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## Tobacco Product Use Among Sexual Minority Adults:

### Findings From the 2012–2013 National Adult Tobacco Survey

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### Abstract

**Introduction**—A growing body of evidence reveals higher rates of tobacco use among sexual minority populations relative to non-minority (“straight”) populations. This study seeks to more fully characterize this disparity by examining tobacco use by distinct sexual identities and gender to better understand patterns of: (1) cigarette smoking and smoking history; and (2) use of other tobacco products including cigars, pipes, hookah, e-cigarettes, and smokeless tobacco.

**Methods**—Data from the 2012–2013 National Adult Tobacco Survey, a random-digit dialed landline and cellular telephone survey of U.S. adults aged 18 years, were analyzed in 2014. A sexual minority category was created by combining gay, lesbian, and bisexual responses, along with those who selected an option for other non-heterosexual identities.

**Results**—Smoking prevalence was higher among sexual minority adults (27.4%) than straight adults (17.3%). Cigarette smoking was particularly high among bisexual women (36.0%). Sexual minority women started smoking and transitioned to daily smoking earlier than their straight peers. Use of other tobacco products was higher among sexual minority women: prevalence of e-cigarette (12.4%), hookah (10.3%), and cigar use (7.2%) was more than triple that of their straight female peers (3.4%, 2.5%, and 1.3%, respectively). Likewise, prevalence of sexual minority men’s e-cigarette (7.9%) and hookah (12.8%) use exceeded that of straight men (4.7% and 4.5%, respectively).

**Conclusions**—Tobacco use is significantly higher among sexual minority than straight adults, particularly among sexual minority women. These findings underscore the importance of tobacco control efforts designed to reach sexual minorities and highlight the heterogeneity of tobacco use within this population.

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## Introduction

Evidence suggests that sexual minority populations, including lesbian, gay, and bisexual individuals, and gender minority (e.g., transgender) individuals (collectively, LGBT), experience disproportionate negative health outcomes and exhibit higher rates of health risk behaviors relative to non-minority (non-gender variant heterosexual) individuals.<sup>1,2</sup> Comprehensive data collection on these groups in national surveys has been limited and challenged by a lack of consensus about the most appropriate measures to identify them.<sup>1</sup> The limited availability of comprehensive, systematic data collection has hindered full characterization of such health disparities. Still, a growing body of evidence finds an especially troubling pattern of elevated tobacco use prevalence among sexual minority individuals relative to straight individuals.<sup>2-7</sup>

Evidence from both nationally representative and smaller-scale surveys shows that sexual minority individuals use tobacco at higher rates than straight individuals.<sup>2-12</sup> Most recently, data from the 2012–2013 National Adult Tobacco Survey (NATS) found that 27.7% of LGB adults reported current cigarette use compared with 17.3% of straight adults.<sup>5</sup> Sexual minority smokers are also more likely than their straight peers to smoke menthol cigarettes,<sup>12</sup> and other data suggest this pattern extends beyond cigarettes, showing higher prevalence of cigar, e-cigarette, and hookah use among sexual minorities.<sup>5,9</sup>

Tobacco use takes an immense toll on physical health and remains the primary cause of preventable disease and death in the U.S., making this a critical public health issue. Cigarette smoking alone results in >480,000 premature deaths and \$289 billion in direct healthcare expenditures and productivity losses from premature death each year.<sup>7</sup> With an estimated 2.3 million LGBT people currently using tobacco in the U.S., tobacco use is considered one of the biggest threats to the health of this community.<sup>13</sup>

Explanations for the health disparities evident in this population rely heavily on social factors, such as stigma and discrimination.<sup>14-18</sup> Indeed, a meta-analysis on the etiology of the tobacco disparity highlighted the role of stressors, such as internalized homophobia.<sup>3</sup> These risk factors may be exacerbated by targeted marketing efforts,<sup>19-23</sup> exemplified by Project Subculture Urban Marketing,<sup>24</sup> implemented in the mid-1990s by R.J. Reynolds to target LGB communities and homeless people in San Francisco.<sup>25</sup>

The LGBT population, though often talked about as a collective, comprises an amalgam of distinct groups.<sup>1</sup> Until recently, the extent to which tobacco use patterns might vary among groups within this population has remained largely unexamined: Few studies have parsed the LGB category to assess behavior by distinct sexual identities.<sup>9,26</sup> Furthermore, only recently have data been reported by both sexual identity and gender.<sup>11,27,28</sup> Whereas some data suggest female sexual minorities might be at greater risk of smoking than their male counterparts,<sup>28</sup> other data show similar smoking prevalence for male and female sexual minorities.<sup>11</sup> By contrast, among the general population, the prevalence of tobacco use is consistently greater among men compared with women.<sup>6</sup>

Given the mixed findings from existing data, further research is needed to identify whether and how patterns of use differ among these distinct groups. To date, no study has examined

the use of tobacco products other than cigarettes by both sexual identity and gender. As the tobacco product marketplace becomes increasingly diverse—with the advent and rise of novel products, including e-cigarettes<sup>29</sup>—it is imperative to examine tobacco use across the full spectrum of products.

