Correlates of overweight and obesity among lesbian and bisexual women

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Abstract

Background—Recent studies find lesbians at greater risk for overweight and obesity than heterosexual women. While this may reflect differences in attitudes concerning weight and body shape, little is actually known about risk factors within this group. This study examines correlates of obesity and exercise frequency among lesbians and bisexual women.

Methods—Data from a snowball sample ($n = 1209$) of lesbians/bisexual women living in Los Angeles Country were utilized. Overweight was defined as BMI 25 kg/m^2; obesity as BMI 30. Associations between sociodemographic characteristics, exercise frequency, health indicators, and weight-related measures were evaluated to identify independent predictors of BMI and exercise frequency.

Results—Prevalence of overweight and obesity among lesbians varied by racial/ethnic background. Higher BMI was associated with older age, poorer health status, lower educational attainment, relationship cohabitation, and lower exercise frequency. Higher BMI, perceptions of being overweight, and reporting a limiting health condition were identified as independent predictors of infrequent exercise. Women were generally quite accurate in self-perceptions of weight status.

Conclusions—Correlates of overweight and obesity among lesbians and bisexual women are generally comparable to those observed in studies of heterosexual women. Evidence that lesbians' higher BMI is associated with higher levels of fitness is not supported.

Keywords

Obesity; Lesbian; Bisexual; Women of color

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Introduction

Obesity has reached epidemic proportions in the United States [1–4] with the proportion of obese U.S. adults (BMI 30) rising more than 50% in a 8-year period, from 12% in 1991 to 19% in 1999 [5,6]. The ranks of the overweight (BMI 25) include nearly two-thirds of all American adults [3], despite a more than decade-long effort associated with the Healthy People 2000 target of 60% at a healthy weight (18.5 BMI < 25) [7]. At present trajectory, overweight and obesity will soon surpass tobacco as the leading contributor to preventable morbidity, disability, and mortality [4].

Differences in risk for overweight and obesity are widely recognized in population segments defined by race/ethnicity, gender, age, and socioeconomic status [4]. For example, women are at greater risk for obesity than men, and among women, the highest prevalences are observed in adult women of color [3]. One factor, however, that has rarely been considered among women is sexual orientation. In the past few years, several studies have found that lesbians and bisexual women evidence levels of overweight and obesity at far higher prevalences than similar heterosexual women [8–11] even within higher risk ethnic/racial minority groups [12].

Given this apparent excess health burden, identifying risk indicators for overweight and obesity among women of minority sexual orientation assumes public health significance. While it may be that greater risk for overweight or obesity among lesbians arises from many of the same sources as it does for women in general (e.g., older age, lower levels of education, African American or Hispanic ethnic/racial background, infrequent exercise) [4,13–18], there may also be other more subtle reasons. For example, there is tentative evidence that lesbians have somewhat different norms or preferences for body weight than heterosexual women [18–21]. Research in general suggests that cultural values less frequently equating thinness with attractiveness may be associated with a greater prevalence of overweight [19–24]. In the case of lesbians, physical fitness may be valued or emphasized over thinness. In that regard, a recent study reported that lesbians were more likely than other women to engage in regular, vigorous exercise [9].

The present study examines sociodemographic, health status, and health risk behavioral correlates of overweight and obesity among lesbian and bisexual women. In doing so, we seek to identify those factors that are predictive of overweight and obesity in this greatly understudied population. Findings may be useful in informing health services planning and intervention development processes, as both community-level and community-specific strategies must be employed to combat this growing epidemic.

