American Journal of Men's Health
May-June 2019: 1–6

DOI: 10.1177/1557988319847833
journals.sagepub.com/home/jmh
SAGE

Demographic, Behavioral, and Social Characteristics Associated With Smoking and Vaping Among Men Who Have Sex With Men in San Francisco

Glenn-Milo Santos, PhD, MPH[1,2], Judy Tan, PhD, MA[3], Caitlin Turner, MPH[2], and H. Fisher Raymond, DrPH, MPH[4]

Abstract

Tobacco use is the leading lifestyle-related cause of death in the United States. We analyzed correlates of smoking and vaping tobacco in the National HIV Behavioral Surveillance (NHBS) among men who have sex with men (MSM) in San Francisco in 2014 ($n = 410$) using multivariable logistic regression models. We found that more than two in five MSM (41%) smoked or vaped. Smoking was greater for men of color (46% vs. 35%; $p = .02$); those with annual income below $50,000 (47% vs. 34%; $p = .01$); those without a college education (51% vs. 30%; $p < .01$); and the uninsured (55% vs. 38%; $p = .04$). In multivariable analyses, greater odds of smoking were observed among men living with HIV (adjusted odds ratio [aOR] = 1.7; 95% CI [1.00, 2.8]); men who reported cocaine use (aOR = 3.1; 95% CI [1.9, 5.0]), and men who reported greater number of alcohol drinks on a drinking day (aOR = 1.2; 95% CI [1.05, 1.29]). Lower odds of smoking were observed for men who completed college (aOR = 0.57; 95% CI [0.36, 0.88]). Greater odds of vaping were observed among men who reported meth use (aOR = 3.01; 95% CI [1.65, 5.50]). Lower odds of vaping were observed among men who completed college (aOR = 0.55; 95% CI [0.32, 0.98]). In conclusion, the prevalence of smoking and vaping among MSM is extremely high, particularly HIV-positive MSM. MSM who smoked and vaped were more likely to be racial and ethnic minorities, have lower socioeconomic status, and report more substance and alcohol use. These findings highlight the need to develop strategies effectively addressing the high rates of cigarette smoking and vaping among MSM, particularly among minority MSM and MSM living with HIV.

Keywords

tobacco use, behavioral issues, gay health issues, gender issues, sexual orientation, epidemiology of men's health, general health, wellness, drug use behavioral issues, alcohol use, behavioral issues

Received January 14, 2019; revised March 12, 2019; accepted March 29, 2019

Tobacco use, particularly cigarette smoking, is related to numerous public health problems and is the leading lifestyle-related cause of death in the United States (Danaei et al., 2009). HIV-positive individuals who smoke experience higher morbidity and mortality compared to HIV-positive nonsmokers (Helleberg et al., 2015). Smoking is significantly associated with a greater risk for cardiovascular disease and non-AIDS malignancies, including non-AIDS-related cancers (Rasmussen et al., 2015). Among HIV-positive people on antiretroviral therapy (ART), HIV-positive smokers have a twofold increase in mortality, compared to HIV-positive nonsmokers (Helleberg et al., 2015).

[1]Department of Community Health Systems, School of Nursing, University of California San Francisco, CA, USA
[2]Center for Public Health Research, San Francisco Department of Public Health, CA, USA
[3]Center for AIDS Prevention Studies (CAPS), Division of Prevention Science, University of California San Francisco, CA, USA
[4]Department of Biostatistics and Epidemiology, School of Public Health, Rutgers University, Piscataway, NJ, USA

Corresponding Author:
H. Fisher Raymond, DrPH, MPH, Department of Biostatistics and Epidemiology, School of Public Health, Rutgers University, 683 Hoes Lane West, Room 129, Piscataway, NJ 08854, USA.
Email: Hfisher.raymond@rutgers.edu

Compared to the general population, rates of tobacco use, primarily smoking cigarettes, are higher among men who have sex with men (MSM), who comprise the majority of new HIV infections in the United States. Recent data from the National Health Interview Survey indicated that the current prevalence of smoking was 27.2% among MSM and 22.3% among heterosexual men (Agaku, King, Dube, Centers for Disease Control and Prevention [CDC], 2014). In the Multicenter AIDS Cohort Study of MSM from Los Angeles, Chicago, Pittsburg, and Washington, DC, 11% of the participants were classified as persistent light smokers, while 23.1% were classified as persistent heavy smokers (Akhtar-Khaleel et al., 2016). In the California Health Interview Survey, smoking was statistically significantly higher for MSM (21% for gay men, 29% for bisexual men), compared to heterosexual men (19%; Max, Stark, Sung, & Offen, 2016). In the same study, gay smokers were also more likely to be daily smokers than heterosexual smokers (Max et al., 2016).

