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Tobacco Use and Sexual Orientation in a National Cross-sectional Study: Age, Race, and Sexual Identity-Attraction Differences

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Abstract

Introduction—The purpose of this study is to determine the past-year prevalence estimates of any nicotine/tobacco use, cigarette smoking, and DSM-5 tobacco use disorder based on sexual identity among U.S. adults, and examine potential variations in these estimates by age, race, and sexual identity–attraction concordance/discordance.

Methods—The 2012–2013 National Epidemiologic Survey on Alcohol and Related Conditions collected data via in-person interviews with a cross-sectional nationally representative sample of non-institutionalized adults (response rate=60.1%) and analyses were conducted in 2017.

Results—Any past-year nicotine/tobacco use, cigarette smoking and DSM-5 tobacco use disorder were most prevalent among sexual minority-identified adults compared with heterosexual-identified adults, with notable variations based on sex, age, race, and sexual identity–attraction discordance. Elevated rates of any nicotine/tobacco use, cigarette smoking, and DSM-5 tobacco use disorder among sexual minorities were most prevalent among younger lesbian women and gay men, and all age groups of bisexual men and women. The odds of any nicotine/tobacco use, cigarette smoking, and DSM-5 tobacco use disorder were significantly greater among sexual

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identity–attraction discordant women and significantly lower among sexual identity–attraction discordant men.

Conclusions—These findings provide valuable new information about sexual minority subgroups, such as self-identified bisexual older adults and sexual identity–attraction discordant women, that appear to be at higher risk for adverse smoking-related health consequences as a result of their elevated rates of cigarette smoking. Additional attention is warranted to examine these high-risk subpopulations prospectively and if the results are replicated with larger samples, this information can be used to target smoking cessation and lung cancer screening efforts.

INTRODUCTION

Despite national progress in reducing tobacco use, which remains the leading preventable cause of death, disparities in smoking are evident in a number of population groups in the U.S. and elsewhere. There is evidence some smoking cessation programs may increase socioeconomic inequalities in smoking.[1] High quality research has unequivocally shown that sexual minorities (i.e., people who identify as lesbian, gay, or bisexual; report same-sex attraction; or engage in same-sex sexual behaviors) are at substantially higher risk for tobacco use than their heterosexual counterparts.[2–10] However, risks vary across sexual minority subgroups. For example, bisexual women are at higher risk of smoking than lesbian women.[11,12] Additionally, there are differences in risk for cigarette smoking and other substance use behaviors based on age, race, and how sexual orientation is defined (i.e., based on attraction, behavior, or identity).[2,3,11–19] These findings emphasize the need to better understand variations in risk within and across sexual orientation dimensions.[20,21]

Findings based on sexual identity often vary from those on sexual attraction or behaviors. For example, one study found that bisexual-identified men were at heightened risk of cigarette smoking, but no such differences were found based on the sex of sexual partners or those to whom the men were attracted.[12] These findings are consistent with other work[14,16,17] that concluded sexual identity should be considered within the context of other sexual orientation dimensions when examining substance use behaviors.

Discordance between domains of sexual orientation (i.e., a mismatch between self-reported sexual identity and sexual attraction or behavior) may play a role in substance use risk.[14,17,22,23] Consistent with prior research and the minority stress model, sexual minority identification may expose an individual to discrimination, tobacco-friendly community norms, and targeted tobacco marketing.[24,25] Alternatively, sexual minorities who conceal their sexual minority identity may limit their exposure to discrimination but experience cognitive dissonance leading to stress and increased risk of substance use.[17,24,26] Although limited, research findings suggest that discordant sexual orientation dimensions increase risk of hazardous drinking and other substance use. This research has focused primarily on sexual minority women; less is known about sexual orientation discordance for sexual minority men or the implications of discordance on health.[14,17,22,23]

Studies that examine the role of sexual orientation discordance and substance use have relied heavily on samples of predominantly heterosexual-identified women, assessed lifetime sexual orientation as opposed to current orientation, combined sexual orientation dimensions

(e.g., sexual attraction and behavior), and often excluded cigarette smoking and high-risk tobacco use, such as DSM-5 tobacco use disorder (TUD). This is problematic given that bisexual men and women appear to have the highest rates of cigarette smoking and TUD.[5,7,27] In addition, past national surveys indicate sexual identity–attraction discordance is more prevalent than sexual identity–behavior discordance.[28,29] More research is needed to understand variations in tobacco use disparities across sexual orientation dimensions, including sexual identity–attraction discordance.