Methods

Sample and study design

Between 1999 and 2001, we obtained anonymous surveys from 1209 women in Los Angeles Country, all of whom self-identified as lesbian, bisexual, or sexually active with women. To do so, we used several commonly employed methods that have been developed over the years to access this hidden and geographically dispersed population [8,25]. Our methods

included conducting informational mailings to women accessible by either commercially available gay or lesbian social organization lists and direct solicitations of individuals attending lesbian/gay community-related public events or social organization meetings, publicizing the study in the local gay press, and using secondary dispersion techniques by distributing additional questionnaires through the social networks of previous respondents who volunteered to recruit additional women. In each case, potential respondents were informed that the purpose of the study was to examine lesbian and bisexual women's health issues and that their involvement would be requesting and completing a 38-page anonymous mail-in health questionnaire. In most cases, the questionnaire and a prepaid return envelope were mailed to interested women via bulk mailing. In other instances, questionnaires were given out at organizational meetings or through social networks of original participants. Because these methods do not generate complete information on whether an eligible respondent actually received the study instrument, calculation of an accurate response rate is not possible. The limitations of these sampling methods are well-known and generally draw samples that tend toward "healthy volunteer" characteristics [25]. For the present study, we excluded 25 respondents who were missing height and/or weight information and 32 women who indicated that their race/ethnicity was not Hispanic or non-Hispanic African American, Asian/Pacific Islander, or White, due to our inability to estimate valid inferences for this diverse but very small subgroup. As a result, our final sample consisted of 1152 women, of whom 87% identified as lesbian, gay, or homosexual, 7% as bisexual, and 6% as neither, but homosexually active.

Measurement of variables

Weight-related indicators—From self-reported height and weight, we calculated body mass index (kg/m^2). We further classified women into three categories consistent with CDC guidelines [2]: normal weight (BMI < 25), overweight (BMI between 25 and 30), and obese (BMI 30). Women were also asked a single question related to their perception of their current weight that included five options (ranging from "a lot thinner than I'd like to be" to "a lot heavier than I'd like to be") which we recoded into three categories: weight too thin or okay, a little heavier than desired, and a lot heavier than desired.

Health and fitness indicators—Respondents indicated their daily frequency of vigorous exercise lasting at least 20 min. From this, we divided women into two groups: those who exercised three or more times weekly and those who did not. Disability status was ascertained by two questions, one assessing the presence of a limiting health condition and the other receiving disability payments. From these, we classified women into three levels of disability: none reported, limiting condition only, or receiving disability for a limiting condition. Finally, women reported on their lifetime patterns of tobacco smoking and alcohol consumption. From this, we classified women as never, former, or current users of tobacco or alcohol, respectively.

Demographics—Demographic characteristics known to be associated with obesity were also assessed including age, race/ethnicity, personal income, educational attainment, and current relationship status [4]. For analysis purposes, relationship status was coded into three

categories: in cohabiting relationship with a female relationship partner, in noncohabiting relationship with a female partner, and not in a relationship.

Statistical analyses

All data were analyzed using SAS Version 8.2 [26]. Given distribution characteristics of BMI, we used a log-transformed BMI in all analyses. To evaluate bivariate associations among demographic characteristics, health and fitness indicators, and weight-related measures, we used chi-square tests, and in some instances multinomial logistic regression analyses based on generalized logit models [27] to control for effects of variables other than specific comparisons of interest. To evaluate mean differences in BMI, we employed one-way analysis of covariance adjusting for age. We also used multiple linear regression to examine the extent to which demographic characteristics and other indicators were independently predictive of BMI and multinomial logistic regression techniques to investigate associations between self-perceived weight status and other factors. Finally, we used multiple logistic regression to evaluate associations between exercise status and demographic characteristics, weight status, and health indicators. In all instances, multivariate equations were estimated by forcing entry of all predictor variables simultaneously. We report estimated P values from maximum likelihood analysis of variance for the multinomial logistic regression procedures, odds ratios, adjusted for covariates, and 95% confidence intervals from the logistic regression procedure, and standardized β values and their standard errors (SE) adjusting for the effects of covariates from the multiple regression procedure. Given the robust effects of both ethnic/racial background and age on our outcomes of interest [16], we also report age-adjusted proportions and means among women of differing ethnic/racial backgrounds. Age adjustments were calculated by standardizing each ethnic/racial group to the age structure of the total sample. Statistical significance was evaluated using the criteria of $P < 0.05$.