To address these gaps, the current study uses data from the 2012–2013 NATS to examine prevalence of tobacco use by sexual identity, and to consider sexual identity in the context of gender and other characteristics. In addition to current cigarette smoking, smoking history and use of other tobacco products (cigars, pipes, hookah, e-cigarettes, smokeless tobacco) were examined. Further characterization of tobacco use among sexual minority adults will inform a more accurate description of this disparity, which in turn could enable future tobacco prevention and cessation efforts to target the groups most at risk.

## Methods

The 2012–2013 NATS is a stratified, random-digit dialed telephone survey of non-institutionalized adults aged ≥18 years. The sample comprised 75% landline and 25% cell phone–only house-holds. A total of 60,192 interviews, including 57,994 full interviews and 2,198 partial interviews, were completed from October 2012 to July 2013, yielding an overall response rate of 44.9%. This study was based on analysis of de-identified, secondary data and was exempt from IRB review. A total of 2,026 respondents identified as lesbian/gay, bisexual, or “something else.”

## Measures

The 2012–2013 cycle of NATS included a new measure of sexual identity (replacing the former measure of sexual orientation).<sup>30</sup> Sexual identity is one of three components, along with attraction and behavior, that comprise the construct sexual orientation, and reflects an individual’s personal and social identity based on their attraction and behavior toward men, women, or both sexes.<sup>1</sup> The measure was designed to minimize misclassification and error to yield more accurate identification.<sup>31,32</sup> To assess sexual identity, participants were asked: *Do you identify yourself as...* and provided with the following response options:

1. *gay* (male participants)/*lesbian or gay* (female participants);
2. *straight, that is, not gay*;
3. *bisexual*; or
4. *something else*.

Individuals who selected *something else* were further probed (*By something else, do you mean that...*) and read seven response options. Those who indicated they still meant *something else* (one of the response options) or responded *don’t know/not sure* to the primary question were further probed and respondents provided a response in their own words.<sup>31</sup> In this analysis, sexual minority individuals are defined as those who have a sexual identity that is not exclusively heterosexual.<sup>1</sup> Thus, a sexual minority category was created by combining *gay*, *lesbian or gay*, and *bisexual* responses along with those who selected the first option for the *something else* follow-up question, which denoted a non-heterosexual

identity (You are not straight, but identify with another label such as queer, trisexual, omniseual, or pansexual). Because this measure was designed to ascertain sexual identity, and not gender identity, it does not identify transgender individuals. Consequently, the present analysis focuses on sexual minority individuals only.

Current cigarette smoking was determined using a series of two questions: Have you smoked at least 100 cigarettes in your entire life? and Do you now smoke cigarettes every day, some days, or not at all? Respondents who reported smoking 100 cigarettes in their lifetime and reported now smoking *every day* or *some days* were recoded as current smokers. Age of first cigarette, age of daily smoking, and cigarettes per day were assessed using open-response questions. Daily smoking was defined as those who reported smoking *every day* in response to the current use question or reported smoking *every day* for at least 6 months. Quit attempts were defined based on an affirmative response to the item: During the past 12 months, have you stopped smoking for 24 hours or more because you were trying to quit? Current menthol use was based on the question: Currently, when you smoke cigarettes, how often do you smoke menthol cigarettes...? Response options ranged from 1 (*all of the time*) to 5 (*never*). Those who responded all of the time or most of the time were categorized as menthol users; all others were coded as non-menthol users.