Age and race appear to be important moderators of the associations between sexual orientation and alcohol, tobacco, and other substance use (e.g., white sexual minorities at greater risk for cigarette smoking).[12,15,19,21] However, no nationally representative study has examined tobacco use in relation to age, race, and sexual identity–attraction discordance. Investigations that consider such differences are a next logical step in understanding tobacco use disparities among sexual minorities. Such information can be used to enhance screening, diagnosis, prevention, and treatment efforts.[27] Building on previous research, the authors hypothesize that cigarette smoking, any nicotine/tobacco use (i.e., cigarette smoking, cigars, pipe, chewing tobacco, or e-cigarettes/e-liquid), and DSM-5 TUD are more prevalent among sexual minorities than heterosexual adults. This study also explores variations in cigarette smoking, any nicotine/tobacco use, and DSM-5 TUD by age, race, and sexual identity–attraction concordance/discordance.

METHODS

Study Sample

Data are from the 2012–2013 National Epidemiologic Survey on Alcohol and Related Conditions (NESARC-III), the primary source of information regarding DSM-5 TUD among the general civilian non-institutionalized population of individuals aged ≥18 years in the U.S. The NESARC-III included the National Institute on Alcohol Abuse and Alcoholism Alcohol Use Disorder and Associated Disabilities Interview Schedule-5 (AUDADIS-5), a fully structured diagnostic interview conducted in households. In-person interviews were conducted, and the household, person, and overall response rates were 72%, 84%, and 60.1%, respectively. The NESARC-III sample design, response rates, and weighting procedures have been described in more detail elsewhere.[7,30] All procedures, including informed consent, received full human subjects review and IRB approval. Demographic characteristics of the sample are shown in Appendix Table 1.

Measures

Sociodemographic characteristics included age (18–34 years, 35–54 years, ≥55 years), sex (male, female), race (white, African American, Hispanic, other), educational attainment (high school degree or less, some college, or college degree or higher), metropolitan statistical area (urban, rural), and U.S. Census geographical region (Northeast, South, Midwest, and West).

Sexual identity was assessed by asking: *Which of the categories on the card best describes you? (1) heterosexual (straight), (2) gay or lesbian, (3) bisexual, or (4) not sure?* Sexual

attraction was assessed by asking: *People are different in their sexual attraction to other people. Which category on the card best describes your feelings? (1) only attracted to females, (2) mostly attracted to females, (3) equally attracted to females and males, (4) mostly attracted to males, or (5) only attracted to males.* Sexual identity–attraction corcordance refers to heterosexual-identified adults having sexual attraction to only opposite-sex people, gay/lesbian-identified adults having attraction to people of the same-sex only, and bisexual-identified adults having sexual attraction to both sexes equally or either sex mostly. Sexual identity–attraction discordance refers to any other combination (e.g., heterosexual-identified men having sexual attraction only to males).

Cigarette smoking and other nicotine/tobacco use was assessed by asking respondents whether they had consumed specific tobacco or nicotine products in the past 12 months. Separate questions asked about cigarette smoking, cigars, pipe, chewing tobacco, and e-cigarettes/e-liquid. Any past-year nicotine/tobacco use referred to using at least one of the above-mentioned products. Test–retest reliability of tobacco use variables over an average of 10 months indicate that measures of tobacco use are highly reliable.[31]

DSM-5 TUD was assessed using DSM-5 criteria. Questions are from the AUDADIS-5, which asks about symptoms that can be used to operationalize DSM-5 criteria for TUD for the above-mentioned tobacco products. Consistent with the DSM-5, a 12-month AUDADIS-5 TUD diagnosis is based on the presence of at least two of the 11 DSM-5 criteria (e.g., “find that you had to use much more tobacco or nicotine than you once did to get the effect you wanted” and “continue to use tobacco or nicotine even if was causing you problems with your family or friends”). Reliability and validity of the DSM-based diagnoses of TUD have been established in prior psychometric studies.[32,33]