Results

Characteristics of the sample

Demographic characteristics of respondents varied by ethnic/racial background (Table 1). Women of Asian/Pacific Islander background were somewhat younger than other women ($P < 0.001$). Both White and Asian/Pacific Islander women reported higher levels of annual personal income ($P < 0.001$) and educational attainment ($P < 0.001$). There were also ethnic/racial differences in current relationship status, with African American women most likely to report being single ($P = 0.004$). Less than half of women studied reported exercising for at least 20 min three or more times a week. Exercise prevalence was not significantly associated with ethnic/racial background ($P = 0.12$). Further, there were no statistically significant differences associated with ethnic/racial background in self-reported health disability ($P = 0.26$) or patterns of tobacco ($P = 0.42$) or alcohol use ($P = 0.80$), after adjusting for possible effects due to age, income, education, and relationship status.

Weight status

The majority of lesbian and bisexual women surveyed were overweight or obese, although prevalence varied in association with demographic factors, especially ethnic/racial

background (Table 2). Whether differences in BMI were considered by mean value ($P <$ 0.001) or prevalence of overweight and obesity ($P < 0.001$), African American respondents reported the highest BMI values. Among overweight and obese women, 48% were obese. This proportion varied by ethnic/racial background ($P = 0.01$), after adjusting for possible effects associated with age, income, education, and relationship status.

Considering demographic status, health and exercise factors simultaneously as possible predictors of body mass index, we estimated that ethnic/racial background is an independent predictor of BMI (Table 3). Specifically as compared to White ethnic/racial background, Asian/Pacific Islander status was associated with lower BMI and African American with higher BMI. In addition, older age, lower educational attainment, and cohabitation with a female relationship partner were positively associated with higher BMI scores. As well, self-reported frequent exercise was negatively associated with BMI while both indices of disability status (limiting condition, disability) were positively associated with BMI. The total R^2 value for this model predicting body mass index was 0.13.

Self-perceptions of weight

The majority of women indicated that their current weight was heavier than they desired (Table 2). For the most part, this perception accurately reflected their current weight status. Among obese women, 76% reported that they were a lot heavier than they preferred; among overweight women, 37% responded similarly and an additional 56% reported that they were a little heavier than they desired. Multivariate analyses estimating the independent effects of weight status, race/ethnicity, age, income, educational attainment, and relationship status identified only being overweight or obese ($P < 0.001$) as a significant predictor of perceptions of being overweight. Cohabiting women were somewhat more likely to perceive themselves as overweight ($P = 0.06$).

Predictors of exercise status

The probability of reporting frequent exercising appeared unrelated to individual demographic characteristics when a multivariate logistic regression model was estimated considering effects of demographic, weight and health status and weight perceptions simultaneously. None of the demographic measurements (ethnic/racial background, age, income, educational attainment, relationship status) or, for that matter, substance use patterns (tobacco or alcohol use) evidenced significant association with exercise status. However, current weight, disability, and perceived overweight showed independent associations with the probability of reporting frequent exercise. Specifically, classification as being overweight (adj. OR = 0.61, CI: 0.43–0.84) or obese (adj. OR = 0.51, CI: 0.34–0.77) was associated with a lower probability of reporting frequent exercise. As well, reporting a limiting health condition compared to reporting no limiting condition or disability was related to a lower probability of engaging in frequent exercise (adj. OR = 0.59, CI: 0.44–0.80). The effects of reporting a health disability a compared to no limiting or disabling condition (adj. OR = 0.68, CI: 0.38–1.22) were not statistically significant, but consistent with a lower probability of reporting frequent exercise. Finally, perceiving oneself to be a lot heavier, but not a little heavier, than desired a compared to being a comfortable

weight or too thin was also associated with a lower odds of reporting frequent exercise (adj. OR = 0.64, CI: 0.41–0.99).

