

Cigar and smokeless tobacco use in the lesbian, gay, and bisexual population

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Large population-based studies of alternative tobacco use in the lesbian, gay, and bisexual (LGB) population are needed to more fully measure tobacco use outcomes. This descriptive study used standard measures of alternative tobacco use from two separate, statewide household-based studies to compare basic prevalence rates in the LGB population and the general population in California. A total of 1,950 adult lesbians, bisexual women, heterosexual women who have sex with women, gay men, bisexual men, and heterosexual men who have sex with men, all living in California, completed surveys between 2003 and 2004. From a general population-based sample (California Tobacco Survey, 2002), a total of 11,037 adult women and 9,488 men were used as comparisons. The prevalence rates for lifetime and current cigar smoking and smokeless tobacco use were lower for all LGB subpopulations compared with the general population.

Introduction

Research has shown higher rates of current smoking cigarettes in the lesbian, gay, and bisexual (LGB) population compared with the general population (Greenwood et al., 2005; Tang et al., 2004). In the first statewide random sample of LGB households in California, for example, we (Gruskin, Matevia, Pollack, & Bye, in press) found that 28.7% of lesbians, 26.9% of bisexual women, and 43.6% of women who have sex with women were current smokers compared with 12.1% of women in general. Current smoking rates also were higher in gay men (27.3%) than in men in general (19.7%). No study to date, however, has measured basic indicators of alternative tobacco use in the LGB population and compared these prevalence estimates with those found for the general population. These results are

typical of studies on smoking in the LGB population; however, no studies have been published that explore the rates of cigar or smokeless tobacco use.

State and national household surveys routinely monitor standard measures of alternative tobacco use in the general population. Cigar use, for example, increased dramatically in the early 1990s in California (Gilpin & Pierce, 1999) and in the rest of the United States. Cigars, in particular, are potent nicotine-delivery devices (Baker, Ainsworth et al., 2000; Baker, Thun et al., 2000). Prevalence rates of smokeless tobacco use among U.S. adult men has been high but with a notable decline from 1987 to 2000 (Nelson et al., 2006). Smokeless tobacco use among adult women, on the other hand, has been low and relatively unchanged since the late 1980s (Nelson et al., 2006).

Cigar smoking and smokeless tobacco use are strongly associated with cardiovascular diseases (Henley, Thun, Chao, & Calle, 2004). Alternative tobacco use also is associated with numerous forms of cancer (e.g., esophageal, laryngeal, lung, oral, pancreatic, and stomach) and other chronic diseases such as emphysema (Alguacil & Silverman, 2004; Chao et al., 2002). Because the use of alternative tobacco products could be perceived incorrectly as safer than cigarette smoking it is critical to understand

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the patterns of cigar and smokeless tobacco use among high-risk populations.

The goal of this paper is to measure lifetime and current estimates of alternative tobacco use in a probability sample of the California LGB population, and to compare these key tobacco metrics between these LGB and similarly aged women and men in California. This study fills in an important gap in the epidemiological literature of smoking in the LGB population.

Method

Overview

A population-based study of tobacco use in the LGB population living in California was completed between July 2003 and March 2004. Using a disproportionate, stratified random-digit-dialed (RDD) sample design and standard measures from the California Tobacco Survey, we conducted telephone interviews with a household population of 1,950 LGB individuals (898 women and 1,052 men). Measures of basic indicators of alternative tobacco use were compared descriptively using data from the LGB sample and from a general California Tobacco Survey sample. Although we asked about gender identity, not enough transgender people were included for us to do separate analyses. Interviewing procedures (and verbal informed consent procedures) were reviewed and approved by the Committee on Human Research, University of California, San Francisco.

LGB study methods

The size and the residential location of California's LGB population was estimated and mapped using a number of data sources (e.g., national surveys containing questions on sexual orientation or same-gender behavior, and U.S. Census same-gender domestic partner data). A total of 40 California ZIP codes were identified as having the highest proportion of LGB residents, and these were divided into two strata. Stratum 1, the stratum of highest estimated prevalence, contained the five ZIP codes in and around the Castro district in San Francisco and the West Hollywood area in Southern California. Stratum 2 contained the balance of the ZIP codes.

The RDD listings were developed by the Marketing Systems Group, which prepared the sample using its proprietary RDD sample-generation system, Genisys. This included linking telephone exchanges to the ZIP codes and strata, and screening out business, government, fax/modem, unassigned, and other nonworking residential phone numbers to leave all telephone exchanges believed to have residential service lines.