Statistical Analysis

Analyses were conducted in 2017 in three phases. First, given well documented sex/gender differences in nicotine/tobacco use, the authors compared nicotine/tobacco use in lesbian, bisexual, and heterosexual women and in gay, bisexual, and heterosexual men separately. Significance tests were based on binary logistic regressions using sexual identity to predict the nicotine/tobacco outcome. Second, within each of the three sexual identity subgroups for women and men separately, the rates of nicotine/tobacco use were assessed across age and racial/ethnic groups, and in individuals characterized as being identity–attraction concordant versus discordant. Significance tests were based on binary logistic regressions using age, race, and identity–attraction concordance/discordance to predict the nicotine/tobacco use outcomes within each of the three sexual identity subgroups. Third, multiple logistic regression was used to assess associations between sexual identity and nicotine/tobacco use, and between identity–attraction discordance and nicotine/tobacco use after adjusting for other relevant factors (i.e., age, race/ethnicity, education, geographic region, and urbanicity).

Stata, version 14.0, was used to estimate the models outlined above. The authors controlled for potentially confounding factors and report AORs and 95% CIs. The NESARC-III design included stratification and clustering of the target population. Therefore, all analyses were design-based, using sampling weights to calculate estimates of population parameters and specialized variance estimation techniques to accommodate the complex design features of

the sample when estimating SEs. Unweighted sample sizes are provided to show the actual number of respondents within each subgroup included in the analyses.

RESULTS

As illustrated in Table 1, there were notable sexual identity differences in nicotine/tobacco use, cigarette smoking, and DSM-5 TUD for the total sample. For example, 35.3% of lesbian women and 44.9% of bisexual women reported past-year cigarette smoking compared with 20.2% of heterosexual women ($p<0.05$). Similarly, 35.7% of gay men and 45.2% of bisexual men reported past-year cigarette smoking compared with 26.0% of heterosexual men ($p<0.05$). This study found similar differences in past-year any nicotine/tobacco use behaviors and DSM-5 TUD between heterosexuals and lesbian/gay or bisexual participants ($p<0.05$). The only statistically significant within-group sexual minority difference was in the comparison between gay and bisexual men in relation to any past-year nicotine/tobacco use (37.0% vs 50.0%, $p<0.05$).

Lesbian and heterosexual women aged ≥55 years had lower past-year prevalence rates of nicotine/tobacco use, cigarette smoking, and DSM-5 TUD compared with the youngest age group (18 to 34 years). No age differences were found among bisexual women. Among men, a similar pattern emerged showing that gay and heterosexual men aged ≥55 years had lower past-year prevalence rates of nicotine/tobacco use, cigarette smoking, and DSM-5 TUD compared with their counterparts aged 18 to 34 years. Further, bisexual and heterosexual men aged 35 to 54 years had lower past-year prevalence rates of cigarette smoking compared with men aged 18 to 34 years (this pattern was also found among bisexual men with respect to DSM-5 TUD).

Table 2 summarizes results based on sexual identity and race/ethnicity. Among heterosexual women, prevalence rates of nicotine/tobacco use, cigarette smoking, and DSM-5 TUD were lower among African American and Hispanic women than among white women. No statistically significant racial/ethnic differences were found among lesbian and bisexual women. Among heterosexual men, Hispanic men had lower past-year prevalence rates of nicotine/tobacco use, cigarette smoking, and DSM-5 TUD than white men. Additionally, African American heterosexual men had higher prevalence rates of past-year cigarette smoking than white heterosexual men. No statistically significant racial/ethnic differences in prevalence rates of nicotine/tobacco use behaviors were found among gay and bisexual men.

As shown in Table 3, heterosexual women who were identity–attraction discordant had higher past-year prevalence on all nicotine/tobacco outcomes than those who were identity–attraction concordant. Opposite trends were found based on identity–attraction discordance/concordance among lesbian and bisexual women. That is, identity–attraction discordant women had lower prevalence rates but differences between discordant and concordant groups failed to reach statistical significance. Heterosexual men who were identity–attraction discordant had lower past-year prevalence than those who were identity–attraction concordant on each of the nicotine/tobacco outcome variables. Similar patterns were found based on identity–attraction discordance/concordance among gay and bisexual men, but differences were not statistically significant.