In addition to cigarettes, use of other tobacco products, including cigars, regular pipes, hookah, e-cigarettes, and smokeless tobacco, was assessed. For each product, participants were asked about ever use and current use. Those who met the threshold for lifetime use, which varied by product type (cigars and pipes, at least 50 times; hookah, at least 1 time; e-cigarettes, at least 1 time; and smokeless tobacco, at least 20 times for chew, snuff, or dip and at least 1 time for snus and dissolvables) were asked about frequency of current use.<sup>33</sup> Current use of each product type was assessed with the following item (one item per product): Do you now smoke [cigars, “cigars, cigarillos, or little filtered cigars”]; [e-cigarettes, “electronic cigarettes”]; [hookah, “tobacco in a hookah”]; [regular pipe, “a regular pipe filled with tobacco”]; or [smokeless tobacco, “use chewing tobacco, snuff, dip, snus, and dissolvables”] every day, some days, rarely or not at all? Because use tends to be occasional for certain products, responses of *every day*, *some days*, and *rarely* were coded as current use of the product.<sup>5</sup>

### Statistical Analysis

SAS-callable SUDAAN, version 11.0.1 was used for statistical analyses performed in 2014. Data were weighted to produce nationally representative estimates.<sup>34</sup> Proportion of sample by sexual identity and corresponding 95% CIs for Table 1 were calculated overall and by demographic characteristics, including gender (male and female), age group (18–29, 30–39, 40–49, 50–64, and 65 years), race/ethnicity (non-Hispanic white, non-Hispanic black, non-Hispanic Asian, Hispanic, and non-Hispanic other), annual household income (<\$20,000, \$20,000–\$49,999, \$50,000–\$99,999, \$100,000, and unspecified), education (high school diploma/equivalent or less, some college, and bachelor’s degree or higher) and U.S. Census region (Northeast, Midwest, South, and West). Prevalence estimates of current smoking stratified by gender and sexual identity were calculated by these same demographic characteristics; some categories were further collapsed owing to small sample sizes. Finally,

means and corresponding 95% CIs stratified by gender and sexual identity were calculated for age of first cigarette, age of daily smoking, and cigarettes smoked per day; prevalence estimates and 95% CIs were calculated for frequency of cigarette use, quit attempt in the past 12 months, and current use of menthol cigarettes; and *t*-tests were used to assess whether differences among groups were statistically significant ( $p < 0.05$ ). Prevalence estimates with a relative SE  $\geq 30\%$ , or denominator  $< 50$ , were omitted.

## Results

Of the 60,192 adult respondents, 95.2% provided responses to the sexual identity question. Of these, 2.4% were refusals, 0.4% reported *don't know/not sure*, and 2.7% indicated they did not understand the question; these responses were classified as missing and excluded from the remainder of the analyses. Table 1 presents the sample characteristics by sexual identity and demographic characteristics. Overall, 2.0% of the sample identified as lesbian/gay, 1.7% identified as bisexual, 95.8% identified as straight, and 0.6% reported *something else*.

Overall, current cigarette smoking was higher among sexual minorities (27.4%) than straight individuals (17.3%) ( $p < 0.001$ ). Among men, the prevalence of cigarette smoking was 27.0% for those who identified as gay and 25.9% for those who identified as bisexual, compared with 21.3% for those who identified as straight (Table 2).

Among women, prevalence of current cigarette smoking was 22.2% for those who identified as lesbian or gay, 36.0% for those who identified as bisexual, and 14.3% for women who identified as straight. Bisexual women reported higher prevalence of smoking than both their lesbian/gay and straight female counterparts. Small sample sizes and suppressed estimates limit comparison of patterns across most demographic characteristics for men and women.

Among men, sexual minority and straight men reported similar behaviors in terms of age of first cigarette, age of transitioning to daily use, prevalence of daily use, number of cigarettes per day, and prevalence of menthol cigarette use (Table 3). Although not statistically significant, fewer sexual minority male smokers reported a past-year quit attempt (45.2%) than did straight men (54.8%).

Among women, sexual minority female smokers reported smoking their first cigarette at an earlier age (mean=14.8 years) than straight female smokers (mean=16.0 years). Likewise, sexual minority women reported transitioning to daily smoking 1 year earlier than straight women (17.6 versus 18.6 years). The two groups reported similar prevalence of daily use and past-year quit attempts. However, more sexual minority female smokers reported menthol use (45.1%) compared with their straight female counterparts (34.4%).

Among men, prevalence of cigar and regular pipe use were similar between sexual minority and straight individuals (Table 4). However, prevalence of e-cigarette use was higher among sexual minority men (7.9%) compared with straight men (4.7%). Likewise, sexual minority men were more likely to report hookah use (12.8%) than straight men (4.5%). By contrast, prevalence of smokeless tobacco use was higher among straight men (7.4%) than sexual minority men (3.8%).

Few straight women reported use of cigars (1.3%), e-cigarettes (3.4%), and hookah (2.5%). However, among sexual minority women, prevalence was more than three times higher for e-cigarettes (12.4%), and four and five times higher for hookah (10.3%) and cigar use (7.2%), respectively.