Discussion

Results from the current study must be considered in light of several limitations. Like many studies of lesbian and bisexual women where nonsystematic snowball sampling from a relatively hidden, geographically dispersed population is used to generate a sufficiently large and demographically diverse sample, the women surveyed here may or may not be representative of the lesbian population as a whole. This approach tends to draw somewhat younger, better educated, and more frequently non-Hispanic White samples than samples obtained when lesbians are recruited incidentally, and rarely, within general population-based surveys [8,25]. The English-language instrument utilized in this study limits access to the large, immigrant populations of Latinos and Asian/Pacific Islanders residing in Southern California. However, it is reassuring that an increasing body of research in the area suggests that studies using either sampling method come to analogous conclusions about patterns of health risks among lesbians despite the "healthy volunteer bias" that is presumably injected by the former method. Further, limitations in the study instrument, primarily an absence of energy intake assessment and relatively cursory measurement of exercise, reflected the fact that it was developed just prior to the expansion of a broader concept of physical activity, including moderate intensity "lifestyle" activity, that has recently appeared in the research literature [7]. This reduced our ability to examine with precision associations between BMI, nutritional patterns, and physical fitness. Finally, the reliance on self-reported versus measured height and weight introduced small but predictable bias in our findings (e.g., heavier individuals underreport weight, while shorter individuals overreport height) [28]. Despite these limitations, there can be little doubt that lesbian and bisexual women represent an especially high-risk population for obesity [8–12] and its associated disease burden [29].

Obesity is a growing challenge to the public's health [30]. The Surgeon General [4] advocates that the nation invest in understanding root causes in order to intervene effectively with high-risk populations. Our findings underscore that many aspects of the overweight/ obesity problem among women of minority sexual orientation reflect those of women in general. As reported elsewhere in studies of women in general [4,14,24,31], we observed among the lesbian and bisexual women surveyed that African American or Latina ethnic/ racial background, older age, poorer health status, lower educational attainment, lower exercise frequency, presence of limiting health conditions, and perhaps cohabiting with a female relationship partner (the lesbian equivalent of marriage) are predictive of higher BMI. Clearly, increasing age, minority ethnicity, and lower socioeconomic status, already potent determinants of exposure to less health-promoting environments, exacerbate the effect of minority sexual orientation on BMI. However, as is true of overweight among African American women and Latinas in general [32], increasing affluence is only partially protective against overweight among lesbians and bisexual women [12].

One of the common stereotypes is that lesbians are more likely than other women to evidence male sex dimorphic characteristics including being both taller and heavier on average [33]. Stereotypes aside, recent small-scale studies have documented that lesbians, in

comparison to heterosexual women, possess somewhat different attitudes about beauty and their own bodies, emphasizing physical fitness to a greater degree and rejecting cultural norms of excessive thinness in women [34–38]. Both of these diverse lines of thought lead to a similar expectation: that the problem of higher BMI observed among lesbians may not necessarily reflect excess body fat, but, rather, a higher general level of muscularity producing greater weight. This would be reflected in a higher proportion of overweight lesbian with BMI values < 30. Our findings do not support this perspective. In the current sample, 48% of lesbian/bisexual women with BMI values greater than 25 met criteria for obesity. This proportion is in fact higher than that in a recent population-based survey from Los Angeles Country where it was estimated that 36% of women with BMI values greater than 25 are obese [39]. Our observations are inconsistent with overweight lesbian and bisexual women possessing high levels of physical fitness.

While the reasons for this greater prevalence of overweight/obesity have yet to be fully explicated, one possible factor that has not been explored to date is social discrimination [40]. In a recent study of middle-income African American women, the choice of eating versus exercising for stress management was identified as one of four predictors of weight status [15,41]. In an earlier study, it was observed that lesbians, gay men, and bisexual women and men reported higher levels of day-to-day discrimination than heterosexual women and men, often attributed to minority sexual orientation [40]. Is it possible that distress associated with these higher levels of perceived discrimination may result in greater consumption of "comfort foods" that are generally high in fat and calories and low in nutrient density? There is some tentative evidence in this regard suggesting that lesbians are more likely than heterosexual women to engage in binge eating [42] but future research is needed to determine the etiology of this health threat.

