

Association of Childhood Sexual Abuse With Obesity in a Community Sample of Lesbians

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Abstract

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Objective: Our goal was to examine the association between childhood sexual abuse (CSA) and obesity in a community-based sample of self-identified lesbians.

Research Methods and Procedures: A diverse sample of women who self-identified as lesbian was recruited from the greater Chicago metropolitan area. Women ($n = 416$) were interviewed about sexual abuse experiences that occurred before the age of 18. Self-reported height and weight were used to calculate BMI and categorize women as normal-weight ($<25.0 \text{ kg/m}^2$), overweight (25.0 to 29.9 kg/m^2), obese (30.0 to 39.9 kg/m^2), or severely obese ($\geq 40 \text{ kg/m}^2$). The relationship between CSA and BMI was examined using multinomial logistic regression analysis.

Results: Overall, 31% of women in the sample reported CSA, and 57% had BMI $\geq 25.0 \text{ kg/m}^2$. Mean BMI was $27.8 (\pm 7.2) \text{ kg/m}^2$ and was significantly higher among women who reported CSA than among those who did not report CSA (29.4 vs. 27.1 , $p < 0.01$). CSA was significantly related to weight status; 39% of women who reported CSA compared with 25% of women who did not report CSA were obese ($p = 0.004$). After adjusting for age, race/ethnicity, and education, women who reported CSA were more likely to be obese (odds ratio, 1.9; 95% confidence interval, 1.1–3.4) or severely obese (odds ratio, 2.3; 95% confidence interval, 1.1–5.2).

Discussion: Our findings, in conjunction with the available literature, suggest that CSA may be an important risk factor

for obesity. Understanding CSA as a factor that may contribute to weight gain or act as a barrier to weight loss or maintenance in lesbians, a high-risk group for both CSA and obesity, is important for developing successful obesity interventions for this group of women.

Key words: sexual orientation, body weight, women, sexual abuse

Introduction

Obesity is one of the leading causes of preventable death. It is associated with early mortality, hypertension, diabetes mellitus, coronary artery disease, and many other chronic conditions that can be prevented with effective weight management (1,2). Current obesity interventions are only moderately successful, and prevalence rates have been steadily increasing over the past decade (3). Although many individuals are initially successful in losing weight, few are able to maintain weight loss over time (4). To develop more effective prevention and intervention strategies, it is imperative to better understand risk factors related to the development and maintenance of obesity.

While obesity is prevalent in all segments of the U.S. population, some subgroups seem to be particularly vulnerable. For example, several studies have found that obesity is more prevalent among women with histories of childhood sexual abuse (CSA)¹ (5–7). Williamson et al. (8) found that adult women and men who reported histories of CSA were 30% more likely to be obese than adults without such histories. In addition, studies comparing women who self-identify as lesbians with women in the general population (9,10) and with self-identified heterosexual women (11,12) have found higher rates of obesity among lesbians. Further, existing research suggests that lesbians are more likely than heterosexual women to report CSA (13–16). The Chicago Health and Life Experiences of Women study (CHLEW), a longitudinal study of a large and diverse sample of women who self-identify as lesbian, provides a unique opportunity

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¹ Nonstandard abbreviations: CSA, child sexual abuse; CHLEW, Chicago Health and Life Experiences of Women study; OR, odds ratio.

to examine the relationship between CSA and obesity in a group of women who seem to be at heightened risk for both CSA and obesity.

Research Methods and Procedures

Data are from the first wave (2001–2002) of the CHLEW. In the current study, English-speaking women who were age 18 years or older and who self-identified as lesbian were recruited from Chicago and the surrounding suburbs. Recruitment efforts targeted clusters of social networks, including formal community-based organizations, informal community social groups, and individual social networks (including those of women who participated in the study). Advertisements were placed in local newspapers, and flyers were posted in churches and bookstores and were distributed to individuals and organizations via formal and informal social events and social networks. We made a concerted effort to reach women who have been under-represented in studies of lesbian health, including women of color, older lesbians, and lesbians of lower socioeconomic status. We used a variety of methods to reach these women, including, for example, targeted advertisements in newspapers and organizations that serve these groups. In addition, our study team included older women and women of color, a factor that helped to gain access to these groups.

Face-to-face interviews were conducted in a private setting (primarily the participants' homes) by trained female interviewers. All of the interviewers received extensive training in general field-interviewing techniques as well as study-specific training that included attention to potentially sensitive topics such as sexual orientation, substance use, sexual experiences, and childhood abuse experiences. After a review of the study's purpose and procedures, participants were asked to read and sign a detailed consent form. The study was approved by the University of Illinois at Chicago Institutional Review Board.