## Discussion

The current findings confirm tobacco use disparities among sexual minority adults, showing that tobacco use prevalence is significantly higher among members of these groups compared with straight adults. In addition, by examining distinct identities within the sexual minority category, some interesting patterns emerged that have heretofore been masked by the use of broader categories. These findings underscore the importance of tobacco control efforts that successfully reach sexual minorities and highlight the heterogeneity within this population.

In terms of cigarette smoking, bisexual women exhibited the highest smoking prevalence compared with most other groups—more than 2.5 times higher than their straight female counterparts. Moreover, results revealed that sexual minority women smoked earlier, progressed to daily smoking sooner, and were more likely to smoke menthol cigarettes, compared with their straight peers. Notably, nearly half (45%) of sexual minority women smokers reported they currently smoked menthol cigarettes. These patterns are consistent with previous research,<sup>28</sup> including an analysis of data from the 2009–2010 NATS, which also reported higher nicotine dependence among bisexual women compared with straight women.<sup>27</sup> By contrast, sexual minority men were far more similar to their straight male peers on smoking behavior outcomes. Finally, use of other tobacco products—including, hookah, and e-cigarettes—echoed the patterns of smoking: Sexual minority adults used these products at higher rates than their straight counterparts. Indeed, for sexual minority women, their use of cigars, hookah, and e-cigarettes was more than triple the rate among straight women.

In sum, these findings reveal that the tobacco use disparity among sexual minorities is particularly pronounced among the women of this group. This is consistent with evidence showing sexual minority women also report high rates of behavioral correlates of tobacco use including alcohol and other drug use.<sup>35–37</sup> Although more information is needed to fully understand these disparities, theory and evidence highlight the role of social and structural factors.<sup>3,14,15</sup> Despite a common identification with the larger category of “LGBT,” the social context experienced by subgroups within this population can vary widely.<sup>1</sup> Indeed, evidence suggests that bisexual women—who comprise the majority of this group of women—may face unique challenges related to their identity<sup>38,39</sup> and may be particularly vulnerable to negative outcomes.<sup>2,40–43</sup> Similarly, it is also important to consider sexual identity in the context of racial/ethnic identity to account for the consequences of bearing multiple stigmatized identities.<sup>17,44,45</sup> The challenge for future research is to identify the risk and protective factors<sup>18,46,47</sup> that can most effectively be addressed through intervention.

Taken together, the evidence of elevated prevalence of tobacco use among sexual minority adults highlights the importance of targeted public health interventions, such as high-impact public education campaigns, like CDC's existing Tips campaign<sup>48</sup> and the U.S. Food and Drug Administration's public education efforts. Although there have been few campaigns designed specifically to reach sexual minorities to date,<sup>49</sup> such efforts have been proven to increase intention to quit, increase quit attempts, and reduce risk of initiation among a number of subpopulations.<sup>50</sup> These findings can help prioritize the focus of future efforts by identifying the groups most at risk (e.g., sexual minority women), and the specific tobacco use behaviors to address.

## Limitations

Although these data enhance our understanding of tobacco use among sexual minorities, this study is subject to several limitations. First, the data are not inclusive of the entire LGBT population. The employed measure only assessed sexual identity and was not designed to identify transgender individuals.<sup>51</sup> To date, the inclusion of gender identity measures on national surveys has been very limited.<sup>52</sup> This gap is of concern because evidence suggests this segment of the LGBT community may face the most significant barriers and social stigma.<sup>53</sup> However, recent progress includes:

1. emerging recommendations for measurement approaches for identifying transgender individuals<sup>54</sup>; and
2. inclusion of gender identity on forthcoming waves of data collection for U.S. Food and Drug Administration's Population Assessment of Tobacco and Health Study.<sup>55</sup>

Second, the prevalence of sexual minorities in this sample, though comparable to previous NATS implementations,<sup>8</sup> and higher than National Health Interview Survey 2013, was still lower than might be expected based on more comprehensive demographic surveys.<sup>56</sup> The National Health Interview Survey 2013 implementation of this measure yielded lower than expected rates of identification,<sup>30</sup> causing concern in the public health and advocacy arenas regarding this measure.<sup>57,58</sup> Although it is difficult to fully account for such variability in estimates, it is possible that measurement characteristics and features of survey administration may be contributing factors.

Third, small sample sizes limited the ability to examine patterns of use by certain demographic characteristics, including race/ethnicity. Research suggests that tobacco use might vary by race/ethnicity within the LGBT community, and thus is something that should be examined further.<sup>59,60</sup> Moreover, owing to the small sample size, many estimates had wide CIs, so results should be interpreted with appropriate caution. Together, these limitations emphasize the need for continued efforts to identify LGBT populations in large-scale data collection efforts, and to increase efforts to power subgroup comparisons. At the same time, the limitations inherent to studying sexual minority populations in general population surveys reinforce the value of complementing these efforts with studies focused on the target population.