The understudied, but higher risk, status of this population demands increased public health attention to health services planning and research if they are not to be "left behind" in addressing the obesity epidemic. Clearly, the intersection of female gender and minority sexual orientation not only increases risk burden, but also may call for different strategies in outreach to and intervention within this community. One intervention challenge may be in communicating fit, but attainable, ideals that do not invoke "model-thin" societal standards for women. The latter may be actively rejected by lesbian/bisexual women. Successful interventions in this community will require attention to the prevailing cultural norms regarding acceptance of heavier body weight and the rejection of extreme dieting to achieve idealized beauty standards. Social cognitive theory [43] suggests one approach, namely tailoring role model choices for message delivery, using in-person or media strategies, to the needs and cultural preferences of the target populations. For instance, in targeting Whites, Latinas, and African Americans, lesbians on the heavier end of the normal BMI range, as well as overweight lesbians, might be depicted in brochures, posters, and electronic public service announcements engaged in culturally valued physical activities (e.g., softball) and making healthful food choices. This approach has been used effectively in other arenas of health promotion with minority status populations (e.g., increasing cervical cytology in African American women and Latinas [44,45]). At the same time, lesbians and bisexual women are themselves a diverse population in terms of characteristics that have been shown both here and elsewhere to influence the likelihood of overweight and obesity [11]. In

targeting Asian American lesbians, for example, the optimal weight status of role model messengers is unclear, and more research is needed to identify appropriate ways of imbedding behavioral messages promoting healthy weight into culturally familiar and appropriate settings. The extremely high prevalence of overweight in the general population [3] suggests that a social ecological model identifying multiple leverage points for the integration of healthy eating and physical activity opportunities into the routine conduct of business in American culture, e.g., worksites, schools, and civic activities, is necessary to truly combat this epidemic [1,46]. As heterosexual marriage is associated with weight gain similar to that in our findings with regard to cohabitation among lesbians, obesity prevention and control interventions must address couple and family constraints and facilitators of healthy eating and active living. As in community-level health promotion efforts targeting other minority status communities with high risk/disease burden (e.g., HIV prevention social norm change [47]), cultivation of leadership among a variety of subsets of the lesbian/ bisexual population to participate in the identification of leverage points and adoption of strategies will prevent their marginalization in this arena. Effective and culturally appropriate interventions are needed that address both the unique concerns of lesbians and bisexual women and the diverse ways in which age, ethnic/racial background, and social class intertwine in their influence on those of minority sexual orientation.

Acknowledgments

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Table 1

Demographic and health characteristics of lesbian and bisexual women by ethnic/racial background

Characteristic	Hispanic (n = 162) %	Non-Hispanic			Total (n = 1152) %
		African American (n = 127)%	Asian/Pacific Islander (n = 72)%	White (n = 791)%	
Age, in years **					
Under 30	31.5	12.6	44.4	12.1	16.9
30–39	38.9	44.1	40.3	24.5	29.7
40–49	22.2	26.0	8.3	34.8	30.4
50 or older	7.4	17.3	6.9	28.6	23.0
Annual personal income **					
$0–19,999	27.8	25.2	20.8	16.2	19.1
$20,000–39,999	38.9	33.1	30.6	28.1	30.3
$40,000–59,999	22.8	21.2	31.9	27.3	26.3
$60,000 or more	10.5	20.5	16.7	28.4	24.3
Educational attainment **					
High school or less	21.6	18.9	11.1	11.6	13.8
Some college	40.7	38.6	22.2	23.6	27.6
College degree	25.3	25.2	41.7	29.6	29.3
Graduate school	12.4	17.3	25.0	35.2	29.3
Current relationship status *					
Cohabiting	46.9	37.8	36.1	52.1	48.8
Non-cohabiting	22.8	18.1	26.4	16.8	18.4
Single	30.3	44.1	37.5	31.1	32.8
Current health disability					
None	72.8	74.8	81.9	69.8	71.5
Limiting condition	21.6	18.1	16.7	24.6	23.0
Receives disability	5.6	7.1	1.4	5.6	5.5
Exercises three or more times weekly	37.7	40.9	48.6	46.9	45.1
Tobacco use					
Current smoker	23.5	20.5	18.1	18.3	19.3
Former smoker	45.7	41.7	51.4	46.7	46.3

