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Nicotine Tob Res. 2010 June ; 12(6): 669–673. doi:10.1093/ntr/ntq057.**Adult use of cigars, little cigars, and cigarillos in Cuyahoga County, Ohio: A cross-sectional study****Elaine A. Borawski, Ph.D.¹, Ashley Brooks, M.P.H.², Natalie Colabianchi, Ph.D.³, Erika S. Trapl, Ph.D.¹, Kathryn A. Przepyszny, M.A.⁴, Nichelle Shaw, M.P.H.⁵, and Laura Danosky, M.P.H.¹**¹Department of Epidemiology and Biostatistics, Prevention Research Center for Healthy Neighborhoods, School of Medicine, Case Western Reserve University, Cleveland, OH²Department of Health Behavior and Health Education, Gillings School of Global Public Health, University of North Carolina at Chapel Hill, Chapel Hill, NC³Department of Epidemiology and Biostatistics, Arnold School of Public Health, University of South Carolina, Columbia, SC⁴Center for Clinical Investigation, School of Medicine, Case Western Reserve University, Cleveland, OH⁵Division of Community Health, Cuyahoga County Board of Health, Cuyahoga County, Ohio**Abstract****Introduction**—Adult use of cigars, cigarillos, and little cigars has increased over the past two decades; however, little is known about the characteristics of the users.**Methods**—The data were derived from 5 years (2003–2007) of the Cuyahoga County Behavioral Risk Factor Surveillance Survey, a random digit–dialed telephone survey conducted by ICF Macro International, based on the survey and methods of the Ohio BRFSS.**Results**—Results indicate that the prevalence of current cigarette smoking across the 5 years was 23.1%. Cigar use and little cigar use were reported by 4.3% and 3.3% of respondents, respectively. Compared with cigarette users, cigar and little cigar users were far more likely to report multiple product use (12.8% vs. 63.9% and 80.5%, respectively). Cigar and little cigar users differed from cigarette smokers in demographic profile and patterns of multiple product use.**Discussion**—Black and lower income adults were significantly more likely to report use of little cigars and use of multiple products. These disparities potentially contribute to the disproportionate rates of tobacco-related illnesses and underrepresentation of low-income and minority populations in tobacco use prevalence rates

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Declaration of Interests

None declared.

Introduction

Over the past 10 years, annual cigar consumption in the United States has incrementally increased as cigarette consumption has declined (Connolly & Alpert, 2008; U.S. Department of Agriculture, 2007). The sale of small cigars alone increased by 115% between 2000 and 2007 (Connolly & Alpert). This is cause for concern given the evidence that cigar smoking has been linked to negative health effects (Baker et al., 2000; Shapiro, Jacobs, & Thun, 2000), including coronary heart disease, chronic obstructive pulmonary disease (Iribarren, Tekawa, Sidney, & Friedman, 1999), cancers of the lung, pharynx, esophagus, pancreas, and bladder, especially among those who inhale the smoke (Shapiro et al.).

The U.S. Surgeon Generals and public health researchers have sought to bring attention to cigar use as a serious risk to public health (Baker et al., 2000; Satcher, 1999; Symm, Morgan, Blackshear, & Tinsley, 2005), yet most state and national surveillance surveys inconsistently collect cigar data and none regularly include small cigar or cigarillo-specific questions (Centers for Disease Control and Prevention [CDC], 2007; Delnevo, 2006), limiting our understanding of the prevalence, profiles of users, and patterns of use of these products (Terchek et al., 2009). This study examines prevalence, demographic characteristics of adult tobacco users, and patterns of multiple product use for three categories of tobacco use: cigarette, cigar, and little cigar (which includes cigarillos and small cigars).

Methods

The data were derived from 5 years (2003–2007) of the Cuyahoga County Behavioral Risk Factor Surveillance Survey (BRFSS), a random digit–dialed telephone survey conducted by ORC Macro, based on the survey and methods of the Ohio BRFSS (CDC, 2006; Przepyszny, & Borawski, 2008). Cuyahoga County is one of the largest counties in the state and includes the city of Cleveland and 58 surrounding municipalities, villages, and townships. In addition to identifying current cigarette users, defined as having smoked at least 100 cigarettes in their lifetime and smoking every day or some days, the survey also profiled current cigar users and little cigar users. Individuals who responded “every day” or “some days” to the following item were categorized as cigar users, “Do you now smoke cigars every day, some days, or not at all? Please do not include little cigars, such as Black & Milds, when considering your answer to this question.” Similarly, individuals who responded “every day” or “some days” to the following item were categorized as little cigar users, “Do you now smoke little cigars, such as Black & Milds, every day, some days, or not at all?” These categories are not mutually exclusive, such that a cigarette user could also be a cigar user and/or a little cigar user; however, respondents were specifically asked to exclude the other products in their reporting of each type.