Description of the Sample

A total of 447 women participated in the CHLEW study. The current analysis was limited to women ($n = 416$) for whom complete data were available on height, weight, and CSA and who reported their racial/ethnic identity as non-Hispanic white, non-Hispanic black, or Hispanic/Latina. A small number ($n = 23$) of women reported "other" racial/ethnic identities: Asian American/Pacific Islander, Native American, or biracial or multiracial. Given the known racial/ethnic variations in obesity patterns among women included in this category, these participants were excluded from the current analysis. Women included in the analysis ranged in age from 18 to 83 years (mean, 37.8 years). Fifty percent identified as non-Hispanic white, 29% as non-Hispanic black, and 21% as Hispanic/Latina. Comparisons of race/ethnicity with 2000 census data indicated that the sam-

ple closely reflected the distribution of the population in Cook County, where the vast majority of CHLEW participants lived (17). In contrast to women in the general Cook County population, but similar to other lesbian samples, overall the participants were well educated: 55% had a bachelor's degree or higher. Household income, however, spanned a broader range. Twenty-six percent of the sample had annual household incomes under \$20,000, whereas 22% had incomes of \$75,000 or more per year. The majority of participants reported that they worked full-time either at one job (53%) or multiple jobs (10%). Twelve percent worked part-time, and 20% were not employed. More than two thirds (70%) of participants were in a committed relationship with a female partner, and 19% had at least one child living with them at the time of the interview.

Measures

Interviews in the CHLEW used a slightly adapted version of the questionnaire from the National Study of Health and Life Experiences of Women, a 20-year longitudinal study of women's drinking (18–20). The Health and Life Experiences of Women questionnaire was designed in cooperation with the National Opinion Research Center and was used to collect data from >1600 women between 1981 and 2001.

CSA. CSA status was based on the following question: "Do you feel that you were sexually abused when you were growing up?" (coded as 0 = no and 1 = yes). The interview included in-depth questions about childhood sexual experiences before age 18 (21,22). Responses to these questions could be used to classify women's experiences based on Wyatt's (23) definitions of intra-familial and extra-familial CSA. After the questions about childhood sexual experiences, participants were then asked whether they perceived that they had been sexually abused when they were growing up. Because Wyatt's definition is relatively inclusive and tends to capture some experiences that are considered consensual by participants, we decided to use the measure of self-perceived CSA in the current analyses. Nearly all (94%) of the women who reported self-perceived CSA also met Wyatt's criteria; 9 women who reported self-perceived CSA could not be classified using Wyatt's criteria because of insufficient information.

Height and weight. Women were asked to self-report their height and weight. BMI was calculated as weight (kg) divided by height (m) squared. Based on standardized cut-off points for BMI, women were placed in one of four categories: <25 kg/m² (normal weight), 25.0 to 29.9 kg/m² (overweight), 30.0 to 39.9 kg/m² (obese), and ≥40.0 kg/m² (severely obese).

Statistical Analyses

Relationships between CSA and BMI and between potential demographic covariates and BMI were examined using χ^2 analysis. A single multinomial logistic regression

Table 1. Percentage of 416 self-identified lesbian women in the Chicago Health and Life Experiences of Women study by BMI categories, age, race/ethnicity, and education

	N	BMI (kg/m ²)				p
		<25.0 (%)	25.0 to 29.9 (%)	30.0 to 39.9 (%)	>40.0 (%)	
Overall	416	42.8	28.1	21.6	7.9	
Age						0.234
≤30 yrs	128	51.6	26.6	17.2	4.7	
31 to 40 yrs	120	38.3	26.7	24.2	10.8	
41 to 50 yrs	96	43.8	27.1	20.8	8.3	
≥51 yrs	72	33.3	34.7	26.4	5.6	
Race/ethnicity						<0.001
White	209	51.7	26.8	14.8	6.7	
Black	120	27.5	29.2	32.5	10.8	
Hispanic	87	42.5	29.9	23.0	4.6	
Education						0.027
<BS degree	187	36.9	26.7	26.2	10.2	
≥BS degree	229	47.1	29.5	18.1	5.3	

BS, Bachelor of Science.

model was used to estimate the odds ratios (ORs) for each BMI category based on history of CSA. The dependent variable, BMI, included four categories: normal weight (reference), overweight, obese, and severely obese. The ORs were adjusted for age (continuous), race/ethnicity (white, black, Hispanic), and education (bachelor's degree or higher: 0 = no and 1 = yes). SPSS statistical software (version 13.0; SPSS, Inc., Chicago, IL) was used for all analysis procedures.

Results

Nearly one third (31%) of lesbians in the sample reported CSA. Reports of CSA did not differ by age. Compared with white lesbians (26%), more Hispanic lesbians (40%) and black lesbians (33%) reported CSA ($p = 0.05$).

