

Associations of Sexual Identity or Same-Sex Behaviors With History of Childhood Sexual Abuse and HIV/STI Risk in the United States

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Objective: To measure associations of childhood sexual abuse (CSA) with sexual orientation, behaviors, and attractions and HIV/sexually transmitted infection (STI) incidence in a nationally representative sample of men and women.

Methods: Data from the 2004–2005 Wave 2 of the National Epidemiologic Survey on Alcohol and Related Conditions were analyzed, including frequencies of CSA and HIV/STI incidence for 5 subgroups defined by sexual orientation based on identity and behaviors and attraction to the same sex or opposite sex.

Results: Overall, 14.9% of women and 5.2% of men reported CSA. Among women, bisexuals, lesbians, and heterosexuals with same-sex partners had 5.3 times, 3.4 times, and 2.9 times the odds, respectively, for CSA occurring sometimes/more frequently (vs. never) compared with heterosexuals not having same-sex partners or attractions. Among men, bisexuals, gay men, and heterosexuals with same-sex partners had 12.8 times, 9.5 times, and 7.9 times the odds, respectively, for CSA. Men and women sometimes or frequently abused had significant increases in odds for HIV/STI incidence compared with those not abused. Among women, sexual minorities had 3.8 times the odds and heterosexuals had 2.8 times the odds, whereas among men, sexual minorities had 4.2 times odds and heterosexuals had 1.5 times odds.

Conclusions: Extraordinarily high rates of CSA were observed for sexual minorities, and sexual minorities were more likely to have incident HIV or STIs, in this U.S. population survey. Identifying the impact of CSA among heterosexuals and sexual minorities in the US is a crucial first step in examining the sequelae of CSA, including the potential mediators of mental health and substance abuse disorders in the relationship between CSA and sexual risk taking.

Key Words: childhood sexual abuse, HIV risk, NESARC, sexual orientation

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INTRODUCTION

Previous research indicates that lesbian, gay, and bisexual (LGB) individuals have a higher risk of childhood sexual abuse (CSA) than their heterosexual counterparts. Numerous studies have shown high prevalence rates of self-reported CSA, among LGB individuals, ranging from about 15% to nearly 50%, depending on a number of factors including definitions of both sexual orientation and CSA.^{1–11}

Although these previous studies have been invaluable in identifying higher rates of CSA among LGB individuals, there are some limitations. Many of the previous studies have not had a large enough sample size to analyze the differences among LGB persons, in particular, the difference between gay/lesbian and bisexual individuals. Most studies have also only contained data on men or women, not both. Furthermore, many of the studies recruited study participants from convenience samples through sexually transmitted infection (STI) clinics, LGBT Pride events, or via self-selection in response to advertisements in LGB media and have not utilized heterosexual subgroups as referents. In the absence of heterosexual reference groups, comparisons between heterosexual and LGB populations were not made, or statistics from previous work describing the prevalence of CSA among heterosexuals were adapted for comparison.

There is general consensus that all people, regardless of sexual orientation who have been sexually abused as children, are much more likely to engage in high-risk sexual behaviors as adults and adolescents^{12,13}. High-risk sexual behavior puts a person at increased risk for acquisition of STIs, including HIV. CSA has also been shown to increase the risk of alcohol dependence^{14–16} and illegal drug use,^{16,17} which may mediate or modify the relationship between CSA and subsequent risky sexual behaviors.^{18,19} However, the majority of these studies have only been done with women. Those that have focused on men have not included data on sexual orientation or have primarily targeted self-identified homosexual or bisexual men.

Our current population-based study of sexuality and CSA utilizes data from the national epidemiologic survey on alcohol and related conditions (NESARC), a large longitudinal survey designed to analyze the mental health status and substance use patterns of individuals living in the United States.^{20,21} Wave 2 of the study contained specific questions about sexual identity, behaviors and attractions, and detailed questions about previous CSA, and HIV, and STI incidence.

Use of data from NESARC, along with survey sampling weights, enabled us to estimate US population-level rates

of LGB sexual identity, rates of CSA, and HIV and STI incidence for these groups in comparison with heterosexuals. We theorized that men and women who identify as LGB or have same-sex attraction and/or behavior would report higher prevalences of CSA compared with heterosexuals who report neither same-sex partners nor attraction. However, this should in no way be interpreted that CSA is a cause of developing a LGB sexual orientation, rather LGB individuals as children are at a higher risk of experiencing CSA. We also expect that sexual minority men and women in the United States will have higher rates of HIV/STI incidence than their heterosexual peers among those who have experienced CSA and those who have not.

METHODS

Study Population

We utilized the data from Wave 2 of NESARC. NESARC is a nation-wide household survey administered by NIAAA. Data were collected from individuals in computer assisted face-to-face interviews conducted in participants' homes in 2 waves; wave 1 from 2001 to 2002 and wave 2 from 2004 to 2005. The population comprised civilian, noninstitutionalized adults living in the United States. The NESARC study design involved multistage sampling, with stratification and clustering of the study population. Additionally, blacks and Hispanics were oversampled as were young adults in the age group 18–24. The NESARC study design is further described elsewhere.^{20–22}

Of the 39,959 individuals who completed wave 1 of NESARC and were eligible for Wave 2, 34,653 participated in wave 2, for a response rate of 86.7%. The response rate for wave 1 was 81%, giving an overall response rate of 70.2% for wave 2.