Electronic cigarettes for tobacco use (i.e., "vaping") have been commercially available for over a decade and are increasingly popular, including among MSM; yet few studies have evaluated the prevalence and correlates of cigarette smoking and vaping in this population. A national online survey of 17,522 U.S. adults in 2013 reported that the lifetime prevalence of e-cigarettes is 15%; prevalence of current use (within the past 30 days) was 5% (Huang, Kim, Vera, & Emery, 2016). While there is a paucity of data available on smoking prevalence among MSM, no surveillance data exist on vaping among MSM, thereby limiting research directions.

In the San Francisco Bay Area, comprehensive tobacco control policies have helped reduce smoking prevalence among the general population—indeed, the three major cities in this region (San Francisco, Oakland, and San Jose) have the second highest grade possible for their tobacco control policies (American Lung Association, 2018). Nevertheless, few studies have evaluated the prevalence of smoking and vaping among MSM in this region (Greenwood et al., 2005; Max et al., 2016; Tang et al., 2004). Pooled data from two studies in San Francisco reported that sexual orientation and gender identity (SOGI) minorities, including MSM, are able to abstain from smoking at the same rates as non-SOGI smokers after receiving nicotine replacement therapy and extended treatment (Grady et al., 2014). Because available data suggest that MSM have high prevalence of smoking and yet have similar success rates as the general population when provided treatment, studies that aim to identify MSM smokers and vapers who may benefit from interventions are greatly needed.

To address these gaps in the literature, the prevalence of cigarette smoking and vaping was assessed in the local San Francisco MSM National HIV Behavioral Surveillance (NHBS) survey, a national behavioral surveillance study among persons at high risk for HIV infection or transmission (MacKellar et al., 2007). The present study describes the prevalence of smoking and vaping among MSM and examines the demographic, behavioral, and social characteristics associated with these behaviors from the NHBS.

Methods

Study Design

Data from MSM in this study were obtained during implementation of NHBS in San Francisco in 2014. NHBS is a CDC-led collaboration of 20 health jurisdictions in the United States, which samples MSM, injection drug users (IDUs), and high-risk heterosexuals on a 3-year cycle (Gallagher, Sullivan, Lansky, & Onorato, 2007). NHBS utilizes time–location sampling to obtain relatively large quasi-probability samples of MSM (MacKellar et al., 2007). Eligibility criteria for this cycle of the study were (a) age 18 years and over, (b) resident of the San Francisco Metropolitan Statistical Area, and (c) self-identifying as male who ever had sex with another man. Men who were determined to be eligible were asked to complete an interviewer-administered electronic survey on tablet computers and then test for HIV. All men who participated gave their written informed consent to participate. Men received $50 for their participation. NHBS is conducted entirely anonymously. This study has institutional review board (IRB) approval (IRB # 13-12697) from the University of California, San Francisco.

Measures

The behavioral survey contains measures on demographics, sexual behavior, substances that are commonly used by MSM (e.g., methamphetamine, cocaine, ecstasy, and marijuana), alcohol use, smoking and vaping, and self-reported sexually transmitted infections. The Patient Health Questionnaire-9 (PHQ-9) assessed depressive symptoms. Frequency of smoking or vaping in the past 12 months was assessed via two items "Do you smoke cigarettes or use electronic cigarettes (e-cigarettes) (cigarettes only, e-cigarettes only, both, neither)?" and "How often did you use e-cigarettes (once a month or less, about once a week, several times a week, about once a day, several times a day)?"

Data Analysis

In this exploratory analysis, the bivariable demographic, behavioral, and clinical correlates of smoking and vaping were evaluated using Fisher's exact and Wilcoxon rank-sum tests, as appropriate. Cohen's *d* was also calculated for bivariable analyses effect sizes. Variables chosen were either factors previously reported to be associated

with smoking or hypothesized potential predictors of smoking (Agaku et al., 2014; Akhtar-Khaleel et al., 2016; Shariati et al., 2017). The multivariable analyses used a model-building algorithm suggested by Hosmer and Lemeshow in which predictors in the bivariate analyses with a p value <.25 were included in the multivariable analysis and used a stepwise backward elimination approach to fit the most parsimonious model (Bursac, Gauss, Williams, & Hosmer, 2008; Hosmer & Lemeshow, 2000). All analyses were conducted in STATA version 14.1 (College Station, TX).