BMI ranged from 15.5 to 54.9 kg/m² among women in the sample; the mean was 27.8 (± 7.2) kg/m². More than one half of the women (57%) had a BMI ≥ 25.0 kg/m², which classified them as overweight or obese. The prevalence rates of overweight, obesity, and severe obesity were 28%, 22%, and 8%, respectively. BMI was significantly related to several demographic characteristics (Table 1). Significantly higher rates of obesity and of severe obesity were found in black lesbians (33% and 11%, respectively) compared with Hispanic lesbians (23% and 5%, respectively) and with white lesbians (15% and 7%, respectively) ($p < 0.001$). Rates of obesity and severe obesity were significantly higher in lesbians with less than a bachelor's degree compared with those who had bachelor's degrees or higher ($p = 0.027$).

The adjusted (age, race/ethnicity, and education) mean BMI of women who reported CSA was significantly higher than the BMI of those who did not report CSA (29.4 vs. 27.1, $p < 0.01$). As shown in Figure 1, CSA was significantly associated with adult weight status. Lesbians who reported CSA were more likely than those who did not report CSA to be obese (29% vs. 19%) or severely obese (11% vs. 6%).

After adjusting for age, race/ethnicity, and education, lesbians who reported CSA were twice as likely to have a BMI between 30.0 and 39.9 kg/m² (OR, 1.9; 95% confidence interval, 1.1 to 3.4) and more than twice as likely to have a BMI ≥ 40.0 kg/m² (OR, 2.3; 95% confidence interval, 1.1 to 5.2) than lesbians without a history of CSA (reference group, BMI < 25 kg/m²).

Because the sample included a very broad age range, to assess for potential survival bias we re-analyzed the data excluding all women over age 60. The results were unchanged, possibly because of the relatively low number ($n = 9$) of study participants in this age group (data not presented).

Discussion

In this sample of adult lesbians, a history of CSA was related to higher BMI and higher rates of obesity and severe obesity. This association was independent of age, race/ethnicity, and educational level. In addition, the association of CSA with weight status among women who were se-

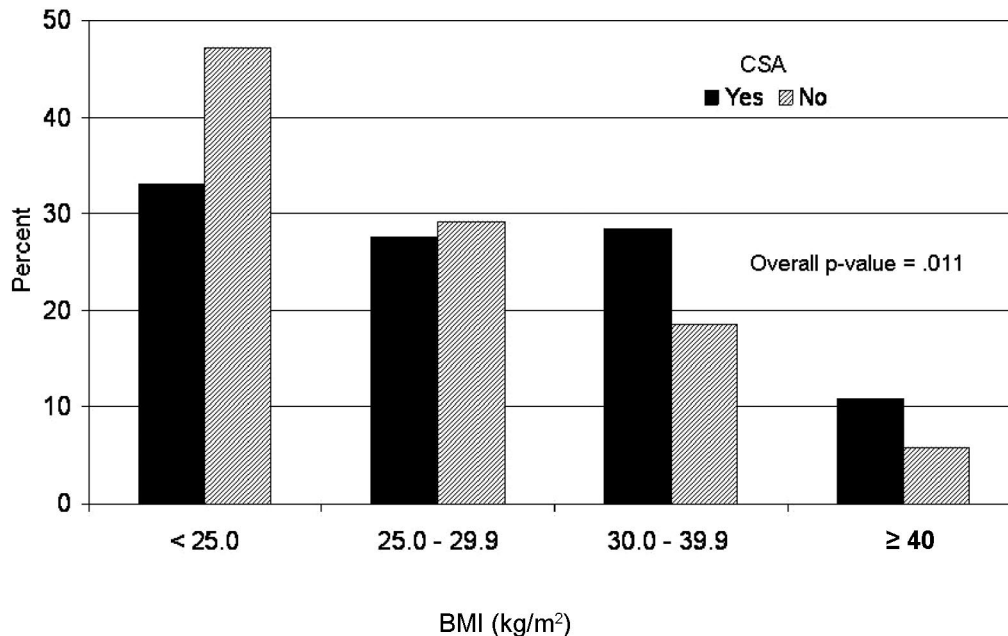


Figure 1: Percentage of 416 self-identified lesbian women in the CHLEW by BMI categories and CSA status.

verely obese (BMI ≥ 40 kg/m²) was stronger than the association among women who were obese (BMI 30.0 to 39.9 kg/m²).