## Conclusions

The current findings confirm existing evidence regarding tobacco use disparities among sexual minority adults and extend our understanding of this disparity in several important ways. Examination of distinct groups revealed that this disparity is particularly evident among sexual minority women in terms of both cigarette smoking and use of other tobacco products. These findings support the call to action to continue to monitor and address these disparities, highlight the need to appreciate the heterogeneity within the sexual minority population, and offer a reminder of the importance of considering tobacco products beyond conventional cigarettes. Finally, these findings reaffirm the importance of comprehensive data collection that can accurately identify and characterize this population.

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**Table 1**

Sample Characteristics by Sexual Identity—National Adult Tobacco Survey, U.S., 2012–2013

Characteristics	% (95% CI)			
	Lesbian/gay	Bisexual	Heterosexual/straight	Something else
Overall	2.0 (1.8, 2.2)	1.7 (1.5, 1.8)	95.8 (95.5, 96.0)	0.6 (0.5, 0.7)
Sex				
Male	2.7 (2.4, 3.0)	1.1 (1.0, 1.3)	95.6 (95.2, 95.9)	0.6 (0.5, 0.8)
Female	1.3 (1.1, 1.5)	2.2 (1.9, 2.4)	96.0 (95.6, 96.3)	0.5 (0.4, 0.7)
Age group (years)				
18–29	2.4 (2.0, 2.9)	3.4 (2.8, 4.0)	92.9 (90.5, 92.3)	1.3 (1.0, 1.8)
30–39	2.2 (1.8, 2.8)	2.0 (1.6, 2.5)	95.4 (94.6, 96.0)	0.3 (0.2, 0.6)
40–49	2.3 (1.9, 2.8)	1.3 (1.0, 1.6)	96.1 (95.5, 96.6)	0.3 (0.2, 0.5)
50–64	2.0 (1.7, 2.2)	1.0 (0.8, 1.2)	96.6 (96.3, 96.9)	0.4 (0.3, 0.6)
65+	0.9 (0.8, 1.1)	0.7 (0.6, 0.9)	98.0 (97.8, 98.3)	0.3 (0.2, 0.4)
Race/ethnicity				
White, non-Hispanic	2.0 (1.8, 2.2)	1.5 (1.3, 1.7)	96.0 (95.7, 96.3)	0.5 (0.4, 0.7)
Black, non-Hispanic	1.8 (1.3, 2.5)	1.3 (0.9, 1.9)	96.3 (95.4, 97.0)	0.6 (0.3, 1.0)
Asian, non-Hispanic	2.9 (1.7, 5.0)	– <sup>b</sup>	94.2 (91.8, 95.9)	– <sup>b</sup>
Hispanic	1.6 (1.2, 2.1)	2.1 (1.4, 2.5)	95.8 (94.9, 96.5)	– <sup>b</sup>
Other, non-Hispanic	2.2 (1.6, 3.0)	3.1 (2.4, 4.1)	93.8 (92.5, 94.8)	0.9 (0.6, 1.4)
Annual household income (\$)				
<20,000	2.2 (1.6, 2.9)	2.4 (1.8, 3.1)	94.5 (93.5, 95.4)	0.9 (0.6, 1.3)
20,000–49,999	1.7 (1.5, 2.1)	1.9 (1.6, 2.2)	95.9 (95.4, 96.3)	0.5 (0.4, 0.7)
50,000–99,999	2.0 (1.7, 2.4)	1.5 (1.2, 1.8)	96.2 (95.7, 96.6)	0.3 (0.2, 0.5)
100,000	2.7 (2.3, 3.2)	1.1 (0.9, 1.4)	95.6 (95.1, 96.1)	0.5 (0.3, 0.8)
Unspecified	1.2 (0.9, 1.6)	1.8 (1.3, 2.4)	96.0 (95.2, 96.7)	1.0 (0.6, 1.4)
Education				
High school diploma/equivalent or less	1.4 (1.1, 1.7)	1.6 (1.3, 1.9)	96.5 (96.0, 96.9)	0.6 (0.4, 0.8)
Some college	2.0 (1.7, 2.4)	2.0 (1.7, 2.4)	95.3 (94.8, 95.8)	0.6 (0.5, 0.8)
Bachelor's degree or higher	2.8 (2.5, 3.1)	1.3 (1.2, 1.5)	95.5 (95.1, 95.8)	0.5 (0.3, 0.6)
U.S. Census region <sup>a</sup>				
Northeast	2.1 (1.8, 2.6)	1.7 (1.4, 2.2)	95.3 (94.6, 95.9)	0.8 (0.6, 1.2)
Midwest	1.5 (1.3, 1.9)	1.7 (1.4, 2.1)	96.1 (95.6, 96.6)	0.6 (0.4, 0.9)
South	1.9 (1.7, 2.3)	1.4 (1.1, 1.6)	96.3 (95.8, 96.6)	0.4 (0.3, 0.6)
West	2.3 (2.0, 2.7)	2.1 (1.7, 2.5)	95.1 (94.6, 95.6)	0.5 (0.4, 0.7)

