#### AMERICAN JOURNAL OF

### Preventive Medicine

#### RESEARCH ARTICLE

## Transgender Use of Cigarettes, Cigars, and E-Cigarettes in a National Study

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Introduction: Tobacco use among transgender adults continues to be an area of research with few reported findings. The limited literature indicates higher cigarette use among transgender adults, compared with the general population. This national study is the first to report on cigarettes, cigars, and e-cigarettes by examining differences in transgender tobacco use independent of sexual orientation.

**Methods:** Data were collected in 2013 using a nationally cross-sectional online survey of U.S. adults (cisgender, n=17,164; transgender, n=168) and analyzed in 2015. Past 30-day tobacco use point estimates and adjusted logistic regression while controlling for false discovery rate were reported for transgender and cisgender respondents.

Results: Transgender adults reported higher past 30-day use of any cigarette/cigar/e-cigarette product (39.7% vs 25.1%) and current use of cigarettes (35.5% vs 20.7%), cigars (26.8% vs 9.3%), and e-cigarettes (21.3% vs 5.0%) compared with cisgender adults (all p-values  $\leq$  0.003). Transgender respondents had significantly higher odds of past 30-day tobacco product use for any cigarette/ cigar/e-cigarette product (OR=1.97, 95% CI=1.25, 3.1), e-cigarettes (OR=5.15, 95% CI=3.36, 7.88), cigars (OR=3.56, 95% CI=2.27, 5.59), and cigarettes (OR=2.10, 95% CI=1.35, 3.28) versus cisgender respondents (all *p*-values  $\leq$  0.0035).

Conclusions: Transgender adults are at higher risk for tobacco use than cisgender adults and risk of specific product use varies by gender. This is the first U.S. national study to assess differences in use of various tobacco products using questions that specifically ask for gender identity separately from sexual orientation. This study provides data that can inform targeted interventions to promote transgender health.

Am J Prev Med 2016;¶(¶):¶¶ . © 2016 American Journal of Preventive Medicine. Published by Elsevier Inc. All rights reserved.

#### INTRODUCTION

or nearly 20 years, an increasing number of ↓ published scientific articles have substantiated higher rates of tobacco use among adult lesbian, gay, bisexual, and transgender (LGBT) individuals, both for smoking and for different types of tobacco use, when compared with heterosexuals.<sup>1,2</sup> Prior studies have largely limited their analysis to sexual orientation (i.e., lesbian, gay, bisexual, and heterosexual adults); in recent years, studies have begun to disaggregate the LGB group and examine intragroup differences in tobacco use for lesbian, gay, bisexual, or other sexual minority-identified adults.<sup>1,3–5</sup> However, data reported on tobacco use

among transgender populations remains scant.<sup>6,7</sup> (Note: Transgender is a term for a person whose sense of gender

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0749-3797/\$36.00

http://dx.doi.org/10.1016/j.amepre.2016.11.022

does not correspond with their birth sex and *cisgender* is a term used to describe people who are not transgender.)

The 2010 American Lung Association comprehensive report on LGBT and tobacco use acknowledged that there were no published studies on transgender cigarette smoking.<sup>8</sup> Since 2010, a few have emerged. One study conducted in Missouri, a convenience sample of attendees of four pride festivals throughout the state and an online survey, showed that cigarette smoking rates were nearly twice as high for transgender/genderqueer (43%) than heterosexual individuals (27%). A community study conducted in San Francisco found that 83% of transgender women respondents indicated that they had smoked a cigarette in the last month, and of these women, 62.3% reported daily smoking. <sup>10</sup> A similar study of transgender adults in Massachusetts found that 43.2% of transgender adults living in an "HIV hot spot" were current smokers compared with 34.3% of transgender adults who did not live in a geographically defined HIV hot spot.<sup>11</sup> Data from the largest study, the National Trans Discrimination Survey, which used a nonprobability sample (N=6,400), found that 30% of transgender respondents were smoking daily or occasionally versus 20.6% of the general population. 12 In another analysis of adults from this sample, researchers found that some college educational attainment was protective against cigarette smoking whereas lack of insurance, use of alcohol or drugs, and experience of structural discrimination was associated with higher risk for cigarette smoking.<sup>13</sup> Furthermore, the Massachusetts Behavioral Risk Factor Social Survey, which used a probability sample, found that 36.2% of transgender compared with 17.3% of cisgender adults were current smokers. 14

There is a dearth of data on transgender tobacco use from nationally representative samples. Two separate papers used data from the 2009–2010 National Adult Tobacco Survey and found that tobacco use among the LGBT aggregate group was higher than non-LGBT adults. Stratified analyses based on sexual orientation and gender identity could not be done because the 2009–2010 National Adult Tobacco Survey only had one question that conflated sexual orientation and gender identity. King et al. Lacknowledged this to be a limitation as respondents were not given multiple response options to indicate being transgender and their sexual orientation.

Exploring tobacco use among transgender populations is of vital public health importance as initial evidence indicates LGBT populations, and transgender populations in particular, are at disparate risk for using tobacco, and thus may be at disparate risk for a variety of negative health outcomes associated with tobacco. However, without empirical data, it is impossible to determine

the extent of this disparity if it does in fact exist. This study is a step in that direction.

The objective of this study is to use a national sample to examine intragroup differences in tobacco use for transgender adults; this is the first such research. This study used two separate LGBT measures to differentiate gender identity from sexual orientation. This made it possible to examine tobacco use for transgender versus cisgender adults and account for sexual orientation. The results from this paper fill a gap in the literature by providing additional data on cigarettes and cigars, and first-time data on e-cigarettes among transgender adults and identifying the specific risk of use among transgender participants. These data can be used to inform the design of tobacco prevention and cessation interventions that target transgender adults.

#### **METHODS**

#### **Study Population**

Data for this study were collected as part of an online survey, Tobacco in a Changing Media Environment, developed to assess tobacco use behaviors among adults aged  $\geq 18$  years and administered by the GfK Group in February and March 2013 (N=17,522). The recruitment design has been reported previously.<sup>2,17</sup>

The majority of participants (75%) were drawn from GfK's KnowledgePanel® (KP), a probability-based sample of adults recruited using random-digit dialing supplemented by addressbased sampling. Of the 34,097 KP members, 61% completed screening for eligibility and 97% of those eligible completed the survey. Tobacco users were oversampled to ensure sufficient sample size for that group. GfK augmented the KP sample by collecting an off-panel convenience sample (25%) and screening people who clicked on online ads for study eligibility. The augmented sample was then calibrated into the probability-based sample on demographic characteristics and tobacco use status. Because there was no sampling frame, response rates for the convenience sample are not available. Respondents who did not (or refused to) report their gender identity were excluded (n=190). Of 168 transgender respondents, 74 (44%) were KP members and 94 (56%) were from the off-panel sample. Respondents provided online consent prior to participation.

Weighting adjustments were made to compensate for deviations from equal probability sampling. Post-stratification weights were developed to account for non-response, oversampling of tobacco users, calibration of off-panel respondents, and other sources of non-sampling error.

The resulting sample included 17,332 respondents, of whom 168 were transgender and 17,164 were cisgender. The study received IRB approval from the University of Illinois at Chicago and the University of California, San Diego.

#### Measures

The measures used in this study included sociodemographic factors, gender identity, and tobacco use behaviors. Sociodemographic variables included self-reported sexual orientation

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