Table 4 shows results of multivariable logistic regression analyses by sexual identity and identity–attraction concordance/discordance after adjusting for other relevant factors. Lesbian and bisexual women had roughly 2 times greater odds of nicotine/tobacco use, cigarette smoking, and DSM-5 TUD compared with heterosexual women. Moreover, women whose sexual identity was inconsistent with their sexual attraction had nearly 1.5 times greater odds on all nicotine/tobacco use outcomes compared with sexual identity–attraction concordant women. Interaction effects between sexual identity X identity–attraction discordance revealed that identity–attraction discordant heterosexual women had greater odds of nicotine/tobacco use outcomes than lesbian and bisexual women who were identity–attraction discordant (notes in Table 4 provide these estimates).

Gay and bisexual men had roughly 2 times greater odds of nicotine/tobacco use, cigarette smoking, and DSM-5 TUD compared with heterosexual men. Men with discordant sexual identity–attraction had lower odds of all nicotine/tobacco use outcomes compared with men who were sexual identity–attraction concordant. Interaction effects between sexual identity X identity–attraction discordance revealed no statistically significant interactions, suggesting that sexual identity–attraction discordance has a similar negative impact on nicotine/tobacco use behaviors in men, regardless of sexual identity.

DISCUSSION

These findings provide new evidence about tobacco use disparities among sexual minorities. Although studies that combine lesbian, gay, and bisexual adults in analyses are helpful for identifying potential health disparities, they do not fully account for possible within-group differences among sexual minoritities. Findings that bisexual men are at higher risk than gay or heterosexual men for past-year nicotine/tobacco use point to higher risk for smoking-related adverse health consequences in this population subgroup. Although past studies have found that women who identify as lesbian are more likely than their heterosexual counterparts to be current cigarette smokers,[34,35] recent national findings suggest that bisexual women appear at greater risk of cigarette smoking and TUD than heterosexual women, lesbian women, and gay men.[5,7,27]

This study found that elevated rates of cigarette smoking, DSM-5 TUD, and other nicotine/tobacco use among sexual minorities were most prevalent among younger adults, and least prevalent among older lesbian women and gay men, but not among older bisexual men and women. A previous study also found smoking disparities among older sexual minority adults residing in Washington; however, bisexual identity was aggregated with gay or lesbian identity.[3] Moreover, no racial/ethnic differences were detected in prevalence rates of tobacco use among sexual minority men in the current study—a finding that differs from at least one non-probability-based study that found decreased risk for current smoking among sexual minorities of color compared to their white counterparts.[19] The small subgroup sample sizes and the cross-sectional research design in the current study prevented a more nuanced examination of subgroup differences (e.g., of older bisexual men and African American bisexual men). Future prospective studies are needed that include larger subgroup samples to more fully examine age and race/ethnicity effects and correlates of tobacco use.

Most studies that have examined substance use behaviors based on concordant and discordant sexual orientation dimensions have been conducted with heterosexually-identified women and have focused on alcohol use.[14,17,22] For example, at least three studies have found that self-identified heterosexual women who reported same-sex sexual behavior were more likely than their concordant counterparts to report alcohol misuse.[14,22,23] By contrast, Gattis and colleagues[23] found that heterosexual men and women who were sexual identity–attraction discordant had lower rates of alcohol use disorder relative to men and women who were sexual identity–attraction concordant. Unfortunately, Gattis and colleagues did not examine the associations between sexual identity–attraction discordance and tobacco use, prohibiting comparisons between their study and the current findings.

The current study suggests that men who are sexual identity–attraction discordant have a significantly lower risk of tobacco use and DSM-5 TUD when compared with men who are sexual identity–attraction concordant. Although it appears that heterosexual males may be driving the negative association between sexual identity discordance, there is some descriptive evidence that this is also occurring with sexual minority males (Table 3). Contrary to the findings for men, sexual identity–attraction discordant women were found to have significantly greater odds of cigarette smoking, any nicotine/tobacco use, and DSM-5 TUD when compared with women who were sexual identity–attraction concordant. Divergent results by gender could stem from gendered differences in exposure to proximal and distal stressors.[36] For instance, identity concealment and other proximal internal stressors could operate differently by gender and discordance could exacerbate internal stressors more in women than men.[26,36] Moreover, same-sex attraction could be more protective for heterosexual men because of the reduced likelihood of distal environmental stressors, such as exposure to tobacco-normative social spaces (e.g., gay bars) and tobacco-smoking social networks of smokers.