<sup>a</sup>Northeast: Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, and Vermont. Midwest: Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, and Wisconsin. South: Alabama, Arkansas, Delaware, District of Columbia, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, and West Virginia. West: Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming.

<sup>b</sup> Estimate was omitted; the relative SE was >30% or denominator <50.

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**Table 2**

Prevalence of Current Cigarette Smoking<sup>a</sup> Stratified by Gender, Sexual Identity, and Demographic Characteristics—National Adult Tobacco Survey, U.S., 2012–2013

Characteristics	Prevalence of current cigarette smoking, % (95% CI)					
	Male			Female		
	Gay	Bisexual	Heterosexual/ straight	Lesbian/gay	Bisexual	Heterosexual/ straight
Overall	<b>26.1 (21.3, 31.5)*</b>	20.7 (14.9, 28.0)	<b>20.5 (19.7, 21.3)</b>	<b>22.2 (16.8, 28.8)*</b>	<b>36.0 (30.2, 42.3)**</b>	<b>14.3 (13.7, 14.9)</b>
Age group (years)						
18–29	30.9 (20.9, 43.0)	<i>_b</i>	23.5 (21.6, 25.5)	25.7 (14.0, 42.2)	<b>39.3 (30.2, 49.2)**</b>	<b>14.8 (13.2, 16.7)</b>
30–44	26.3 (17.2, 38.2)	36.8 (22.1, 54.4)	24.9 (23.6, 26.8)	24.0 (13.9, 38.1)	<b>44.5 (33.4, 56.1)**</b>	<b>16.6 (15.2, 18.1)</b>
45–64	25.7 (19.0, 33.8)	20.9 (12.5, 32.9)	20.5 (19.3, 21.7)	20.7 (13.5, 30.4)	24.7 (15.9, 36.2)	16.8 (15.9, 17.8)
65+	<i>_b</i>	<i>_b</i>	9.4 (8.5, 10.4)	<i>_b</i>	<i>_b</i>	6.5 (5.9, 7.2)
Race/ethnicity						
White, non-Hispanic	24.4 (19.0, 30.8)	20.4 (13.0, 30.5)	19.2 (18.4, 20.2)	<b>25.6 (18.7, 33.9)*</b>	<b>37.2 (30.1, 45.0)**</b>	<b>14.6 (13.9, 15.4)</b>
Black, non-Hispanic	<i>_b</i>	<i>_b</i>	25.1 (22.4, 28.2)	<i>_b</i>	<i>_b</i>	14.9 (13.0, 17.2)
Hispanic	<b>38.1 (23.4, 55.4)*</b>	<i>_b</i>	<b>20.0 (17.6, 22.5)</b>	<i>_b</i>	<i>_b</i>	9.3 (7.8, 11.0)
Other, non-Hispanic	<i>_b</i>	<i>_b</i>	25.0 (22.4, 27.8)	<i>_b</i>	<b>52.7 (36.9, 68.0)**</b>	<b>18.1 (15.9, 20.5)</b>
Annual household income (\$)						
<20,000	38.2 (23.2, 55.7)	<i>_b</i>	32.8 (29.7, 36.0)	<i>_b</i>	<b>43.0 (28.8, 58.3)**</b>	<b>23.4 (21.3, 25.6)</b>
20,000–49,999	30.8 (21.0, 42.7)	25.6 (15.7, 38.9)	27.1 (25.4, 28.8)	20.4 (12.5, 31.6)	<b>33.9 (24.5, 44.7)**</b>	<b>19.0 (17.7, 20.4)</b>
50,000–99,999	24.7 (16.8, 34.9)	<i>_b</i>	18.9 (17.5, 20.4)	22.5 (12.3, 37.6)	<b>37.8 (26.3, 50.8)**</b>	<b>12.0 (11.0, 13.1)</b>
100,000	18.3 (11.0, 29.0)	<i>_b</i>	10.3 (9.2, 11.6)	<i>_b</i>	<i>_b</i>	6.9 (6.0, 8.1)
Unspecified	<i>_b</i>	<i>_b</i>	18.6 (16.6, 20.9)	<i>_b</i>	<b>37.0 (23.1, 53.5)**</b>	<b>10.6 (9.3, 12.1)</b>
Education						
High school diploma/equivalent or less	36.6 (25.8, 48.9)	<i>_b</i>	27.8 (26.4, 29.4)	30.2 (17.8, 46.4)	<b>39.7 (29.8, 50.4)**</b>	<b>19.1 (17.9, 20.4)</b>
Some college	<b>31.8 (23.1, 42.0)*</b>	23.1 (13.5, 36.7)	<b>21.7 (20.4, 23.1)</b>	<b>27.7 (17.8, 40.5)*</b>	<b>41.6 (32.1, 51.7)**</b>	<b>16.0 (15.0, 17.0)</b>
Bachelor's degree or higher	<b>13.3 (9.2, 18.9)*</b>	<b>16.3 (9.6, 26.2)**</b>	<b>7.6 (7.0, 8.4)</b>	<b>12.8 (8.0, 19.8)*</b>	<b>12.5 (7.4, 20.4)**</b>	<b>5.4 (4.9, 6.0)</b>
U.S. Census region <sup>c</sup>						
Northeast	19.5 (12.2, 29.8)	<i>_b</i>	18.9 (17.1, 21.0)	<i>_b</i>	<b>29.0 (18.2, 42.9)**</b>	<b>13.8 (12.4, 15.3)</b>
Midwest	29.3 (17.8, 44.3)	<i>_b</i>	21.7 (20.1, 23.5)	<b>32.0 (19.2, 48.2)*</b>	<b>42.9 (29.7, 57.2)**</b>	<b>16.1 (14.8, 17.5)</b>
South	30.1 (21.9, 39.9)	29.9 (17.4, 46.4)	22.4 (21.2, 23.8)	21.6 (12.7, 34.3)	<b>35.7 (25.9, 46.9)**</b>	<b>15.3 (14.3, 16.4)</b>
West	23.3 (15.3, 33.9)	17.5 (9.8, 29.3)	17.3 (15.9, 18.8)	17.3 (10.0, 28.2)	<b>35.3 (25.4, 46.5)**</b>	<b>11.4 (10.3, 12.5)</b>