To be eligible for inclusion in the current study, people had to provide information on sexual orientation, attraction, and behaviors with men and/or women. Additionally, people needed to answer questions concerning CSA. If participants provided no answer to 1 or more of the 4 questions concerning CSA, yet provided a response of "sometimes" or greater to any of the remaining questions, they were included in the study. Thirty-three thousand nine hundred two (97.8% of wave 2) were included in the present study. The Drexel University Institutional Review Board approved the current study.

Data Included for Analyses

Childhood Sexual Abuse

CSA was defined as sexual experiences with an adult or any other person younger than 18 years when the individual did not want the sexual experience or was too young to know what was happening. Specifically, survey items measured occurrences of the following: (1) being touched or fondled in a sexual way; (2) being forced to touch another in a sexual way; (3) sexual intercourse; or, (4) intercourse was attempted. For each of these, frequencies included the following: never, almost never, sometimes, fairly often, very often, or unknown. We collapsed the CSA data for all

analyses into 3 groups: never, almost never, and frequent/sometimes.

HIV/STI Incidence

HIV/STI Incidence was measured using the responses to questions about HIV or STI infections diagnosed and confirmed by a health professional in the 12 months before participation in wave 2.

Sexual Orientation

Sexual orientation was classified based on self-identity (heterosexual, gay or lesbian, bisexual, or not sure), sexual behavior (had sex with only males, only females, both, or never had sex), and sexual attraction (only attracted to females or only attracted to males, mostly attracted to females or mostly attracted to males, or equally attracted to females and males). From these data fields, we classified sexuality into 5 groups as follows: gay/lesbian, bisexual, heterosexual with no same-sex sexual partners or attraction, heterosexual with some same-sex attraction but no same-sex partners, and heterosexual with at least some same-sex sex partners. To examine the association between HIV/STI incidence and CSA, we further collapsed sexual orientation into 2 groups. The referent group consisted of heterosexual by identity and behavior. The sexual minority group included gay/lesbian, bisexual, and heterosexual with some same-sex behavior. This was done to preserve statistical power as the rates of HIV/STI incidence are low in the United States.

Demographics

Demographic data collected during wave 2 included race/ethnicity (white, non-Hispanic; black, non-Hispanic; American Indian/Alaska Native, non-Hispanic; Asian/Native Hawaiian/other Pacific Islander, non-Hispanic; or Hispanic, any race), age at the time of the interview (20–30, 31–40, 41–50, 51–60, >60), region (Northeast, Midwest, South, West), educational level (high school or less, some college, completed 4-year degree, or at least some grad school), annual household income (<\$15,000, \$15,000–24,999, \$25,000–34,999, \$35,000–49,999, \$>50,000), and marriage status (married/living together, never, divorced/separated, or widowed).

Data Analyses

All data were weighted by NESARC wave 2 weights, and all analyses were performed using survey procedures with SAS 9.1 software, which accounted for the complex study design. "We specifically used both proc surveyfreq and proc surveylogistic with the strata, cluster, and weight variables, defined by the NESARC dataset".

To identify potential confounders in the relationship between sexual orientation and CSA, we conducted contingency table analysis of demographic variables by CSA, sexual orientation, and HIV/STI incidence, separately, for men and women. Rao–Scott χ^2 tests were utilized to test for association, compensating for the survey design.

To determine the magnitudes of the association between CSA and sexual orientation, CSA was regressed on sexual orientation and all potential confounding demographic variables

using the never group of CSA and heterosexual with no same-sex behaviors or attractions as the referents. Men were analyzed separately from women. Final models were constructed using backward elimination of potential confounding variables, which did not alter the regression coefficients of the full model in 2 or more categories by at least 10%. The same strategy was utilized to determine the association between HIV/STI incidence and CSA, regressing HIV/STI incidence on CSA.

RESULTS

Self-Reported Sexual Identity and Demographic Correlates

All proportions are weighted results. Among women, 0.6% identified as lesbian, 0.8% identified as bisexual, 1.5% identified as heterosexual, but with some same-sex partners, 4.6% identified as heterosexual, with some same-sex attraction, and 92.5% identified as heterosexual, with no same-sex partners or attraction (Table 1).

For men, 1.1% identified as homosexual, 0.4% identified as bisexual, 2.4% identified as heterosexual with some same-sex partners, 1.8% identified as heterosexual with some same-sex attraction, and 94.3% identified as heterosexual with no same-sex partners or attraction (Table 2).

All associations of demographics with sexual identity were statistically significant ($P < 0.0001$) (Tables 1, 2) due to the very large sample size of the NESARC survey. However, only age at the time of the interview was a confounding variable in the relationship between CSA and sexual orientation, for women. Lesbians, bisexuals, and women who identified as heterosexual with at least some same-sex partners were younger (79.2%, 83.5%, 68.7%, respectively, <51 years of age) compared with heterosexual women with no same-sex attractions or partners (57% <51 years of age).

There were no demographic variables found to be confounding in the association between CSA and sexual orientation for men at the highest level of CSA, yet for men almost never abused compared with those never abused, age, ethnicity/race, education level, and marriage status were all confounders. Similar associations of demographics with sexual identity were seen for men (Table 2).

CSA

Among all women, 7.2% reported CSA having occurred sometimes or frequently and 7.7% reported CSA having occurred almost never (Table 3). A much larger proportion sexual minority women reported CSA compared with heterosexual women, with 43.5% of bisexuals, 38.1% of lesbians, and 28% of heterosexuals with same-sex partners reporting any CSA compared with 14.2% of heterosexual women reporting any CSA (Fig. 1).

