
Mean age (range)	22.1 (18–30)	22.2 (18–30)	22.1 (18–29)
Weight status			
Underweight (BMI<18.5)	2 7%	1 7%	1 7%
Normal (18.5 BMI ≤25)	16 53%	8 53%	8 53%
Overweight (25 < BMI <30)	9 30%	5 33%	4 27%
Obese (BMI ≥30)	3 10%	1 7%	2 13%

^aTotal may not add up due to participants selecting more than one response

Table 2

Overview of interview questions

1	Describe what you think is an ideal healthy meal for lunch. Common barriers to eating healthy and being active among young people in general include things such as lack of time, not knowing how to eat healthy or prepare a healthy meal, healthy foods are expensive or hard to find, or bad weather. When you think about your sexual orientation...
2	What are aspects of being gay/bi/queer that create barriers that keep you from being more physically active than you currently are?
3	What are aspects of being gay/bi/queer that create barriers that keep you from eating healthier than you currently do?
4	How do you think your ideal body, for you, goes against or conforms to mainstream expectations of what your body should look like?
5	Thinking about the nutrition and physical activity barriers you experience related to your sexual orientation and your experiences within the LGBTQ community, what resources would help you lead a healthier lifestyle?
6	Hypothetically, if there were an LGBTQ-specific physical activity course offered through the campus recreation center, would that resource help you be more physically active?
7	What, to you, was the most important point or experience that you shared today?

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Table 3

Summary of body image findings related to sexual orientation

Theme	Sub-themes	Representative quotes
Body image	<i>More body type community (n=9)</i> <i>diversity in LGBTQ</i>	"I'm surrounded by a lot of pre-med people and everybody seems to have the same body style, which is way different from like if you go to [the student-run LGBTQ campus group]... everybody kind of embraces their own individuality there..." (female, 24, bisexual)
	Gay males emphasize particular aesthetic (n=12)	"I feel in the gay [male] community it's really competitive as far as really superficial things or concern [with] appearance... there's this pressure I feel I need to just look the best that I can. I mean ... so... I fit in with the cool gay people." (male, 19, gay)
	Narrow definition of masculinity (n=7)	"Being a male, in general, you are expected to be a bigger and more athletic looking person to maintain that standard of masculinity. So like you are already expected to be masculine but then you have to be like this kind of like processed masculine for the queer community... we all want to be simultaneously slim and muscular at the same time." (male, 22, gay)

Number in parentheses represents the number of respondents who commented on this theme. *Italics represent sub-themes where sexual orientation facilitated healthier body image*

Table 4

Summary of findings on sexual orientation-related physical activity and healthy eating barriers

Theme	Sub-themes	Representative quotes
Physical activity	<i>More physically active because of sexual orientation (n=13)</i> Gym discomfort (n=14)	"Because at least the lesbian community I hang around, it's really physically active so like... let's go on a 40-mile bike ride for some reason. Like let's go out and run 15 miles." (female, 19, lesbian) "If I am going try to workout, sometimes it's a little uncomfortable being surrounded by a bunch of straight guys... I'm just really scrawny and kind of flamboyant... it seems gay males are supposed to be super fit or skinny and I feel I should work out and do more physical activities but... I think it's more of a discomfort in general." (male, 18, gay) "One thing could be the fact that I am heavier set. It is hard to go out and work out in a gym, knowing that you don't look like a lot of the other people there... I don't like working out with the bunch of jocks... I guess more [related] to my sexual orientation... I don't feel, not necessarily not safe, but I just don't like such close quarters while working out. I've been hit on by a guy at the gym before... I'm like I just, no." (female, pansexual)
Healthy eating	<i>Healthy eating because of sexual orientation (n=12)</i> Less healthy eating because of sexual orientation n=(9) Sexuality may be linked with more binge eating (n=8)	"One of the labs that I used to work in, we had a lab party and there were many queer individuals in the lab and everybody was just sort of naturally very healthy, very eco-conscious and so everybody was to bring something for the party and I felt influenced or pressured a little bit to bring something more healthy than like a dessert... and so I ended up making a very healthy quinoa dish and I've never done that before because I felt I needed to step it up because everybody is really healthy..." (female, bisexual) "I would go out to gay bars and a lot of gay bars have ridiculous drink specials, and so I would... drink heavy amounts of alcohol, as would many other people, and the bars offer really fatty food and so [I would have] really greasy food afterwards, too." (male, 28, gay) "I put myself under a lot of pressure to be this bigger, more masculine guy because I have not come to terms with or accepted my bisexuality and... it bothers me and so I overcompensate on this other side by being hyper-athletic and when I don't fit that standard or if I don't fulfill that, if that doesn't work or whatever then it can trigger an event where I will binge eat." (male, bisexual)

Number in parentheses represents the number of respondents who commented on this theme

Italics represent sub-themes where sexual orientation facilitated more physical activity and healthy eating

Table 5

Summary of college strategies related to resources addressing body image, physical activity, and healthy eating

Sub-theme	Representative Quote(s)
No need to tailor resources specifically to sexual orientation (n=15)	"I personally don't think [the LGBTQ community] needs any encouraging. If we want to do it, we'll do it. You don't have to force that on us... I don't think [resources] necessarily has to be tailored for [the LGBTQ community]." (female, bisexual)
Groups to talk about body image, physical activity, and healthy eating (n=10)	"Groups... like a student group or something where you can just meet and just kind of talk about [body image, physical activity, and healthy eating] issues because again realizing I am not like the only one facing this, is helpful and there are other people out there who have similar experiences... and I should not feel so bad about it." (female, 21, bisexual)
More inclusivity in available resources and future programming (n=9)	"I would like a gay man's body image class or something. I think that would be helpful and I think that would be a good place to meet people, too and network a little and stuff. Or... maybe a workout, [or class on] eating healthy." (male, 20, gay) "I would definitely consider having a gender neutral locker room... I would feel more comfortable in the men's locker room, but I would feel more comfortable in an atmosphere that had option for a gender neutral locker room." (male, gay)
Targeting LGB students with outreach materials would be helpful (n=8)	"I feel [the campus rec center]... just like what people who work there... I feel they are the type of people who are very, just normal... They would be the people who would a little bit homophobic but don't want to show it, but they really are on the inside... but maybe having more... [LGBT] inclusive group fitness classes, [by] having more awareness about the LGBT community in general would be helpful." (female, 21, bisexual) "A lot of times, [LGBTQ students are] in their [little world, they don't pay attention to the campus- wide emails or something like that. So if there was something focused into [LGBTQ] groups or in their newsletters or even an information pamphlet available at those locations, it might actually spark interest." (male, 30, gay)

Number in parentheses represents the number of respondents who commented on this theme