The survey was completed by a total of 6,539 adults, aged 18 years and older, and weighted to reflect the population of adults living in Cuyahoga County, Ohio, according to BRFSS methodology that includes both sampling probability and poststratification weighting (CDC, 2007). Cuyahoga County involves only one population sampling unit. The data were combined across years to maximize the sample size of cigar and little cigar smokers. Significant differences were determined based on nonoverlapping 95% *CI*s surrounding the

prevalence rates. SAS 9.2 survey procedures were used to obtain weighed estimates and to account for differences in variance estimation resulting from the complex sampling design. This study was approved by the Institutional Review Board at Case Western Reserve University, Cleveland, Ohio.

Results

Average prevalence of current cigarette smoking across the 5 years was estimated at 23.1%, higher than comparable state or national estimates for the same time period, however, similar to other Midwestern urban areas (CDC, 2010). As shown in Table 1, cigar use and little cigar use were reported by 4.3% and 3.3% of respondents, respectively. Compared with cigarette users, cigar and little cigar users were far more likely to report multiple product use (12.8% vs. 63.9% and 80.5%, respectively).

Multivariate examination of each type of product user and multiple product use revealed different demographic profiles, as shown in Table 2. As expected, when compared with older adults (55 years and older), younger adults were more likely to report use of all three tobacco products; however, the most striking difference was among little cigars users, where adults under age 35 years were nearly three times more likely to be little cigar users than those 35–54 years ($OR = 8.76$ vs. 3.21) and nine times more likely than those aged 55 years or older (reference group). Age was not a predictor of multiple product use. While men were more likely to use all three tobacco products than women, they were significantly and substantially more likely to be cigar ($OR = 9.27$), little cigar ($OR = 4.00$), or multiple product users ($OR = 4.77$) than cigarette smokers. After controlling for other socioeconomic status (SES) measures (education and income), racial background of the respondent was predictive of both little cigar and multiple product use but not cigarette or cigar use. Compared with White adults, Black adults were nearly two times more likely to be a little cigar ($OR = 1.94$) or multiple product ($OR = 1.98$) user. Adults from racial backgrounds categorized as other (predominantly Asian/Pacific Islander, Native American, and unidentified race in this sample) were significantly less likely to be a little cigar user ($OR = 0.12$) compared with White adults. Non-college-degreed adults were significantly more likely to be both cigarette and little cigar users than adults with college degrees. Lastly, adults in the lowest household income categories (<\$25,000/year) were significantly more likely to use any of the three tobacco products and to be a multiple product user than those at the highest income category (>\$75,000/year). Little cigar users, in particular, were more likely to be among the most economically challenged. For example, adults making less than \$25,000 were over four times more likely ($OR = 4.43$) to be a little cigar user and nearly three times more likely ($OR = 2.80$) to be a multiple product user than those at the highest levels of income.

Little cigar users who also smoked cigarettes (i.e., multiple product users) smoked cigarettes on a comparable number of days per month (24.1 days, $SD = 10.0$) and smoked a similar number of cigarettes per day (11.61 cigarettes, $SD = 10.3$) as compared with cigarette-only users (26.0 days, $SD = 8.2$ and 13.3 cigarettes, $SD = 9.6$, per day; data not shown). This is in addition to the average of 1.9 little cigars smoked per day on an average of 11 days per month that these multiple products users also consume (data not shown).

Discussion

In spite of the documented increase in other tobacco products (e.g., cigars, little cigars, smokeless, roll-your-own) over the past decade (Connolly & Alpert, 2008), current national surveillance systems (e.g., Behavioral Risk Factor Surveillance System) do not regularly assess the prevalence and patterns of tobacco products other than cigarettes. As a result, we lack the ability to track the use of these products, particularly cigars and little cigars, as well as the profiles of users and patterns of use. Our findings from a large urban population suggest that while the overall prevalence may be lower, cigar and little cigar users have significantly different demographic profiles and engage in different patterns of multiple product use when compared with cigarette users. Over half of cigar and little cigar users are also concurrent cigarette users, potentially increasing their exposure to tobacco and thereby increasing their risk for tobacco-related illnesses. Moreover, it appears that cigars, and particularly little cigars, are not alternatives to cigarettes for these users but rather tobacco products that are used in addition to regular cigarette use. This is especially concerning given the evidence that multiple product users are more likely to inhale cigar smoke than cigar-only smokers (Shanks & Burns, 1998) and that inhalation of cigar smoke has been linked to cancer (Shapiro et al., 2000).