Fewer men reported any CSA compared with women as follows: 1.8% reported having been abused sometimes or more frequently and 3.5% reported being abused almost never (Table 4). Although the overall rates of CSA were higher for women than for men, the trends among the different sexual orientation groups were similar, with sexual minority men

reporting more CSA than heterosexual men, as 19% bisexuals, 18.6% homosexuals, 19.4% heterosexual with same-sex partners, and 4.6% heterosexuals reported any CSA (Fig. 1).

The relative odds of CSA were markedly higher for bisexual, lesbian, and heterosexual women with some same-sex partners and/or attractions compared with heterosexual women with neither (Table 5). Bisexual women had the highest relative odds of being sometimes or more frequently abused when compared with the heterosexual referent group, with 5.3 times odds. Similarly lesbians, heterosexual women with same-sex partners, and heterosexual women with same-sex attraction had 3.4 times, 2.9 times, and 1.6 times the odds of reporting sometimes or more frequent abuse compared with heterosexual women without same sex partners or attraction. Women almost never abused had similar trends in odds, although the magnitudes were smaller (Table 5).

The adjusted associations of sexual identity with reported CSA were higher for men than was reported for women (Table 5). For men, none of the covariates were confounding for the model comparing sometimes or frequent CSA to never, whereas 4 covariates were included in the final model comparing almost never CSA to none as follows: age, race, education level, and marriage status. Bisexual men had the highest relative odds of being sometimes or more frequently sexually abused, with 12.8-times odds compared with the heterosexual referent group. Similarly, gay and heterosexual men with same-sex partners had 9.5 times and 7.9 times the odds of reporting sometimes or more frequent abused compared with heterosexual men with no same-sex partners or attraction.

HIV/STI Incidence

Nearly all associations of demographics with HIV/STI incidence were statistically significant. The only demographic that did not vary among those with incidence HIV/STI and those without was education in heterosexual women and was not evaluated as a potential confounder. For heterosexual women, age and marriage status were confounders; for sexual minority women, age, race, and region were confounders. For heterosexual men, age and income were confounders; for sexual minority men, race, region, income, education, and marriage status were confounders (Table 6).

Women who were sexually abused as children had an increased risk of HIV/STI incidence compared with those who were not abused for all levels of abuse (Table 6). Heterosexual women almost never abused were 1.6 times as likely to have incident HIV or STI, whereas those sometimes or frequently abused were 2.8 times as likely compared with those never abused. Sexual minority women almost never abused were 7.1 times as likely and those sometimes/frequently abused were 3.8 times as likely to have incident HIV or STI compared with those never abused.

Both heterosexual men and sexual minority men who were almost never abused did not have a significant increase in risk of HIV/STI incidence. However, heterosexual men sometimes or frequently abused had 1.5-fold risk [odds ratio (OR) = 1.54, 95% confidence interval (CI) = 1.34 to 1.78] and sexual minority men had 4.2-fold risk (OR = 4.23, 95% CI = 2.36 to 7.59).