Limitations

Despite its strengths this study has some limitations that should be taken into account when evaluating the findings. First, the prevalence of cigarette smoking, sexual minorities, and TUD were likely underestimated in NESARC-III because small but high-risk groups of currently institutionalized individuals, such as incarcerated adults, were not included.[37,38] Second, older adults may have been more likely than younger adults to under-report sexual minority status. Third, given the cross-sectional design of the study, causal inferences were not possible. Longitudinal data and more detailed questions are needed to further examine sexual minority–specific and non–sexual minority-specific risk factors for cigarette smoking, TUD, and other nicotine/tobacco use. Fourth, small samples sizes limited detailed examination of some high-risk subgroups, especially when disaggregating by sociodemographic characteristics, such as age or race/ethnicity. To partially address this issue, additional analyses were conducted comparing combined sexual minority subgroups and heterosexuals. As shown in Appendix Tables 2 and 3, the results were largely the same. Fifth, this study focused on sexual identity–attraction discordance, and did not address sexual identity–behavior discordance; the latter is particularly challenging to assess among bisexual men and women. Additional analyses excluding bisexual men and women indicated that sexual identity–behavior discordance operated similarly as sexual identity–attraction

discordance when each sexual orientation combination was examined separately. However, sexual identity–attraction discordance was a much stronger predictor of all nicotine/tobacco use outcomes than sexual identity–behavior discordance when both were entered into regression models simultaneously (results not shown). Future research is needed to examine the associations between different types of sexual orientation discordance and cigarette smoking, particularly among bisexual men and women.

CONCLUSIONS

Significantly higher rates of cigarette smoking, other nicotine/tobacco use, and DSM-5 TUD were found among sexual minorities, sexual identity–attraction discordant women, and sexual identity–attraction concordant men. Moreover, young and middle adult lesbian women and gay men were at higher risk than their age-matched heterosexual counterparts; by contrast, bisexual men and women of all ages were at higher risk. These findings represent valuable new information that can help identify sexual minority subgroups at higher risk for adverse smoking-related health consequences. Additional research is needed to better understand protective and risk factors associated with tobacco use among these high-risk subgroups. Such information can inform the development of targeted strategies for preventing initiation of tobacco use, achieving cessation, and maintaining a tobacco-free lifestyle.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

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Table 1

Past-year Prevalence of Tobacco Use/Disorder by Age (Years) and Sexual Identity

Variable	Women			Men		
	Lesbian % (SE)	**Bisexual % (SE)**	**Heterosexual % (SE)**	**Gay % (SE)**	**Bisexual % (SE)**	**Heterosexual % (SE)**
Sample size by age						
Total	n=265	n=422	n=19,454	n=321	n=144	n=15,190
18–34	n=131	n=292	n=6,037	n=116	n=59	n=4,962
35–54	n=91	n=100	n=7,030	n=135	n=46	n=5,572
>55	n=43	n=30	n=6,387	n=70	n=39	n=4,656
Any nicotine/tobacco use[a]						
Total	36.7 (0.04)	45.7 (0.03)	20.9 (0.01)	37.0 (0.03)	50.0 (0.05)	32.9 (0.01)
18–34 (ref)[b]	46.9 (0.05)	47.8 (0.04)	25.4 (0.01)	42.4 (0.05)	58.8 (0.08)	38.3 (0.01)
35–54	37.0 (0.06)	41.5 (0.08)	24.1 (0.01)	42.2 (0.05)	39.0 (0.08)	36.1 (0.01)
>55	**13.0 (0.06)*****	37.1 (0.09)	**14.2 (0.01)*****	**20.9 (0.05)***	45.8 (0.10)	**24.3 (0.01)*****
Cigarette smoking						
Total	35.3 (0.04)	44.9 (0.03)	20.2 (0.01)	35.7 (0.03)	45.2 (0.06)	26.0 (0.01)
18–34 (ref)[b]	45.1 (0.05)	47.3 (0.04)	24.6 (0.01)	40.9 (0.05)	53.2 (0.08)	31.7 (0.01)
35–54	35.4 (0.06)	39.5 (0.08)	23.5 (0.01)	41.9 (0.05)	**31.8 (0.07)***	**28.2 (0.01)*****
>55	**13.0 (0.06)****	37.1 (0.09)	**13.3 (0.01)*****	**18.0 (0.05)****	45.8 (0.10)	**18.3 (0.01)*****
DSM-5 tobacco use disorder						
Total	27.3 (0.03)	36.3 (0.03)	16.4 (0.004)	30.0 (0.04)	40.8 (0.06)	23.0 (0.01)
18–34 (ref)[b]	32.6 (0.05)	36.8 (0.04)	19.6 (0.01)	35.9 (0.05)	51.0 (0.08)	27.4 (0.01)
35–54	31.3 (0.06)	36.3 (0.07)	19.4 (0.01)	32.8 (0.05)	**30.7 (0.07)***	25.7 (0.01)
>55	**8.5 (0.05)***	31.1 (0.08)	**10.9 (0.01)*****	**16.8 (0.05)***	32.6 (0.09)	**15.9 (0.01)*****

Note: Boldface indicates statistical significance (*p<0.05; **p<0.01; ***p<0.001).