While multiple product use is important, we also note that approximately 20% of cigar and little cigar users are not concurrently using cigarettes. Since cigar smoking is inconsistently assessed and little cigar smoking is not regularly assessed in any U.S. state or national surveillance system, the exclusive use of cigars and/or little cigars is being overlooked in tobacco use surveillance.

Our findings indicate that Black and low-income adults are more likely to use other tobacco products, such as little cigars, and to be multiple product users, potentially contributing to the disproportionate rates of tobacco-related illnesses, particularly lung cancer (Haiman et al., 2006; Schwartz & Swanson, 1997), observed among racial and ethnic minorities and lower SES individuals (Delva et al., 2005; Fagan et al., 2004). Researchers have identified several reasons why cigar consumption may have increase among some segments of the population, including price and tax incentives in the United States. (Connolly & Alpert, 2008; Delnevo & Hrywna, 2007). State and federal taxes on small cigars are less than a 10th of taxes applied to cigarettes, resulting in much cheaper products (Connolly & Alpert). While cigarettes must be sold in packs of 20, little cigars are sold in smaller packs of 5 and are often sold as singles for pocket change (Jolly, 2008). Marketing of tobacco products, particularly little cigars, has been specifically targeted to low-income and minority populations (Moore, Williams, & Qualls, 1996). A number of recent studies with adolescents have documented the growing preference of little cigars over cigarettes, particularly among minority youth (Brooks et al., 2008; Jolly, 2008). Moreover, these studies have found that youth, and particularly, Black youth may perceive cigars more favorably than cigarettes and consider cigars more natural, less harmful, cheaper, and better smelling than cigarettes (Jolly, 2008; Malone, Yerger, & Pearson, 2001; Richter, Pederson, & O'Hegarty, 2006; Soldz & Dorsey, 2005; Symm et al., 2005; Terchek et al., 2009).

There are limitations to our study. We included cigarillos (e.g., “Black & Milds”) in our classification of little cigars, which is different from U.S. federal classification of these products. According to federal regulations, cigars are classified in two categories: large cigars, weighing more than 3 pounds per thousand and small cigars, those weighing not more than 3 pounds per thousand and often packaged in a manner like cigarettes (e.g., “Winchester Little Cigars”). We would argue that the federal classification of large cigars is overly broad, counting large premium cigars with inexpensive manufactured cigarillos, exemplified by brands, such as Black & Mild. Evidence suggests that the increasing sales rate of cigarillos and small cigars are more similar to each other than either category is to the sales rate of large cigars (Kozlowski, Dollar, & Giovino, 2008). Thus, we would argue that the federal classification is not a useful tool in public health surveillance of tobacco use because it is unlikely that survey respondents are aware of the U.S. federal classification of cigars based on weight or use of the phrase “small cigar” to refer to a specific agriculture product. Thus, our survey item uses the phrase “little cigar” not as a legal definition but as a description of the cigar, which includes both small cigars and cigarillos. We attempted to further clarify our intent to the survey respondent by including the brand name (Black & Mild), which is one of the most popular cigarillo brands.

There are other limitations to our study that are important to note. First, we did not examine the prevalence and patterns of the use of “blunts,” a term which commonly describes a cigar containing some combination of tobacco and marijuana. We excluded blunts to focus the attention on tobacco products without the complexity of other substance use. Second, we did not analyze the use of pipes or smokeless tobacco due to the low prevalence of these products in the geographic region included in this study. Third, as discussed above, it is difficult to be certain if the respondents correctly classified their tobacco use as either cigarette, little cigar, or cigar use. Little cigars are frequently packaged similar to cigarettes, and some respondents may not realize the differences. Similarly, there are variations in the size and packaging of cigarillos making it difficult for some survey respondents to distinguish the various tobacco products, although we did give popular specific examples (e.g., Black & Milds) in the question stem to assist respondents in their classification. Fourth, as is the case with the BRFSS in general, this survey relies on self-reported information, which may lead to underreporting of socially unacceptable behaviors. Similarly, because the survey is administered by telephone, there may be a lack of representation of households without a telephone. Finally, the individuals included in this survey were sampled to be representative of the Greater Cleveland area, and the findings may not generalize to other metropolitan areas or rural areas.