TABLE 1. Demographic Characteristics Among Women by Sexual Orientation

	Women Heterosexual					
	No Same-Sex Attraction or Sexual Partners, % (SE), n = 18,047	Same-Sex Attraction, No Sex Partners, % (SE), n = 946	Some Same-Sex Partners % (SE), n = 311	Lesbian, % (SE), n = 142	Bisexual, % (SE), n = 159	Total, % (SE), n = 19605
Race/ethnicity						
Black	12.0 (0.2)	11.4 (0.3)	10.4 (0.4)	13.8 (0.6)	13.3 (2.5)	12.0 (0.2)
Native American	2.3 (0.1)	1.7 (0.4)	3.7 (0.6)	4.7 (1.7)	3.4 (0.2)	2.3 (0.1)
Asian/Pacific Islander	4.0 (0.06)	5.6 (0.2)	4.3 (0.1)	4.6 (0.1)	3.1 (0.1)	4.1 (0.06)
Hispanic, any race	10.9 (0.1)	11.8 (0.4)	11.9 (0.6)	6.5 (0.5)	11.5 (1.9)	10.9 (0.1)
White	70.9 (0.3)	69.4 (0.7)	69.7 (1.0)	70.5 (1.6)	68.7 (2.9)	70.7 (0.3)
Age						
20–30	17.3 (0.2)	15.3 (0.6)	24.5 (1.4)	12.8 (1.2)	38.9 (2.9)	17.4 (0.2)
31–40	18.7 (0.1)	16.1 (0.6)	18.2 (1.0)	30.5 (1.3)	30.5 (2.0)	18.7 (0.1)
41–50	21.1 (0.2)	15.4 (0.5)	26.0 (1.6)	36.0 (1.7)	14.0 (1.8)	20.9 (0.2)
51–60	17.2 (0.2)	14.5 (0.6)	16.1 (1.1)	16.1 (0.6)	10.1 (1.1)	17.0 (0.2)
>60	25.8 (0.2)	38.7 (0.8)	15.2 (1.0)	4.7 (1.1)	6.4 (1.0)	26.0 (0.2)
Region						
Midwest	18.4 (0.3)	20.7 (0.6)	20.0 (1.4)	18.0 (0.6)	22.8 (2.2)	18.6 (0.2)
South	38.5 (0.3)	36.6 (1.0)	38.7 (1.5)	39.3 (1.7)	33.2 (2.3)	38.3 (0.3)
West	25.4 (0.2)	25.0 (0.8)	19.1 (1.2)	22.6 (1.3)	28.0 (2.3)	25.3 (0.2)
Northeast	17.7 (0.2)	17.7 (0.5)	22.2 (1.6)	20.1 (0.8)	15.9 (2.0)	17.8 (0.2)
Education						
High school or less	41.4 (0.3)	49.1 (1.0)	29.2 (1.6)	20.5 (1.9)	30.2 (2.8)	41.4 (0.3)
Some college	32.8 (0.2)	28.6 (0.9)	40.0 (1.7)	31.5 (1.0)	42.7 (3.2)	32.8 (0.2)
4-year degree	13.2 (0.1)	11.2 (0.4)	13.7 (1.0)	20.5 (0.8)	14.4 (1.6)	13.2 (0.1)
At least some grad school	12.5 (0.1)	11.1 (0.3)	17.1 (1.1)	27.5 (1.5)	12.7 (1.4)	12.6 (0.1)
Household income						
<15,000	14.8 (0.2)	21.2 (0.6)	13.6 (1.1)	10.8 (2.0)	17.9 (1.7)	15.1 (0.2)
15,000–24,999	14.0 (0.2)	16.5 (0.7)	10.0 (1.2)	7.0 (1.4)	14.8 (1.9)	14.0 (0.2)
25,000–34,999	12.2 (0.2)	14.2 (0.6)	13.3 (1.2)	7.8 (0.6)	12.2 (1.7)	12.3 (0.2)
35,000–49,999	15.4 (0.2)	14.2 (0.6)	19.1 (1.1)	13.9 (0.4)	24.5 (2.7)	15.5 (0.2)
>50,000	43.5 (0.3)	33.8 (0.8)	44.0 (1.6)	60.4 (1.7)	30.5 (2.3)	43.1 (0.2)
Marriage status						
Never	14.2 (0.2)	14.5 (0.4)	18.5 (1.4)	68.0 (1.3)	40.5 (2.1)	14.9 (0.2)
Divorced/separated	13.0 (0.1)	13.7 (0.5)	20.3 (1.1)	11.2 (0.7)	23.6 (1.9)	13.2 (0.1)
Widowed	10.9 (0.1)	16.8 (0.7)	4.4 (0.4)	1.4 (0.04)	2.8 (0.1)	10.9 (0.1)
Married/living together	61.8 (0.2)	55.0 (0.8)	56.8 (1.7)	19.4 (1.1)	33.1 (2.7)	60.9 (0.2)

P < 0.0001 for all categories, by Rao-Scott χ^2 .

DISCUSSION

This is perhaps the first nationally representative study to examine the relationship between sexual orientation and CSA in both men and women, using contemporaneous heterosexual populations as referent groups. We found that individuals who identify themselves as gay, bisexual, or heterosexual with some same-sex partners have sharply increased risks of experiencing CSA than heterosexuals who report neither same-sex partners nor attraction. This is in agreement with previous studies which have shown high prevalence rates of CSA among gay and bisexual individuals^{1–7,9–11,23,24}. Many of these studies have used convenience samples of LGB individuals without a heterosexual referent

group. The large diverse NESARC study population enabled us to study differences in risk of CSA by sex and sexual orientation. With the use of survey statistical methods, these results are applicable to the general US population and adjusted for confounding demographic variables to reveal less biased estimates of risk.

What is particularly striking is that of all subgroups, men and women who identified as bisexual had the highest odds for frequent or sometimes CSA compared with the referent heterosexual group. In comparison with gay men and lesbians, the odds for having been sometimes or frequently sexually abused for bisexual men and women were 1.3 times and 1.6 times, respectively, the odds observed for gays or lesbians. Our estimates of CSA among gay and bisexual