[a]Any nicotine/tobacco use refers to cigarette smoking, cigars, pipe, chewing tobacco, and e-cigarettes.

[b]All comparisons within different sexual identities are made to the 18–34 years age group as the reference group.

Source: 2012–2013 NESARC-III, household interviews with civilian noninstitutionalized U.S. adults aged 18 years and older.

NESARC, National Epidemiologic Survey on Alcohol and Related Conditions

Table 2

Past-year Prevalence of Tobacco Use/Disorder by Race and Sexual Identity

Variable	Women			Men		
	Lesbian % (SE)	**Bisexual % (SE)**	**Heterosexual % (SE)**	**Gay % (SE)**	**Bisexual % (SE)**	**Heterosexual % (SE)**
Sample sizes						
Total[a]	n=265	n=422	n=19,454	n=321	n=144	n=15,190
White	n=128	n=209	n=10,173	n=205	n=80	n=8,175
African American	n=67	n=127	n=4,333	n=49	n=23	n=3,035
Hispanic	n=60	n=70	n=3,750	n=55	n=31	n=2,959
Any nicotine/tobacco use[b]						
White (ref)[c]	34.6 (0.05)	48.0 (0.04)	23.8 (0.01)	37.1 (0.04)	53.3 (0.06)	34.9 (0.01)
African American	45.0 (0.08)	46.3 (0.05)	**19.4 (0.01)*****	42.9 (0.08)	57.8 (0.15)	35.0 (0.01)
Hispanic	39.1 (0.07)	38.9 (0.07)	**13.3 (0.01)*****	36.3 (0.07)	39.1 (0.10)	**25.3 (0.01)*****
Cigarette smoking						
White (ref)[c]	33.7 (0.05)	47.3 (0.05)	22.9 (0.01)	35.9 (0.04)	49.0 (0.07)	26.1 (0.01)
African American	42.5 (0.08)	45.1 (0.05)	**18.2 (0.01)*****	40.5 (0.08)	45.7 (0.17)	**30.3 (0.01)*****
Hispanic	37.1 (0.07)	38.8 (0.07)	**12.9 (0.01)*****	18.0 (0.07)	37.1 (0.10)	**22.6 (0.01)****
DSM-5 tobacco use disorder						
White (ref)[c]	27.6 (0.05)	38.6 (0.04)	18.9 (0.01)	29.5 (0.04)	44.1 (0.07)	25.0 (0.01)
African American	37.5 (0.09)	36.9 (0.05)	**14.6 (0.01)*****	40.5 (0.08)	56.3 (0.15)	24.8 (0.01)
Hispanic	19.1 (0.05)	30.3 (0.06)	**9.2 (0.01)*****	26.2 (0.06)	28.7 (0.09)	**14.4 (0.01)*****

Notes: Boldface indicates statistical significance (**p<0.01; ***p<0.001).

[a]Other race was excluded in this table due to the number of respondents indicating lesbian and bisexual status being under 10 or below for women and men.

[b]Any nicotine/tobacco use refers to cigarette smoking, cigars, pipe, chewing tobacco, and e-cigarettes.

[c]All comparisons within different sexual identities are made to white respondents.

Source: 2012–2013 NESARC-III, household interviews with civilian noninstitutionalized U.S. adults aged 18 years and older.