Results

Sample Characteristics

A total of 411 MSM were recruited and they agreed to participate in the study. Age was evenly distributed across age strata with the exceptions of 51 years and older (n = 85; 21%) and under 21 years (n = 1; 0.2%; Table 1). By race/ethnicity, 6% of the sample was Asian (n = 23), 6% Black (n = 25), 56% White (n = 229), 26% Latino (n = 106), and 6% other (n = 26) race/ethnicity. A majority had a college degree or higher education (n = 219; 53%); 15% had a high school education or less (n = 61). Demographically the sample is comparable to previous NHBS rounds of MSM in San Francisco (Raymond et al., 2013). One hundred (24%) self-reported being HIV-positive or tested HIV positive in the study.

Table 1. Demographic Characteristics of the National HIV Behavioral Surveillance Men Who Have Sex With Men (MSM) Cycle, San Francisco, 2014.

	n	%
Age		
18–20	1	0.2
21–25	59	14.4
26–30	73	17.8
31–35	63	15.3
36–40	46	11.2
41–45	42	10.2
46–50	42	10.2
51+	85	20.7
Race/ethnicity		
Asian	23	5.6
Black	25	6.1
White	229	55.9
Latino	106	25.9
Other	26	6.3
Education		
HS or less	61	14.8
Some college	131	31.9
Bachelors	128	31.1
Any post grad	91	22.1
Sexual orientation		
Straight	4	1
Gay	382	93.2
Bisexual	24	5.9
HIV positive	100	24.3

Note. HS = high school; MSM = men who have sex with men.

Smoking and Vaping Prevalence

More than two in five MSM (41%) smoked cigarettes or vaped in the past 12 months. Smoking or vaping was more common among HIV-positive MSM (47%) compared to HIV-negative MSM (37%). Smoking alone was more common among HIV-positive MSM (47%) compared to HIV-negative MSM (37%). Finally, 17% of MSM reported vaping (17% HIV negative, 16% HIV positive). The majority of MSM who vaped also smoked (96%).

Means/Proportion Differences Between Smoking and Nonsmoking MSM

MSM who smoked cigarettes were more likely to be men of color (46% vs. 35%; p = .02; Cohen's d = 0.23); have income below $50,000 per year (47% vs. 34%; p = .01; d = 0.27); have less than a college education (51% vs. 30%; p < .01; d = 0.43); be uninsured (55% vs. 38%; p = .04; d = 0.21); report any noninjection drug use (45% vs. 29%; p < .01; d = 0.32); use marijuana (45% vs. 34%; p = .02; d = 0.23); use methamphetamine (60% vs. 37%; p < .01; d = 0.32); use powdered cocaine (63% vs. 28%; p < .01; d = 0.72); use ecstasy (54% vs. 35%; p < .01; d = 0.34); use alcohol (46% vs. 29%; p < .01; d = 0.34); and binge-drink (49% vs. 28%; p < .01; d = 0.45), compared to nonsmoking MSM.

MSM who smoked cigarettes, on average, were significantly younger (mean 35.1 [SD = 10.4] vs. 41.3 [SD = 13.3]; p < .001; d = 0.51); reported more drinking days (mean 13.7 [SD = 9.7] vs. 10.3 [SD = 9.5]; p < .001; d = 0.36), and reported greater number of drinks on drinking days (mean 3.9 [SD = 2.7] vs. 2.6 [SD = 1.9]; p < .001; d = 0.54), compared to nonsmokers. Finally, MSM who smoked cigarettes reported greater depressive symptoms in PHQ-9 (mean 6.1 [SD = 5.2] vs. 4.7 [SD = 4.4]; p < .001; d = 0.29), compared to nonsmoking MSM.