TABLE 2. Demographic Characteristics Among Men by Sexual Orientation

	Men					
	Heterosexual		Some Same-Sex Partners % (SE), n = 363	Gay, % (SE), n = 188	Bisexual, % (SE), N = 80	Total, % (SE), n = 14,297
	No Same-Sex Attraction or Sexual Partners, % (SE), n = 13,373	Same-Sex Attraction, No Same-Sex Sex Partners, % (SE) n = 293				
Race/ethnicity						
Black	9.9 (0.2)	14.5 (1.8)	12.5 (0.9)	5.7 (0.2)	13.1 (0.9)	10.0 (0.2)
Native American	2.0 (0.1)	1.6 (0.2)	2.2 (0.7)	4.5 (0.4)	0.5 (0.5)	2.0 (0.1)
Asian/Pacific Islander	4.3 (0.09)	4.7 (0.1)	4.0 (0.1)	3.2 (0.07)	0.9 (0.9)	4.3 (0.08)
Hispanic, any race	12.3 (0.1)	13.4 (0.9)	11.5 (0.8)	12.3 (0.5)	9.5 (0.8)	12.3 (0.1)
White	71.4 (0.3)	65.8 (2.1)	69.9 (1.1)	74.2 (0.7)	75.9 (1.8)	71.4 (0.3)
Age						
20–30	19.3 (0.2)	15.5 (1.8)	12.2 (1.3)	20.0 (1.0)	14.8 (2.7)	19.0 (0.2)
31–40	19.8 (0.2)	10.5 (1.0)	20.5 (1.0)	20.8 (0.9)	9.5 (0.7)	19.6 (0.2)
41–50	21.8 (0.2)	16.7 (1.1)	23.8 (1.2)	26.5 (0.7)	26.7 (3.6)	21.8 (0.2)
51–60	17.2 (0.2)	17.3 (1.5)	18.9 (1.0)	24.4 (1.1)	18.1 (2.4)	17.4 (0.2)
>60	21.8 (0.2)	40.0 (2.1)	24.5 (1.1)	8.4 (0.5)	30.8 (2.6)	22.1 (0.2)
Region						
Midwest	18.5 (0.2)	17.8 (0.9)	19.2 (0.8)	18.5 (0.4)	11.0 (2.7)	18.5 (0.2)
South	38.6 (0.3)	41.6 (1.5)	39.1 (1.5)	28.8 (1.1)	45.9 (3.1)	38.6 (0.3)
West	25.3 (0.2)	22.6 (1.5)	23.1 (1.1)	34.3 (1.1)	19.9 (2.8)	25.3 (0.2)
Northeast	17.5 (0.3)	18.1 (1.1)	18.7 (1.5)	18.3 (0.6)	23.2 (3.1)	17.6 (0.3)
Education						
High school or less	41.4 (0.3)	45.4 (2.1)	35.9 (1.7)	14.5 (1.1)	31.8 (3.2)	41.1 (0.3)
Some college	30.4 (0.3)	22.1 (2.3)	30.6 (1.5)	32.9 (1.1)	33.7 (3.8)	30.3 (0.3)
4-year degree	14.3 (0.2)	17.9 (0.9)	14.7 (0.7)	22.3 (0.9)	10.4 (0.8)	14.5 (0.2)
At least some grad school	13.8 (0.1)	14.7 (1.4)	18.8 (0.9)	30.4 (0.7)	24.0 (2.4)	14.2 (0.1)
Household income						
<15,000	8.9 (0.2)	15.7 (2.0)	11.4 (0.9)	13.3 (1.1)	20.0 (3.2)	9.1 (0.1)
15,000–24,999	10.9 (0.2)	17.0 (0.8)	10.3 (1.1)	12.6 (1.0)	19.5 (2.9)	11.1 (0.2)
25,000–34,999	11.4 (0.2)	13.6 (1.2)	9.8 (1.1)	11.7 (0.6)	14.3 (2.2)	11.4 (0.2)
35,000–49,999	16.4 (0.2)	17.7 (1.6)	19.3 (1.3)	21.0 (0.9)	12.2 (1.9)	16.5 (0.2)
>50,000	52.5 (0.2)	36.0 (1.6)	49.1 (1.6)	41.4 (1.0)	34.0 (3.2)	51.9 (0.2)
Marriage status						
Never	18.9 (0.2)	22.0 (2.1)	18.3 (1.3)	61.8 (1.0)	58.8 (3.3)	19.6 (0.2)
Divorced/separated	9.7 (0.1)	10.4 (0.7)	12.5 (0.7)	10.3 (0.7)	21.8 (2.1)	9.9 (0.1)
Widowed	2.8 (0.07)	8.7 (1.2)	2.9 (0.3)	0	3.0 (0.2)	2.9 (0.07)
Married/living together	68.6 (0.2)	58.9 (2.3)	66.2 (1.1)	27.9 (0.9)	16.4 (2.0)	67.7 (0.3)

P < 0.0001 for all categories, by Rao–Scott χ^2 .

men are similar to previous work from Arreola et al^{25,26} and higher than previous studies examining abuse in lesbians and bisexual women.⁴

Additionally, heterosexual men and women who reported same-sex partners had much higher rates of CSA compared with heterosexuals having no same-sex partners or attraction; in our study, the risks of CSA occurring sometimes or more frequently in these subgroups of men and women were roughly equivalent to what we estimated for gay men and lesbians. This group of individuals has only recently been examined in terms of sexual risk-taking and CSA because most studies characterize people based on either sexual behavior or sexual identity, not both. Yet, a high degree of discordance between sexual behavior

and sexual identity has previously been reported.^{27,28} The importance of including this group of self identified heterosexuals with same-sex sexual practices is underscored by the fact that in previous studies, self identified heterosexual men who had sex with men were more likely to have had STIs compared with heterosexual men having no same-sex partners^{28,29} and were less likely to use condoms during sex than homosexual men.^{28,30} Among women, studies have found that “mostly heterosexual” women are more likely to engage in risky sexual behaviors than heterosexual women^{31,32}.

The data presented here must be analyzed cautiously so that CSA is not identified as causally related to individuals becoming gay/lesbian or bisexual as adults. A more likely explanation is that as children some of these individuals may