Disproportionate and adaptive sampling techniques were used to construct a RDD sample for all designated areas of the state. "Disproportionate sampling" involves sampling exchanges in areas with higher estimated densities of LGB individuals at a relatively higher rate and sampling exchanges in areas with lower estimated densities of LGB individuals at a relatively lower rate. "Adaptive sampling" involves learning the telephone exchanges that yielded the best chance of finding households containing an LGB individual and using that information to target release of sample in those exchanges later in the study. Both of these schemes were used to maximize "hit rates" and to minimize costs while still maintaining coverage of the selected telephone exchanges.

Households were screened by asking any adult household member if he or she met study inclusion criteria, and whether any other adult household members met the criteria. If more than one person per household was identified as eligible, only one individual was randomly selected to be interviewed. Respondent selection was made without regard to gender so that the proportions of males and females in the final sample reflected their prevalence in the population.

Up to 25 attempts were made to each telephone number. In general, up to five attempts were made to reach a household and speak to someone. If an interviewer ever spoke to a person, we made up to 10 additional attempts to screen the household for an eligible LGB respondent. If we determined there was an eligible LGB person, an additional 10 attempts were made to complete the interview. In many instances, we went beyond the 25-call limit if we had reason to believe an eligible respondent was in the household.

With this two-stage sampling approach, 187,000 telephone numbers were dialed, more than 31,000 households were successfully screened, and nearly 3,000 were identified as containing one or more eligible respondents. Inclusion criteria were met by either self-identified sexual orientation (as gay, lesbian, or bisexual) or self-reported same-gender sexual behavior since age 18. A total of 1,950 LGB women and men (a 66% completion rate) were surveyed. Upon completion of data collection, the dataset was weighted to reflect the unequal probabilities of selection within the strata.

California Tobacco Survey study methods

The California Tobacco Survey is a large-scale telephone survey funded by the California Department of Health Services.

Measures

The participants were divided into six groups: those who self-identified as lesbians, gay men, female

bisexuals, male bisexuals, women who have sex with women but who did not self-identified as lesbian or bisexual, and men who have sex with men but who did not self-identified as gay or bisexual. Regular alternative tobacco use (lifetime or current) was defined for persons who reported smoking cigars or using smokeless tobacco.

Data analyses

Prevalence of alternative tobacco use was reported for the probability sample of LGB women and men who completed the LGB survey ($N=1,950$). We compared the rates of standard behavioral indicators of alternative tobacco use between the LGB population and the general population of California using data from the 2002 California Tobacco Survey ($N=20,525$). We defined the general population for analysis as all adult (aged 18+) women and men living in California. All data were weighted. Point estimates and standard errors were calculated separately for the LGB and California Tobacco Survey studies using the appropriate SVY algorithm in STATA so that standard errors were corrected for weighting and sample design of the given study. These calculated values could then be used in tests to compare independent means and proportions.

For each demographic category, within each gender, we performed three separate comparisons. Among the comparisons were lesbians versus California Tobacco Survey women, bisexual women versus California Tobacco Survey women, and women who have sex with women versus California

Tobacco Survey women. Similarly, among men the comparisons were gay men versus California Tobacco Survey men, bisexual men versus California Tobacco Survey men, and men who have sex with men versus California Tobacco Survey men. A Bonferroni adjustment to correct for the increased likelihood of a Type I error given the three comparisons yielded a critical p -value for significance of .0167 (.05/3).

Results

Sample characteristics

Compared with lesbian and bisexual women, California Tobacco Survey female study participants were significantly more likely to be older and Hispanic. Lesbians were more highly educated. Gay and bisexual men were significantly more likely to report being non-Hispanic White compared with California Tobacco Survey men; they also were more likely to have higher incomes.

Comparison of alternative tobacco use between LGB and general population

A significantly higher proportion of women in general reported lifetime regular use of cigars, compared with lesbian and bisexual women (Table 1). No differences in current regular use of either cigars or smokeless tobacco were detected. A significantly higher percentage of men in general reported lifetime and current regular use of both cigars and smokeless tobacco compared with gay men (Table 2). Bisexual men and men who have sex

Table 1. Comparison of alternative tobacco use between LGB women and the general population.