NESARC, National Epidemiologic Survey on Alcohol and Related Conditions

Table 3

Past-year Prevalence of Tobacco Use/Disorder by Sexual Identity-attraction Concordance and Discordance

Variable	Women			Men		
	Lesbian % (SE)	**Bisexual % (SE)**	**Heterosexual % (SE)**	**Gay % (SE)**	**Bisexual % (SE)**	**Heterosexual % (SE)**
Sample sizes						
Total	n=264	n=418	n=19,419	n=319	n=144	n=15,180
Identity-attraction concordant	n=165	n=390	n=18,154	n=206	n=132	n=14,474
Identity-attraction discordant	n=99	n=28	n=1,265	n=113	n=12	n=706
Any nicotine/tobacco use[a]						
Identity-attraction concordant (ref)[b]	40.1 (0.04)	47.1 (0.03)	20.4 (0.01)	37.6 (0.04)	50.4 (0.06)	33.2 (0.01)
Identity-attraction discordant	29.8 (0.05)	27.1 (0.09)	**28.3 (0.02)*****	36.5 (0.06)	44.8 (0.17)	**25.7 (0.02)*****
Cigarette smoking						
Identity-attraction concordant (ref)[b]	38.5 (0.04)	46.3 (0.03)	19.7 (0.01)	36.3 (0.04)	45.2 (0.06)	26.2 (0.01)
Identity-attraction discordant	28.7 (0.05)	25.3 (0.09)	**26.4 (0.02)*****	34.9 (0.06)	44.8 (0.17)	**21.4 (0.02)***
DSM-5 tobacco use disorder						
Identity-attraction concordant (ref)[b]	30.8 (0.04)	37.2 (0.03)	16.1 (0.01)	29.4 (0.04)	42.1 (0.06)	23.1 (0.01)
Identity-attraction discordant	20.1 (0.05)	23.5 (0.08)	**21.3 (0.01)*****	31.4 (0.06)	24.7 (0.16)	**18.3 (0.02)****

Notes: Boldface indicates statistical significance (*p<0.05; **p<0.01; ***p<0.001).

[a]Any nicotine/tobacco use refers to cigarette smoking, cigars, pipe, chewing tobacco, and e-cigarettes.

[b]All comparisons within different sexual identities are made to respondents who are concordant on identity-attraction.

Source: 2012–2013 NESARC-III, household interviews with civilian noninstitutionalized U.S. adults aged 18 years and older.

NESARC, National Epidemiologic Survey on Alcohol and Related Conditions

Table 4

Relationship Between Identity-attraction Concordance and Discordance With Past-year Tobacco Use/Disorder

	Women			Men		
Variable	**Any nicotine/tobacco use[a,b] AOR (95% CI) (n=20,101)**	**Cigarette smoking[a] AOR (95% CI) (n=20,087)**	**DSM-5 tobacco use disorder[a] AOR (95% CI) (n=20,101)**	**Any nicotine/tobacco use[a,b] AOR (95% CI) (n=15,639)**	**Cigarette smoking[a] AOR (95% CI) (n=15,632)**	**DSM-5 tobacco use disorder[a] AOR (95% CI) (n=15,643)**
Age, years						
18–34	ref	ref	ref	ref	ref	ref
35–54	0.953 (0.850, 1.06)	0.958 (0.855, 1.07)	1.02 (0.901, 1.15)	0.934 (0.848, 1.02)	**0.895*** (0.814, 0.984)	0.944 (0.847, 1.05)
>55	**0.369***** (0.328, 0.415)	**0.358***** (0.317, 0.405)	**0.386***** (0.335, 0.445)	**0.485***** (0.436, 0.540)	**0.485***** (0.436, 0.539)	**0.462***** (0.404, 0.529)
Race/ethnicity						
White	ref	ref	ref	ref	ref	ref
African American	**0.583***** (0.505, 0.673)	**0.560***** (0.482, 0.650)	**0.563***** (0.478, 0.663)	**0.758***** (0.677, 0.848)	**0.885*** (0.789, 0.993)	**0.745***** (0.649, 0.856)
Hispanic	**0.342***** (0.292, 0.400)	**0.343***** (0.293, 0.401)	**0.308***** (0.260, 0.364)	**0.457***** (0.402, 0.520)	**0.553***** (0.482, 0.635)	**0.349***** (0.298, 0.409)
Other	**0.458***** (0.367, 0.573)	**0.465***** (0.369, 0.585)	**0.512***** (0.403, 0.650)	**0.813*** (0.672, 0.982)	1.03 (0.842, 1.25)	0.812 (0.644, 1.02)
Education						
High school or less	ref	ref	ref	ref	ref	ref
Some college	**0.653***** (0.588, 0.725)	**0.654***** (0.587, 0.728)	**0.656***** (0.587, 0.732)	**0.669***** (0.612, 0.732)	**0.613***** (0.558, 0.673)	**0.647***** (0.583, 0.719)
College or higher	**0.225***** (0.196, 0.259)	**0.224***** (0.193, 0.260)	**0.208***** (0.179, 0.242)	**0.309***** (0.275, 0.348)	**0.244***** (0.212, 0.281)	**0.232***** (0.203, 0.266)
Region						
Northeast	ref	ref	ref	ref	ref	ref
Midwest	1.06 (0.905, 1.25)	1.07 (0.921, 1.26)	0.993 (0.827, 1.19)	**1.38***** (1.18, 1.62)	**1.25*** (1.04, 1.51)	**1.29**** (1.08, 1.53)
South	1.02 (0.878, 1.18)	1.00 (0.861, 1.16)	0.996 (0.840, 1.18)	**1.35***** (1.17, 1.57)	**1.23*** (1.01, 1.49)	**1.22*** (1.03, 1.44)
West	**0.832*** (0.707, 0.979)	**0.825*** (0.703, 0.968)	**0.813*** (0.675, 0.979)	1.03 (0.900, 1.20)	0.995 (0.831, 1.19)	1.03 (0.865, 1.24)
Urbanicity						
Urban	ref	ref	ref	ref	ref	ref
Rural	**1.14*** (1.00, 1.30)	1.11 (0.992, 1.25)	**1.21**** (1.05, 1.39)	1.11 (0.964, 1.28)	0.909 (0.769, 1.07)	1.11 (0.960, 1.29)
Sexual identity[c]						
Heterosexual	ref	ref	ref	ref	ref	ref
Lesbian/Gay	**2.09***** (1.48, 2.95)	**2.09***** (1.48, 2.96)	**1.87***** (1.28, 2.72)	**1.52**** (1.12, 2.06)	**2.03***** (1.50, 2.76)	**1.84***** (1.29, 2.63)
Bisexual	**2.39***** (1.80, 3.17)	**2.41***** (1.81, 3.19)	**2.20***** (1.65, 2.93)	**2.10***** (1.35, 3.26)	**2.40***** (1.48, 3.88)	**2.38***** (1.44, 3.92)