TABLE 3. Demographic Characteristics of Women by History of CSA

	Women			
	CSA			
	Never, % (SE), n = 16,638	Almost Never, % (SE), n = 1493	Frequently/ Sometimes, % (SE), n = 1474	Total, % (SE), n = 19,605
Race/ethnicity				
Black	11.8 (0.2)	12.3 (0.4)	13.5 (0.4)	12.0 (0.2)
Native American	2.0 (0.1)	3.3 (0.4)	4.1 (0.4)	2.3 (0.1)
Asian/Pac Islander	4.5 (0.06)	2.2 (0.2)	1.1 (0.1)	4.1 (0.06)
Hispanic, any race	11.1 (0.2)	8.7 (0.2)	11.6 (0.3)	10.9 (0.1)
White	70.6 (0.3)	73.5 (0.6)	69.7 (0.6)	70.7 (0.3)
Age				
20–30	17.6 (0.2)	17.3 (0.6)	15.9 (0.6)	17.4 (0.2)
31–40	18.1 (0.2)	20.6 (0.5)	24.1 (0.7)	18.7 (0.1)
41–50	19.9 (0.2)	26.2 (0.6)	27.8 (0.9)	20.9 (0.2)
51–60	16.8 (0.2)	16.5 (0.6)	19.9 (0.7)	17.0 (0.2)
>60	27.7 (0.2)	19.4 (0.5)	12.3 (0.4)	26.0 (0.2)
Region				
Midwest	18.5 (0.3)	17.7 (0.5)	20.2 (0.5)	18.6 (0.2)
South	38.1 (0.3)	41.7 (0.8)	37.3 (0.8)	38.3 (0.3)
West	25.5 (0.2)	25.2 (0.6)	22.6 (0.7)	25.3 (0.2)
Northeast	17.9 (0.2)	15.4 (0.5)	20.0 (0.6)	17.8 (0.2)
Education				
High school or less	41.7 (0.3)	36.4 (0.7)	43.1 (1.0)	41.4 (0.3)
Some college	32.1 (0.2)	36.3 (0.7)	37.2 (1.0)	32.8 (0.2)
4-year degree	13.4 (0.1)	13.2 (0.5)	9.7 (0.4)	13.2 (0.1)
At least some grad school	12.7 (0.1)	14.1 (0.3)	10.1 (0.4)	12.6 (0.1)
Household income				
<15,000	15.0 (0.2)	14.1 (0.5)	17.3 (0.6)	15.1 (0.2)
15,000–24,999	14.0 (0.2)	12.4 (0.6)	16.7 (0.6)	14.0 (0.2)
25,000–34,999	12.1 (0.2)	12.5 (0.4)	13.7 (0.6)	12.3 (0.2)
35,000–49,999	15.6 (0.2)	14.5 (0.6)	14.4 (0.5)	15.5 (0.2)
>50,000	43.2 (0.3)	46.5 (0.6)	37.8 (0.8)	43.1 (0.2)
Marriage status				
Never	14.9 (0.2)	15.6 (0.5)	13.9 (0.4)	14.9 (0.2)
Divorced/separated	12.1 (0.1)	17.1 (0.5)	22.1 (0.7)	13.2 (0.1)
Widowed	11.7 (0.1)	7.6 (0.4)	5.5 (0.3)	10.9 (0.1)
Married/living together	61.2 (0.2)	59.7 (0.7)	58.4 (0.8)	60.9 (0.2)

P < 0.0001 for all categories, by Rao-Scott χ^2 .

have declared their sexual preference or exhibited subtle behavioral cues that identified them as more vulnerable and thus targets for sexual abuse by predators. In fact, previous studies have reported that many LGB adults remember being “gender atypical” as children and reported physical and sexual abuse at the hands of peers and family members because of this difference.^{33,34}

Men and women sometimes or frequently abused had significant increases in risk for HIV/STI incidence compared

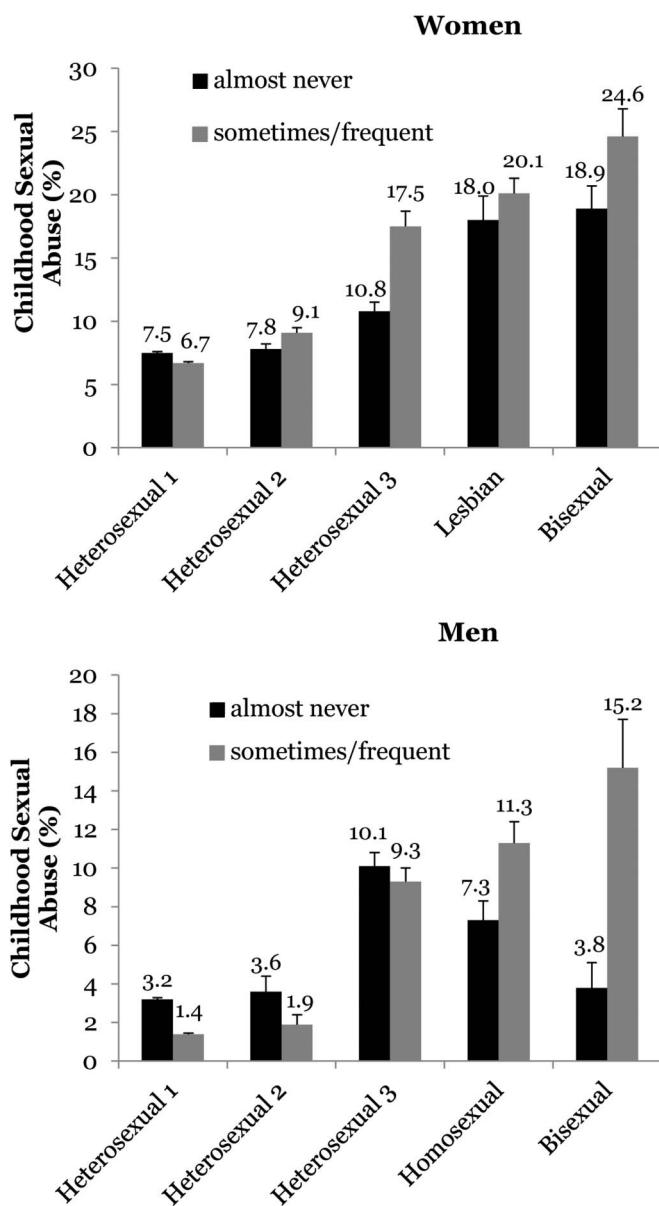


FIGURE 1. Childhood sexual abuse by sexual orientation, attraction, and behaviors. Frequencies of never abused not presented for simplification. Heterosexual 1 = heterosexual with no same-sex attraction or sexual partners; Heterosexual 2 = heterosexual with some same-sex attraction, no same-sex sexual partners; Heterosexual 3 = heterosexual with some same-sex sexual partners.