Means/Proportion Differences between Vaping and Non-Vaping in MSM

MSM who vaped were more likely to have less than a college education (21% vs. 12%; p = .014; d = 0.43); use powdered cocaine (26% vs. 11%; p < .001; d = 0.72); use ecstasy (24% vs. 14%; p < .02; d = 0.34), and use heroin (67% vs. 16%; p < .001; d = 0.14) than non-vapers. MSM who vaped, on average, were significantly younger

Table 2. Multivariable Logistic Regression for Cigarette Smoking Among San Francisco Bay Area Men Who Have Sex With Men ($N = 411$).

Characteristics		aOR	95% CI	*p* value
HIV status	Negative/unknown (ref)			
	Positive	1.66	[1.00, 2.75]	.048
Depressive symptoms	No (ref)			
	Yes	1.04	[0.99, 1.09]	.122
Education	Less than college			
	College and above	0.57	[0.36, 0.88]	.012
Cocaine use (past year)	No (ref)			
	Yes	3.11	[1.93, 4.99]	<.001
Number of alcohol drinks on a drinking day	(for each additional drink)	1.16	[1.05, 1.29]	.006

Note. aOR = adjusted odds ratio.

Table 3. Multivariable Logistic Regression for Vaping Among San Francisco Bay Area Men Who Have Sex With Men ($N = 411$).

Characteristics		aOR	95% CI	*p* value
HIV status	Negative/unknown (ref)			
	Positive	0.91	[0.48, 1.70]	.758
Race/ethnicity	White			
	Non-White	0.83	[0.47, 1.45]	.511
Education	Less than college			
	College and above	0.56	[0.32, 0.98]	.044
Marijuana use (past year)	No (ref)			
	Yes	0.66	[0.37, 1.20]	.175
Methamphetamine use (past year)	No (ref)			
	Yes	3.01	[1.65, 5.50]	<.001

Note. aOR = adjusted odds ratio.

(mean 33.4 [$SD = 9.4$] vs. 40.9 [$SD = 12.8$]; $p < .001$; $d = 0.51$) and reported greater number of drinks on drinking days (mean 3.9 [$SD = 2.6$] vs. 3.0 [$SD = 2.2$]; $p < .001$; $d = 0.54$). Finally, MSM who vaped reported greater depressive symptoms in PHQ-9 (mean 6.3 [$SD = 4.7$] vs. 5.1 [$SD = 4.7$]; $p < .001$; $d = 0.30$), compared to non-vaping MSM.

Multivariable Logistic Regression Analyses

In multivariable analysis for smoking, the following covariates were included in the model: HIV status, depressive symptoms, education, cocaine use, and number of alcohol drinks on a drinking day. In this model, those who were HIV positive had significantly greater odds of smoking (adjusted odds ratio [aOR]: 1.7; 95% CI [1.00, 2.8]; $p = .048$) compared to those who are HIV negative. Additionally, those who reported cocaine use had greater odds of smoking (aOR 3.1; 95% CI [1.9, 5.0]; $p < .01$), compared to those who did not. Greater number of alcohol drinks on a drinking day was also associated with greater odds of smoking (aOR 1.2; 95% CI [1.05, 1.29]; $p < .01$). Finally, those who completed at least college education had lower odds of smoking (aOR 0.57; 95% CI [0.36, 0.88]; $p = .012$), compared to those who did not complete college (see Table 2). The covariate for depressive symptoms was not statistically significant (aOR 1.04; 95% CI [0.99, 1.09]; $p = .122$).

In multivariable analyses for vaping, the following variables were included in the model: HIV status, race/ethnicity, education, marijuana use, and methamphetamine use. In this model, those who reported methamphetamine use had greater odds of vaping (aOR 3.01; 95% CI [1.65, 5.50]; $p < .001$), compared to those who did not. Finally, those who completed at least college education had lower odds of smoking (aOR 0.55; 95% CI [0.32, 0.98]; $p = .044$), compared to those who did not complete college (see Table 3).The covariates for HIV status (aOR 0.91; 95% CI [0.48, 1.70]; $p = .758$) and race/ethnicity (aOR 0.83; 95% CI [0.47, 1.45]; $p = .511$) were not statistically significant.

Discussion

This study sought to examine the prevalence of cigarette and e-cigarette smoking among MSM and identified this prevalence to be extremely high, particularly among HIV-positive MSM. In this study, 41% of MSM smoked overall, while the prevalence of smoking was 47% among MSM living with HIV. These findings are consistent with high prevalence of smoking reported among MSM (21% for gay men, 29% for bisexual men) in California more broadly (Max et al., 2016; Tang et al., 2004). It is also notable that compared to the MSM in California, the smoking prevalence identified among MSM in San Francisco was much greater, despite the comprehensive and highly graded tobacco control policies in the major cities in this region (American Lung Association, 2018). Therefore, more targeted approaches may be needed in addition to current tobacco control policies to sufficiently address the high smoking rates identified among MSM in this region.