*Note:* Boldface indicates statistical significance

\* statistically significant difference between lesbian/gay estimate and heterosexual/straight estimate within gender [ $p < 0.05$ ];

\*\* statistically significant difference between bisexual estimate and heterosexual/straight estimate within gender [ $p < 0.05$ ].

<sup>a</sup> Respondents who reported smoking 100 cigarettes in their lifetime and reported now smoking every day or some days were recoded as current cigarette smokers.

<sup>b</sup> Estimate was omitted; the relative SE was >30% or denominator <50.

<sup>c</sup> Northeast: Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, and Vermont. Midwest: Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, and Wisconsin. South: Alabama, Arkansas, Delaware, District of Columbia, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, and West Virginia. West: Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming.

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**Table 3**

Smoking Behaviors Among Current Cigarette Smokers<sup>a</sup> by Gender and Sexual Identity—National Adult Tobacco Survey, U.S., 2012–2013

	Mean or % (95% CI)			
	Male		Female	
	Sexual minority <sup>b</sup>	Heterosexual/straight	Sexual minority <sup>b</sup>	Heterosexual/straight
Age at first cigarette	15.6 (14.7, 16.4)	15.3 (15.1, 15.5)	<b>14.8 (14.0, 15.5)</b>	<b>16.0 (15.8, 16.2)</b>
Age at first cigarette, daily	18.0 (17.1, 18.8)	17.9 (17.7, 18.1)	<b>17.6 (16.8, 18.5)</b>	<b>18.6 (18.3, 18.8)</b>
Number of cigarettes smoked per day	13.5 (11.3, 15.7)	13.8 (13.3, 14.3)	11.5 (9.5, 13.5)	11.7 (11.2, 12.1)
Frequency of use				
Every day	76.5 (67.8, 83.4)	73.5 (71.5, 75.4)	74.1 (65.6, 81.1)	76.2 (74.1, 78.2)
Some days	23.5 (16.6, 32.2)	26.5 (24.6, 28.5)	25.9 (18.9, 34.4)	23.8 (21.8, 25.9)
Attempt to quit in past 12 months				
Yes	45.2 (35.7, 54.9)	54.8 (52.6, 57.0)	54.9 (46.2, 63.3)	53.5 (51.2, 55.9)
No	54.8 (45.1, 64.3)	45.2 (43.0, 47.4)	45.1 (36.7, 53.8)	46.5 (44.1, 48.8)
Currently smoke menthol cigarettes <sup>c</sup>				
Yes	32.5 (23.8, 42.7)	27.9 (25.8, 30.0)	<b>45.1 (36.6, 53.9)</b>	<b>34.4 (32.2, 36.7)</b>
No	67.5 (57.3, 76.2)	72.1 (70.0, 74.2)	<b>54.9 (46.1, 63.4)</b>	<b>65.6 (63.3, 67.8)</b>