These results are consistent with findings from earlier studies of women in the general population. For example, a clinic-based study of 231 women found that 60% of those who reported CSA were 50 or more pounds overweight, and 25% were 100 or more pounds overweight, compared with 28% and 6%, respectively, of women who did not report CSA (5). In a separate study of obese women participating in a weight-loss program, Felitti (6) found significantly higher rates of CSA in the obese treatment group than in the control group of normal-weight women. In a cross-sectional study of 511 female clients in a family practice, women who reported CSA (22%) were more likely than those without CSA histories to be overweight (7). Finally, in a representative sample of adult women and men participating in the Adverse Childhood Experiences Study, those with a history of CSA were 1.3 times more likely to be obese as adults than those who had no history of CSA (8). Similar to results of our study, the findings of Williamson et al. (8) were independent of several demographic characteristics shown in previous studies to be associated with obesity. In contrast to our results, two studies found no association between sexual abuse and obesity (24,25); however, these studies did not differentiate between childhood and adult sexual abuse.

Strengths and Limitations

This study has a number of notable strengths. Unlike the majority of previous studies of lesbian health, the CHLEW sample is both large and diverse. The sample was recruited

using a variety of strategies and sources and excluded health clinics and other settings that might introduce systematic sample bias. Data were collected by highly trained interviewers using a well-validated instrument.

Despite these strengths, several important limitations should also be considered when interpreting the findings. The study used non-probability sampling methods and was restricted geographically to the Chicago metropolitan area. In addition, research with lesbians is inherently subject to sample bias resulting from stigma associated with a non-heterosexual orientation. Existing studies, even those using probability samples, typically over-represent white, well-educated, and middle-class lesbians because these women are most comfortable participating in research and tend to be most comfortable disclosing their sexual orientation (26). Although we were successful in recruiting a sample that was more diverse (in both race/ethnicity and age) than those in most previous studies of lesbians, we cannot evaluate how well our sample represents lesbians in general. At best, women in the CHLEW represent lesbians who are “out” enough (i.e., willing to disclose their sexual orientation) to participate in an in-person interview about lesbian health.

Data were collected using self-report measures, which are subject to recall and social desirability. Previous research indicates that individuals tend to under-report weight and over-report height (27). However, error introduced by this reporting bias would lead to an underestimation of BMI and would not be in the direction of the null hypothesis. Thus, it is likely that our results represent a conservative estimate of the relationship between CSA and obesity.

Finally, the purpose of the CHLEW study was to examine risk and protective factors for heavy drinking and drinking-related problems. Therefore, the survey questionnaire did not include many important covariates of obesity, such as physical activity and dietary habits. The absence of data on childhood-weight status or weight changes during adulthood prohibits examination of the temporal relationship between CSA and obesity.

Despite these limitations, our findings support previous literature suggesting that CSA is an important risk factor for obesity in women. Although it is unlikely that efforts to prevent adult obesity will focus on prevention of CSA, understanding CSA as a factor that may contribute to weight gain, or act as a barrier to weight loss, may be a key element in the development of successful obesity intervention strategies. For example, King et al. (28) found that obese women in a treatment program with a history of sexual abuse lost less weight and were less adherent to the weight loss program than those who did not have a history of sexual abuse. Felitti and Williams (29) found that women with a history of CSA regained more weight after a weight loss intervention than women without such histories.

Several reasons have been posited as barriers to successful weight management among women who were sexually abused as children (6,24,30), including the following: 1) obesity may serve as a protective factor against additional unwanted sexual attention; 2) women with histories of CSA may experience less self-control of eating when experiencing distress; and 3) CSA history may be associated with lower levels of self-efficacy regarding weight loss. Whether or not lesbians have higher rates of CSA, as is suggested by several recent studies (13–16), the impact of CSA on lesbians may differ from the impact of CSA on heterosexual women. If so, such differences may have important implications for weight management programs and weight loss interventions.

Healthcare providers who work with sexual-minority adolescents can play an important role in the prevention of overweight and obesity in this population. It is reasonable to assume that coming to terms with CSA may be complicated for lesbians. The transition from adolescence to adulthood is a critical developmental period, when important health behaviors are adopted and attitudes and identity are formed. This transitional period is also characterized by rapid physical maturational changes that can be a source of embarrassment or discomfort. Such discomfort is likely to be intensified by sexual shame, confusion, and secrecy among adolescents who have experienced CSA (31). Girls who are questioning their sexual orientation or who identify as lesbian must often navigate the transitional period of adolescence within an oppressive, if not overtly hostile, social context and without the support of community, family, and peers. Some researchers argue that this context is an addi-

tional form of victimization (13), which adds to shame, negative self-concept, and risk for unhealthy behaviors, such as overeating.

Thus, clinicians and weight management program staff who serve women must be prepared to address the needs of lesbian survivors of CSA. Asking questions about both CSA and sexual orientation in health histories and assessments is an important first step in gathering data about the CSA-obesity link and in planning behavioral strategies to address potential barriers to weight loss and management for lesbian survivors of CSA. Additional research that examines potential explanations for the relationship between CSA and obesity is needed to develop more effective prevention and intervention strategies.

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