Characteristic	Hispanic (*n* = 162) %	Non-Hispanic			Total (*n* = 1152) %
		African American (*n* = 127)%	Asian/Pacific Islander (*n* = 72)%	White (*n* = 791)%	
Nonsmoker	30.9	37.8	30.5	35.0	34.5
Alcohol use					
Current drinker	78.4	75.6	79.2	74.1	75.2
Former drinker	10.5	14.2	8.3	12.3	12.0
Nondrinker	11.1	10.2	12.5	13.6	12.9

Note. Ethnic/racial differences evaluated by chi-square tests.

*
P < 0.01.

**
P < 0.001

Table 2

Age-adjusted weight status, self-perceived weight, and exercise rates among lesbian and bisexual women by race/ethnicity

Weight and fitness indicators	Hispanic (n = 162)	Non-Hispanic			Total (n = 1152)
		African American (n = 127)	Asian/Pacific Islander (n = 72)	White (n = 791)	
Body mass index, X̄, kg/m^2 (SD) **	28.5 (7.5)	28.9 (5.8)	23.7 (4.2)	26.7 (6.3)	27.0 (6.4)
Obesity category (%) **					
Normal weight	38.8	27.3	63.1	49.6	46.4
Overweight	25.1	31.9	29.2	27.6	27.8
Obese	36.1	40.8	7.7	22.9	25.8
Obesity prevalence among women of BMI > 25 (%) **	59.0	56.1	21.0	45.3	48.1
Weight perception (%) **					
Weight okay or too thin	18.6	14.9	38.5	26.3	24.7
A little too heavy	45.5	45.3	50.7	42.6	43.8
A lot heavier than desired	36.0	39.8	10.8	31.2	31.5
Exercises three or more times weekly (%) *					
Yes	36.7	41.7	55.8	46.7	45.3
No	63.3	58.3	44.2	53.3	54.7

Note. Ethnic/racial differences evaluated by weighted one-way analysis of covariance for means or chi-square tests for proportions.

*
$P < 0.05$.

**
$P < 0.001$.

Table 3

Results of multiple linear regression analysis predicting body mass index[a] from demographic factors and health and fitness indicators

Predictor	β coefficient	SE	P value
Demographic characteristic			
Ethnic/racial background[b]			
Asian/Pacific Islander	−0.04	0.011	<0.001
African American, non-Hispanic	0.04	0.009	<0.001
Hispanic	0.01	0.008	NS
Age	0.01	0.003	0.03
Annual personal income	0.00	0.003	NS
Educational attainment	−0.01	0.003	0.02
Current relationship status[c]			
Cohabiting relationship	0.02	0.006	<0.01
Non-cohabiting relationship	0.01	0.008	NS
Health and fitness indicator			
Exercises three or more times weekly	−0.03	0.005	<0.001
Current disability status[d]			
Limiting condition	0.03	0.006	<0.001
Receives disability	0.05	0.012	<0.001
Tobacco use[e]			
Current smoker	0.01	0.008	NS
Former smoker	0.00	0.006	NS
Alcohol use[e]			
Current drinker	0.01	0.008	NS
Former drinker	0.01	0.010	NS

Note. NS, not significant ($P > 0.05$).

[a] Log of body mass index used.

[b] Reference group is White, non-Hispanic women.

[c] Reference group is single women.

[d] Reference group is women indicating no disability.

[e] Reference group is women reporting non-use.