This study also identified that MSM who smoked were more likely to be racial and ethnic minorities, have lower socioeconomic status, and report more substance and alcohol use. These findings highlight the significant health disparities that persist among MSM subgroups with respect to smoking. The results from our study build on prior findings by identifying subgroups of MSM with higher burden of smoking and vaping, which to date has not been fully examined within a recent MSM sample (Max et al., 2016; Tang et al., 2004).

Given the high morbidity and mortality associated with tobacco use, the findings of this study highlight the urgent need to develop strategies effectively addressing the high rates of cigarette smoking and vaping among MSM. In particular, additional efforts to develop and target interventions among minority MSM, MSM living with HIV, and substance-using MSM may be needed to address the high burden of smoking in these subpopulations. As noted, studies suggest that the treatment outcomes among SOGI minorities are similar in nicotine treatment, compared to nonminorities. Hence, targeting and increasing access to evidence-based interventions for MSM who smoke should be prioritized in order to alleviate the disparities in smoking and vaping observed in this study (Grady et al., 2014).

Although vaping is a relatively new phenomenon, it is practiced by a significant proportion of MSM, and almost all of the MSM who vape in the present study also report smoking. Currently, the potential utility of vaping in smoking cessation remains inconclusive and an area of active research (Camenga & Tindle, 2018). If vaping is identified to be equally harmful, tobacco interventions must address vaping and target younger MSM who are more likely to vape. However, if vaping is reported to reduce harm from tobacco, research may be needed to determine if it is possible to get smokers to switch more exclusively to vaping.

There are a number of limitations to this analysis. First, the measure for smoking and vaping was based on self-report and did not include nuanced measures on patterns of use. Social desirability bias could have come into play as this was an interviewer-administered survey and men may have underreported their risk behaviors due to this bias. Recall bias may have also affected the data because participants were asked to recount behaviors from the past 12 months. Additionally, our study may not have measured all the relevant health conditions that may be associated with our exposures and outcomes of interest. Hence, another limitation to our analyses is the potential for unmeasured confounders. Finally, the sampling approach by design only samples MSM who attend venues known to be frequented by MSM. MSM who never attend such venues are excluded, which may limit the generalizability of these findings.

Conclusions

This study expands the understanding of smoking and vaping among MSM and points to important health disparities, particularly among MSM of color, people living with HIV, and men with lower educational attainment. Taken together, these findings underscore the important need to target interventions to MSM broadly, but also the importance of developing culturally tailored interventions for MSM subgroups who smoke and vape in disproportionately higher rates.

Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding

The author(s) disclosed receipt of the following financial support for the research, authorship, and/or publication of this article: This publication was supported by CDC Grant U1BPS003247. Its contents are solely the responsibilities of the authors and do not necessarily represent the official views of the CDC.

ORCID iD

Glenn-Milo Santos https://orcid.org/0000-0003-1009-5317

References

Agaku, I. T., King, B. A., & Dube, S. R., Centers for Disease Control and Prevention. (2014). Current cigarette smoking among adults – United States, 2005–2012. *Morbidity and Mortality Weekly Report*, *63*(2), 29–34.

Akhtar-Khaleel, W. Z., Cook, R. L., Shoptaw, S., Surkan, P. J., Teplin, L. A., Stall, R., … Plankey, M. (2016). Long-term cigarette smoking trajectories among HIV-seropositive and seronegative MSM in the multicenter AIDS cohort study. *AIDS and Behavior*, *20*(8), 1713–1721. doi:10.1007/s10461-016-1343-8

American Lung Association. (2018). *State of tobacco control 2018 – California local grades*. Retrieved from https://www.lung.org/local-content/california/documents/state-of-tobacco-control/2018/2018-sotc-california-full.pdf

Bursac, Z., Gauss, C. H., Williams, D. K., & Hosmer, D. W. (2008). Purposeful selection of variables in logistic regression. *Source Code for Biology and Medicine*, *3*, 17. doi:10.1186/1751-0473-3-17