Females	Lesbians ($n=329$)	Bisexuals ($n=290$)	Heterosexual women who have sex with women ($n=383$)	General population ($n=11,037$)
Ever regular use (any)	2.9% (0.9, 8.8)	3.8% (1.3, 10.8)	4.1% (1.6, 9.7)	6.8% (6.2, 7.4)
Cigar	2.8% (0.8, 8.8)	*1.9% (0.6, 6.1)	3.3% (1.2, 9.0)	5.7% (5.1, 6.3)
Smokeless tobacco	1.6% (0.2, 10.2)	0.0	0.0	1.5% (1.2, 1.8)
Current regular use (Any)	1.6% (0.2, 10.3)	*0.6% (0.1, 2.6)	2.0% (0.5, 8.3)	2.4% (2.0, 2.8)
Cigar	1.6% (0.2, 10.3)	0.4% (0.0, 2.9)	2.0% (0.5, 8.3)	1.0% (0.7, 1.2)
Smokeless tobacco	0.0	0.1% (0.0, 1.0)	0.0	0.1% (0.0, 0.1)

Note. Indicates statistically significant findings ($p<.0167$) when testing for independent proportions between LGB subgroups and California Tobacco Survey general population.

Table 2. Comparison of alternative tobacco use between gay and bisexual men and the general population.

Males	Gay ($n=548$)	Bisexual ($n=85$)	Heterosexual men who have sex with men ($n=83$)	General population ($n=9,488$)
Ever regular use (any)	*2.4% (1.2, 4.5)	24.2% (11.5, 44.0)	20.9% (9.7, 39.4)	38.5% (36.9, 40.1)
Cigar	*2.2% (1.1, 4.4)	*13.5% (4.5, 34.4)	17.1% (6.9, 36.5)	33.1% (31.1, 34.5)
Smokeless tobacco	*0.6% (0.2, 1.7)	10.6% (3.5, 28.3)	*5.8% (2.0, 15.5)	16.5% (15.2, 17.7)
Current regular use (any)	*1.2% (0.5, 3.0)	10.3% (3.6, 26.3)	8.3% (1.8, 31.2)	20.3% (18.9, 21.7)
Cigar	*1.2% (0.5, 3.0)	7.1% (2.0, 22.4)	8.3% (1.8, 31.2)	7.1% (6.3, 7.8)
Smokeless tobacco	*0.3% (0.0, 1.9)	3.2% (0.5, 19.8)	*0.0	1.8% (1.4, 2.1)

Note. *Indicates statistically significant findings ($p<.0167$) when testing for independent proportions between LGB subgroups and California Tobacco Survey general population.

with men were significantly less likely to report lifetime use of cigars and smokeless tobacco compared with men in general.

Discussion

We found that, compared with the general population, the LGB population was significantly less likely to have ever regularly used alternative tobacco products (i.e., cigars or smokeless tobacco). These findings are in contrast to our earlier report that rates of current smoking, daily cigarette smoking, and average cigarette consumption are higher for the LGB population compared with women and men in general (Gruskin et al., in press). Not only is this the first published study to report prevalence of cigar and smokeless tobacco use for the LGB population, it is also the first study to find that the LGB population is at *lower* risk when it comes to these alternative tobacco use indicators.

These findings should be interpreted with the following limitations in mind: Some subsegments of the LGB population (e.g., men and women in low-density urban, suburban, and rural areas) were not represented. Because the number of LGB women and men using alternative tobacco products was low, we were unable to conduct analyses that examine important demographic correlates such as age, education, and ethnicity/race within the LGB communities.

We encourage more research to test the generalizability to different LGB populations. Perhaps lower levels of alternative tobacco use in a population that smokes cigarettes at higher rates than the general population may to some extent reflect cultural differences, as well as state and national long-term trends of decreased cigar use (Gilpin & Pierce, 1999) and smokeless tobacco use (Nelson et al., 2006). Surveillance efforts that monitor trends in cigar use and smokeless tobacco use in the LGB population are needed to enable tobacco control prevention and cessation services to be targeted appropriately to this special population. For now, the findings from the present study suggest that the focus of health education and interventions for lesbians, gays, and bisexuals should be on cigarette smoking rather than on cigar or smokeless tobacco use.

Our findings on alternative tobacco use advance what is known (or not) about tobacco use and misuse

in a special population that shoulders a number of well-known physical and mental health problems and that is targeted by the tobacco industry.

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