with those not abused. However, men almost never abused did not have an increase in risk of incident HIV/STI, although women almost never abused did. One possible reason for this discrepancy is that boys and men are less likely to report CSA than girls or women, and this misclassification could have reduced the risk of HIV/STI incidence among men who were abused. Underreporting of CSA by males in particular has been described in a recent report which found that boys take longer to disclose CSA at the time of the abuse than girls and,

TABLE 4. Demographic Characteristics of Men by History of CSA

	Men			
	CSA			
	Never, % (SE), n = 13475	Almost Never, % (SE), n = 545	Frequently/ Sometimes, % (SE), n = 277	Total, % (SE), n = 14297
Race/ethnicity				
Black	9.8 (0.2)	15.1 (0.7)	13.0 (0.8)	10.0 (0.2)
Native American	1.9 (0.1)	4.2 (0.7)	3.9 (0.8)	2.0 (0.1)
Asian/Pacific Islander	4.4 (0.08)	3.1 (0.2)	2.5 (0.07)	4.3 (0.08)
Hispanic, any race	12.2 (0.1)	14.8 (0.6)	13.7 (0.7)	12.3 (0.1)
White	71.7 (0.3)	62.8 (1.1)	66.9 (1.3)	71.4 (0.3)
Age				
20–30	19.2 (0.2)	15.2 (1.1)	17.0 (1.7)	19.0 (0.2)
31–40	19.5 (0.2)	19.0 (1.0)	26.4 (1.5)	19.6 (0.2)
41–50	21.7 (0.2)	25.8 (1.3)	19.8 (1.1)	21.8 (0.2)
51–60	17.3 (0.2)	17.9 (0.9)	20.7 (1.3)	17.4 (0.2)
>60	22.2 (0.2)	22.2 (0.9)	16.1 (1.2)	22.1 (0.2)
Region				
Midwest	18.6 (0.2)	17.6 (0.9)	16.7 (0.8)	18.5 (0.2)
South	38.7 (0.3)	39.6 (1.1)	33.5 (1.5)	38.6 (0.3)
West	25.3 (0.3)	25.7 (0.9)	25.9 (1.3)	25.3 (0.2)
Northeast	17.5 (0.3)	17.1 (1.0)	23.9 (1.6)	17.6 (0.3)
Education				
High school or less	41.1 (0.3)	40.1 (1.4)	40.0 (1.7)	41.1 (0.3)
Some college	30.2 (0.3)	30.1 (1.2)	39.2 (1.5)	30.3 (0.3)
4-year degree	14.5 (0.2)	14.3 (0.6)	10.8 (1.1)	14.5 (0.2)
At least some grad school	14.2 (0.1)	15.5 (0.9)	10.0 (0.4)	14.2 (0.1)
Household income				
<15,000	9.0 (0.1)	10.9 (0.9)	14.2 (0.9)	9.1 (0.1)
15,000–24,999	10.9 (0.2)	12.7 (0.8)	15.9 (1.7)	11.1 (0.2)
25,000–34,999	11.3 (0.2)	11.7 (1.0)	14.6 (1.3)	11.4 (0.2)
35,000–49,999	16.5 (0.2)	14.3 (0.7)	22.1 (1.0)	16.5 (0.2)
>50,000	52.3 (0.2)	50.4 (1.4)	33.2 (1.4)	51.9 (0.2)
Marriage status				
Never	19.5 (0.2)	19.4 (1.1)	23.8 (1.5)	19.6 (0.2)
Divorced/separated	9.5 (0.1)	16.6 (0.8)	13.1 (1.0)	9.9 (0.1)
Widowed	2.9 (0.07)	3.3 (0.6)	2.1 (0.2)	2.9 (0.07)
Married/living together	68.1 (0.3)	60.7 (1.3)	61.0 (1.6)	67.7 (0.3)

P < 0.0001 for all categories, by Rao-Scott χ^2 .

as adults, men wait much longer to discuss the experience than women.³⁵

Although the coding of sexual abuse did not differentiate between the different forms of abuse, this grouping was necessary to provide adequate levels of exposure for analysis. The effect of including less severe forms of sexual abuse would be to underestimate effect size (if men with less severe abuse were more like those who were not

abused) because the abuse group would be heterogeneous with respect to more and less severe forms of abuse.

Although sexual minority women almost never abused had an increased risk over heterosexual women, those sometimes or frequently abused did not. It seems that for women sometimes or frequently abused, sexual minority status does not add to the risk of HIV/STI incidence, yet the same is not true for sexual minority men, among which, those who were sometimes or frequently abused have a higher risk than heterosexual men. Further research should be performed to determine the different effects of CSA on men and women, looking at potential mediators in the pathway between CSA and HIV risk, which may be different for men and women.