Camenga, D. R., & Tindle, H. A. (2018). Weighing the risks and benefits of electronic cigarette use in high-risk populations. *Medical Clinics of North America*, *102*(4), 765–779. doi:10.1016/j.mcna.2018.03.002

Danaei, G., Ding, E. L., Mozaffarian, D., Taylor, B., Rehm, J., Murray, C. J., & Ezzati, M. (2009). The preventable causes of death in the United States: Comparative risk assessment of dietary, lifestyle, and metabolic risk factors. *PLoS Medicine*, *6*(4), e1000058. doi:10.1371/journal.pmed.1000058

Gallagher, K. M., Sullivan, P. S., Lansky, A., & Onorato, I. M. (2007). Behavioral surveillance among people at risk for HIV infection in the U.S.: The National HIV Behavioral Surveillance System. *Public Health Reports*, *122*(Suppl 1), 32–38.

Grady, E. S., Humfleet, G. L., Delucchi, K. L., Reus, V. I., Munoz, R. F., & Hall, S. M. (2014). Smoking cessation outcomes among sexual and gender minority and nonminority smokers in extended smoking treatments. *Nicotine & Tobacco Research*, *16*(9), 1207–1215. doi:10.1093/ntr/ntu050

Greenwood, G. L., Paul, J. P., Pollack, L. M., Binson, D., Catania, J. A., Chang, J., … Stall, R. (2005). Tobacco use and cessation among a household-based sample of US urban men who have sex with men. *American Journal of Public Health*, *95*(1), 145–151. doi:10.2105/AJPH.2003.021451

Helleberg, M., May, M. T., Ingle, S. M., Dabis, F., Reiss, P., Fatkenheuer, G., … Obel, N. (2015). Smoking and life expectancy among HIV-infected individuals on antiretroviral therapy in Europe and North America. *AIDS*, *29*(2), 221–229. doi:10.1097/QAD.0000000000000540

Hosmer, D. W., & Lemeshow, S. (2000). *Applied logistic regression*. New York, NY: Wiley.

Huang, J., Kim, Y., Vera, L., & Emery, S. L. (2016). Electronic cigarettes among priority populations: Role of smoking cessation and tobacco control policies. *American Journal of Preventive Medicine*, *50*(2), 199–209. doi:10.1016/j.amepre.2015.06.032

MacKellar, D. A., Gallagher, K. M., Finlayson, T., Sanchez, T., Lansky, A., & Sullivan, P. S. (2007). Surveillance of HIV risk and prevention behaviors of men who have sex with men–a national application of venue-based, time-space sampling. *Public Health Reports*, *122*(Suppl 1), 39–47. doi:10.1177/00333549071220S107

Max, W. B., Stark, B., Sung, H. Y., & Offen, N. (2016). Sexual identity disparities in smoking and secondhand smoke exposure in California: 2003–2013. *American Journal of Public Health*, *106*(6), 1136–1142. doi:10.2105/AJPH.2016.303071

Rasmussen, L. D., Helleberg, M., May, M. T., Afzal, S., Kronborg, G., Larsen, C. S., … Obel, N. (2015). Myocardial infarction among Danish HIV-infected individuals: Population-attributable fractions associated with smoking. *Clinical Infectious Diseases*, *60*(9), 1415–1423. doi:10.1093/cid/civ013

Raymond, H. F., Chen, Y. H., Ick, T., Scheer, S., Bernstein, K., Liska, S., … McFarland, W. (2013). A new trend in the HIV epidemic among men who have sex with men, San Francisco, 2004–2011. *Journal of Acquired Immune Deficiency Syndromes*, *62*(5), 584–589. doi:10.1097/QAI.0b013e318285febf

Shariati, H., Armstrong, H. L., Cui, Z., Lachowsky, N. J., Zhu, J., Anand, P., … Moore, D. M. (2017). Changes in smoking status among a longitudinal cohort of gay, bisexual, and other men who have sex with men in Vancouver, Canada. *Drug and Alcohol Dependence*, *179*, 370–378. doi:10.1016/j.drugalcdep.2017.07.025

Tang, H., Greenwood, G. L., Cowling, D. W., Lloyd, J. C., Roeseler, A. G., & Bal, D. G. (2004). Cigarette smoking among lesbians, gays, and bisexuals: How serious a problem? (United States). *Cancer Causes Control*, *15*(8), 797–803. doi:10.1023/B:CACO.0000043430.32410.69