Note: Boldface indicates statistically significant difference between sexual minority estimate and heterosexual/straight estimate within gender ( $p < 0.05$ ).

<sup>a</sup> Respondents who reported smoking 100 cigarettes in their lifetime and reported now smoking every day or some days were recoded as current cigarette smokers.

<sup>b</sup> Responses of “gay,” “lesbian or gay,” “bisexual,” and “something else: you are not straight, but identify with another label such as queer, trisexual, omnisexual or pansexual” were recoded into a sexual minority category.

<sup>c</sup> Respondents who reported smoking menthol cigarettes “all of the time” or “most of the time” were recoded as “yes.” Respondents who reported smoking menthol cigarettes “some of the time,” “rarely,” or “none of the time” were recoded as “no.”

**Table 4**

Prevalence of Use of Other Tobacco Products by Gender and Sexual Identity—National Adult Tobacco Survey, U.S., 2012–2013

	% (95% CI)			
	Male		Female	
	Sexual minority <sup>a</sup>	Heterosexual/straight	Sexual minority <sup>a</sup>	Heterosexual/straight
Cigars <sup>b</sup>	8.8 (6.3, 12.3)	10.3 (9.7, 10.9)	<b>7.2 (5.0, 10.3)</b>	<b>1.3 (1.1, 1.5)</b>
Regular pipe <sup>c</sup>	– <sup>d</sup>	2.2 (2.0, 2.5)	– <sup>d</sup>	0.1 (0.1, 0.2)
Hookah <sup>e</sup>	<b>12.8 (9.7, 16.6)</b>	<b>4.5 (4.1, 5.0)</b>	<b>10.3 (7.6, 13.8)</b>	<b>2.5 (2.2, 2.9)</b>
Electronic cigarettes <sup>f</sup>	<b>7.9 (5.5, 11.4)</b>	<b>4.7 (4.3, 5.2)</b>	<b>12.4 (9.6, 15.9)</b>	<b>3.4 (3.1, 3.7)</b>
Smokeless tobacco <sup>g</sup>	<b>3.8 (2.4, 6.0)</b>	<b>7.4 (6.9, 7.9)</b>	– <sup>d</sup>	0.4 (0.3, 0.5)

Note: Boldface indicates statistically significant difference between sexual minority estimate and heterosexual/straight estimate within gender ( $p < 0.05$ ).

<sup>a</sup> Responses of “gay,” “lesbian or gay,” “bisexual” and “something else: you are not straight, but identify with another label such as queer, trisexual, omnisexual or pansexual” were recoded into a sexual minority category.

<sup>b</sup> Respondents who reported smoking 50 cigars, cigarillos, or filtered little cigars in their lifetime and reported now smoking “every day,” “some days” or “rarely” were recoded as current cigar smokers.

<sup>c</sup> Respondents who reported smoking a regular pipe filled with tobacco 50 times in their lifetime and reported now smoking “every day,” “some days” or “rarely” were recoded as current regular pipe smokers.

<sup>d</sup> Estimate was omitted; the relative standard error was >30% or denominator <50.

<sup>e</sup> Respondents who reported smoking tobacco in a hookah 1 time in their lifetime and reported now smoking it “every day,” “some days” or “rarely” were recoded as current hookah smokers.

<sup>f</sup> Respondents who reported smoking electronic cigarettes 1 time in their lifetime and reported now smoking it “every day,” “some days” or “rarely” were recoded as current electronic cigarette smokers.

<sup>g</sup> Smokeless tobacco users were defined using three product types: (1) chewing tobacco, snuff, or dip; (2) snus; and (3) dissolvable tobacco products. Respondents who reported use of chewing tobacco, snuff, or dip 20 times in their lifetime and reported now using it “every day,” “some days,” or “rarely” were recoded as current smokeless tobacco users. Respondents who reported use of snus or dissolvable tobacco products 1 time in their lifetime and reported now using it “every day,” “some days” or “rarely” were recoded as current smokeless tobacco users.