national lgbt cancer network

TOBACCO RELATED CANCER PROJECT

Sexual and Gender Minority Tobacco Use by State - Methods

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The National LGBT Cancer Network understands CDC tobacco grantee states, tribes, and territories are in the process of creating their Work Plans for the next five years. Inclusion of disparity populations is encouraged by the notice of funding opportunity but must be driven by data. Thus we have worked with an expert to take years of combined Behavioral Risk Factor Surveillance System (BRFSS) data and use it to create state by state analyses of current smoking patterns for the sexual and gender minority (SGM population). This paper describes the methods used in that project.

Ask an Expert

To analyze the BRFSS data we worked with Dr. Bill Jesdale. Dr. Jesdale is an epidemiologist with Massachusetts Medical School who is particularly interested in LGBTQ health, BRFSS data, and is a cancer survivor himself. This is the beginning of a larger collaboration that will create custom data reports for a wide variety of health indicators for states reporting BRFSS SGM data.

Abstract

Objective: To describe the distribution of current tobacco use patterns across states.

Population: Behavioral Risk Factor Surveillance System 2014-2018, standard Sexual Orientation Gender Identity (SOGI) module.

Methods: Proportions of current smokers were estimated for sexual and gender minorities, within each state that administered the standard SOGI module at any point between 2014 and 2018. Odds ratios adjusted for age were estimated relative to cisgender heterosexuals of each gender. Results were weighted using standard techniques for weighting across multiple years, when applicable. Estimates based on 10 or fewer respondents are suppressed. In addition to an overall LGBT population, estimates for transgender populations of all sexes and sexual orientations, and cisgender bisexual, gay/lesbian and heterosexual populations of each sex are presented.

Results: Current smoking among lesbian, gay, bisexual and/or transgender respondents was 25% across 37 states and the territory of Guam (95% confidence interval 24% to 26%), 74% higher than among cisgender heterosexuals (age-adjusted odds ratio 1.74, 95% confidence interval 1.64-1.83). State-level estimates ranged from 17% in California to 42% in West Virginia, and from 33% higher among LGBT populations in Vermont (95% confidence interval 2% to 75% higher) to 172% higher among LGBT populations in Wyoming (95% confidence interval 125% to 216% higher). Detailed results for sexual and gender minority groups are also presented when based on sufficient data to make estimates.

Conclusions: Smoked tobacco use remains common among sexual and gender populations across the nation, and was higher for most sexual and gender minority populations in most states than cisgender heterosexuals.

Detailed Methodology

Sexual Orientation and Gender Identity Module

Beginning in 2014, the Behavioral Risk Factor Surveillance System (BRFSS) began fielding an optional module addressing sexual orientation and gender identity (SOGI). The module was fielded in 38 jurisdictions (states or territories) between 2014 and 2018; 23 in 2014, 23 in 2015, 26 in 2016, 28 in 2017, and 31 in 2018. As an optional module, the items in the SOGI module were asked of land-line and in-state cell phone respondents who did not terminate the interview before the items were asked. From 2014 to 2017, the first item was: “Do you consider yourself to be: 1 – Straight, 2 – Lesbian or gay, 3 Bisexual” with unread response options “4 – Other, 7 – Don’t know/Not sure, 9 – Refused”; and the second item was: “Do you consider yourself to be transgender?” If yes, ask “Do you consider yourself to be 1 – male-to-female, 2 – female-to-male, or 3 – gender non-conforming?” with “no” coded as 4, and unread response options “7 – Don’t know/Not sure, 9 – Refused”. In 2018, the sexual orientation item was altered to be identical to a similar item in the National Health Interview Survey: “Which of the following best represents how you think of yourself? 1 – {if sex=2: Lesbian or} Gay, 2 – Straight, that is, not gay, 3 – Bisexual, 4 – Something else” with unread responses “7 – I don’t know the answer and 9 – Refused”.

Classification of gender and sexual minority status

For this analysis, all transgender respondents of all sexes and sexual orientations (including “other”, “something else”, “don’t know/not sure” and “refused”) were considered together, because the number of female-to-male, male-to-female, and gender non-conforming respondents in most individual jurisdictions was too small to support analysis. Other groups considered were restricted to those identified as cisgender, with an identified sex and sexual orientation, namely gay, lesbian, bisexual, or heterosexual. We did not include persons responding “other” or “something else” because in comparable surveys, these respondents reflect a diverse range, more often heterosexual than sexual minority.

Sample size

- 2014 - 149,059 respondents were eligible
- 2015 - 164,327 respondents were eligible
- 2016 - 199,009 respondents were eligible
- 2017 - 197,071 respondents were eligible
- 2018 - 225,430 respondents were eligible

Of these:

- 4,122 were transgender
- 10,262 were cisgender bisexual women
- 5,829 were cisgender lesbian women
- 510,874 were cisgender heterosexual women
- 5,434 were cisgender bisexual men
- 8,192 were cisgender gay men
- 390,183 were cisgender heterosexual men

Total sample size - 934,896

Weighting and Clustering

Analyses were performed in SAS 9.4, using proc surveyfreq and proc surveyreg, with weights as provided on the standard BRFSS data files (_finalwt), adjusted for those jurisdictions which fielded the SOGI module in multiple years. Specifically, in jurisdictions fielding the standard SOGI module in all five years (Delaware, Hawaii, Indiana, Minnesota, Nevada, New York, Ohio, Pennsylvania, Virginia, Wisconsin, and Guam), weights were divided by 5; in jurisdictions fielding the module in four years (Connecticut, Georgia, Idaho, Illinois, Iowa, Louisiana, Massachusetts, Texas, Vermont), weights were divided by 4; in jurisdictions fielding the module in three years (Kansas, Maryland, Mississippi, Missouri, Montana, Rhode Island, Washington), weights were divided by 3; and in jurisdictions fielding the module in two years (California, Florida, Kentucky, North Carolina, Oklahoma, South Carolina, Tennessee, West Virginia), weights were divided by 2; while in jurisdictions fielding the SOGI module in only one of these years (Arizona, Colorado, Wyoming), the weights were used without further adjustment.

The clustering variable (_ststr) is intended for use in single year analysis. We created a novel stratification variable based on first interacting _ststr and the year of the interview, then collapsing across years in those jurisdictions that use the same stratification strategy in multiple years.

Data suppression

Results based on 10 or fewer respondents endorsing a given heath measure are suppressed.