Variable	Women			Men		
	Any nicotine/tobacco use[a,b] AOR (95% CI) (n=20,101)	**Cigarette smoking[a] AOR (95% CI) (n=20,087)**	**DSM-5 tobacco use disorder[a] AOR (95% CI) (n=20,101)**	**Any nicotine/tobacco use[a,b] AOR (95% CI) (n=15,639)**	**Cigarette smoking[a] AOR (95% CI) (n=15,632)**	**DSM-5 tobacco use disorder[a] AOR (95% CI) (n=15,643)**
Identity-attraction[j]						
Concordant	ref	ref	ref	ref	ref	ref
Discordant	**1.51***** (1.29, 1.76)	**1.42***** (1.21, 1.65)	**1.39***** (1.18, 1.63)	**0.737***** (0.621, 0.875)	0.796* (0.660, 0.960)	**0.788*** (0.654, 0.948)

Notes: Boldface indicates statistical significance (*p<0.05; **p<0.01; ***p<0.001).

[a]Each column represents a separate model. Note that these models do not include interaction terms between sexual idenitity and identity-attraction concordance/discordance.

[b]Any nicotine/tobacco use refers to cigarette smoking, cigars, pipe, chewing tobacco, and e-cigarettes.

[c]Seperate models were estimated to assess interaction effects between sexual identity and identity-attraction concordance/discordance. Statistically significant interaction effects between sexual identity and sexual identity-attraction discordance are provided: Any nicotine/tobacco use - Lesbian women X Discordant - AOR=0.480* 95% CI=0.253, 0.911, Bisexual women X Discordant = AOR=0.292* 95% CI=0.103, 0.824; Cigarette smoking - Lesbian women X Discordant - AOR=0.521* 95% CI=0.277, 0.978, Bisexual women X Discordant = AOR=0.293* 95% CI=0.101, 0.852; DSM-5 tobacco use disorder - Lesbian women X Discordant - AOR=0.465* 95% CI=0.239, 0.905.

Source: 2012–013 NESARC-III, household interviews with civilian noninstitutionalized U.S. adults aged 18 years and older.

NESARC, National Epidemiologic Survey on Alcohol and Related Conditions