One limitation to this study was underreporting of being gay, lesbian, or bisexual. For the National Survey of Family Growth, administered in 2002, questions concerning sexual behavior were self-entered by the respondent into a computer. The rates of homosexuality and bisexuality for both women (1.3% and 2.8%, respectively) and men (2.3% and 1.8%, respectively)³⁶ were higher than the current study. However, in the current study, 68% of the individuals who did not give information on sexual orientation also did not give information on CSA, and another 31% reported that they had never been sexually abused (data not shown). So, although the rates of minority sexual orientation and CSA could have been lower than accepted national numbers, the results showing the overall impact of sexual orientation on CSA are likely to be underestimates of the actual risks in these populations.

Another potential source of misclassification is that sexual minorities may be have been somewhat more likely to report child sexual abuse as they already feel like “outsiders” from the mainstream population and therefore are more comfortable describing uncomfortable events that occurred in their past. However, one of the highest risk groups was heterosexuals with some same-sex partners. These individuals do not consider themselves a sexual minority, yet they have a high risk of CSA. Misclassification of sexual orientation also could have occurred if abuse by a same-sex person during childhood was described as a sexual experience. However, we would not expect such a strong association between CSA and sexual minorities by such misclassification.

A limitation to the analyses is the use of ORs. The SAS surveylogistic procedure contains statements to specify the design strata, clusters, and weights, which are necessary to correctly estimate the variances of the estimators. Because ORs can overestimate relative risks, we compared the crude ORs to the relative risks for the weighted frequencies. We found that for men, the relative risk estimates were not significantly different from the ORs as they all fell within the 95% CIs of the ORs and for women, the ORs overestimated the relative risks by 28%, on average. The use of the SAS survey procedures enabled us to determine the association between CSA and sexual orientation using this data, allowing for control of confounding. HIV/STI incidence is rare in all 4 populations, ranging from 0.5% to 3.5%. As would be expected, the weighted ORs were virtually identical to the estimates of the relative risks, therefore, we are confident that

TABLE 5. Logistic Regression of Association of Sexual Orientation, Attraction, and Behavior With CSA

	CSA			
	Almost Never Versus Never Odds Ratio* (95% CI)	P	Frequent/Sometimes Versus Never Odds Ratio* (95% CI)	P
Women				
Sexual orientation				
Lesbian	2.96 (2.30 to 3.81)	<0.0001	3.38 (2.92 to 3.91)	<0.0001
Bisexual	3.74 (2.91 to 4.80)	<0.0001	5.26 (4.09 to 6.77)	<0.0001
Heterosexual				
Some same-sex partners	1.68 (1.43 to 1.98)	<0.0001	2.93 (2.47 to 3.47)	<0.0001
Some same-sex attraction	1.15 (1.02 to 1.29)	0.02	1.56 (1.42 to 1.72)	<0.0001
No same-sex attraction or practices	1	—	1	—
Men				
Sexual orientation				
Gay	2.38 (1.72 to 3.29)	<0.0001	9.51 (7.64 to 11.84)	<0.0001
Bisexual	1.19 (0.59 to 2.37)	0.6	12.79 (8.52 to 19.20)	<0.0001
Heterosexual				
Some same-sex partners	3.49 (2.93 to 4.17)	<0.0001	7.87 (6.59 to 9.41)	<0.0001
Some same-sex attraction	1.06 (0.65 to 1.75)	0.8	1.39 (0.81 to 2.38)	0.2
No same-sex attraction or practices	1	—	1	—

*Adjusted for age at time of interview.

†Adjusted for age at time of interview, ethnicity/race, education level, and marriage status.

the disease ORs for HIV/STI are not overestimates of the relative risks.

This national survey adds to important findings reported in previous studies. With the large sample size, we are able to perform separate analyses by sex and utilized detailed definitions of sexual orientation, involving sexual identity, attraction, and practices. Our data show that CSA is reported more often by sexual minorities, which places them at an increased risk of HIV/STI. Identifying the impact of CSA among both heterosexuals and sexual minorities in the United

States is a crucial first step in examining the sequelae of CSA, including the potential mediators of mental health and substance abuse disorders in the relationship between CSA and sexual risk taking.

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TABLE 6. Logistic Regression of Association of CSA with HIV/STI Incidence

	HIV+/STI+ in Past Year			
	Heterosexual		Sexual Minority	
	Odds Ratio* (95% CI)	P	Odds Ratio† (95% CI)	P
Women				
Childhood sexual abuse				
Never	1	—	1	—
Almost never	1.64 (1.21 to 2.24)	0.0017	7.06 (3.81 to 13.11)	<0.0001
Sometimes/frequent	2.80 (2.05 to 3.84)	<0.0001	3.80 (3.24 to 4.45)	<0.0001
Men				
Childhood sexual abuse				
Never	1	—	1	—
Almost never	1.05 (0.57 to 1.92)	0.9	1.20 (0.85 to 1.69)	0.3
Sometimes/frequent	1.54 (1.34 to 1.78)	<0.0001	4.23 (2.36 to 7.59)	<0.0001

*Adjusted for age and marriage status at time of wave2 interview.

†Adjusted for age, race, and region at time of wave2 interview.

‡Adjusted for age and household income at time of wave2 interview.

§Adjusted for race, region, household income, education level, and marriage status at time of interview.

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