This study found that low-income and minority adults were disproportionately likely to use little cigars and multiple tobacco products. These results add to the growing number of recent studies highlighting the importance of including alternative tobacco products, particularly little cigars, in national surveillance and tobacco prevention and cessation policies. Surveillance measures that group the use of all alternative tobacco products together, or exclude items assessing cigar and little cigars, may underestimate tobacco use prevalence among minority and low-income populations and obscure disparities in tobacco-related deaths.

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Table 1Prevalence of cigarette, cigar, and little cigar use^a and multiple product use

	Cigarette use	Cigar use	Little cigar use
Prevalence	23.1	4.3	3.3
95% <i>CI</i>	(21.9–24.4)	(3.6–5.0)	(2.7–4.0)
Multiple product use			
Also smokes cigarettes	—	27.9	33.6
Also smokes cigars	5.2	—	27.7
Also smokes little cigars	4.8	21.3	—
Smoke both other products	2.8	14.8	19.2
Uses no other product	87.2	36.1	19.5

Note. Prevalence is mean prevalence across years of data (2003–2007); results are weighted to reflect sampling and selection probability as well as poststratification based on county population ($n = 997,429$ – $1,017,345$) depending upon the year.

^aCurrent cigarette, cigar, and little cigar use is measured as reports of smoking each tobacco product “every day” or “some days.” Each product category is not mutually exclusive.

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Table 2

Demographic characteristics of cigarette, cigar, little cigar, and multiple product users: weighted multivariate results^a

	Cigarette use ^b	Cigar use ^b	Little cigar use ^b	Multiple product use ^c
Age (years) ^d				
18–34	2.84 (2.27–3.56)	2.50 (1.54–4.06)	8.76 (4.19–18.33)	1.80 (1.00–3.23)
35–54	2.87 (2.38–3.47)	2.07 (1.37–3.13)	3.21 (1.52–6.82)	1.15 (0.67–1.96)
Gender (male)	1.34 (1.13–1.58)	9.27 (5.82–14.79)	4.00 (2.42–6.60)	4.77 (2.97–7.65)
Race ^e				
Black	0.85 (0.70–1.04)	1.03 (.66–1.61)	1.94 (1.14–3.29)	1.98 (1.24–3.18)
Hispanic	1.11 (0.67–1.85)	1.01 (0.37–2.80)	1.30 (0.41–4.10)	0.90 (0.33–2.45)
Other	0.57 (0.32–1.04)	0.69 (0.20–2.38)	0.12 (0.02–0.92)	0.47 (0.05–4.51)
Education ^f				
HS or less	3.68 (2.93–4.62)	1.44 (0.93–2.25)	3.77 (1.63–8.72)	0.79 (0.43–1.46)
Some college	2.87 (2.28–3.62)	1.87 (1.19–2.93)	2.84 (1.19–6.77)	1.01 (0.52–1.95)
Household income ^g				
<25,000	2.00 (1.52–2.63)	1.76 (1.03–3.04)	4.43 (1.95–10.08)	2.80 (1.35–5.82)
25,000–49,999	1.56 (1.20–2.03)	1.39 (0.85–2.28)	2.59 (1.08–6.23)	1.89 (0.91–3.94)
50,000–74,999	1.29 (0.97–1.72)	0.94 (0.53–1.67)	1.70 (0.63–4.60)	1.72 (0.75–3.94)

Note. *HR* = high school; *OR* = odds ratio; bolded text identifies ORs that are statistically different (at least $p < .05$) from reference group.

^aResults are weighted to reflect sampling and selection probability as well as poststratification based on county population ($n = 997,429$ – $1,017,345$) depending upon the year. Nonweighted samples were: 1412 (cigarette smokers), 219 (cigars), 139 (little cigars), and 177 (multiple product users). For each analyses, multiple usage is not removed, that is, cigar users may also be little cigar or cigarette users and thus may be included in more than one category.

^bUser versus nonsmoker ($n = 4,924$): other product users excluded from each analyses. *OR* (95% *CI*).

^cUses more than one product (cigarette, cigar, or little cigar) versus single product user *OR* (95% *CI*).

^dReference group = 55 years and older.

^eReference group = Caucasian adults.

^fReference group = College graduate or higher.

^gReference group = \$75,000 or more.