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# **Infrequent and Frequent Nondaily Smokers and Daily Smokers: Their Characteristics and Other Tobacco Use Patterns**

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## ABSTRACT

**Introduction:** The proportion of smokers who do not smoke daily has increased over time, but nondaily smokers are a heterogeneous group. We compare characteristics and other tobacco product use of infrequent **nondaily**, frequent **nondaily**, and daily U.S. adult smokers.

**Methods:** We analyzed data from the 1998, 2000, 2005, and 2010 National Health Interview Surveys. Current smokers were categorized as daily, **infrequent nondaily (smoked 1-12 days in the past 30 days)**, and **frequent nondaily (smoked 13-29 days in the past 30 days)** smokers. Multinomial logistic regression analysis was used to analyze the correlates of infrequent **nondaily**, frequent **nondaily**, and daily smoking.

**Results:** Among current smokers, **8.3%** were infrequent **nondaily**, **8.1%** were frequent **nondaily**, and **83.6%** were daily smokers. The prevalence of infrequent vs. daily smoking increased over time, with a smaller increase among non-Hispanic Blacks than non-Hispanic Whites. The adjusted odds of both infrequent and frequent smoking vs. daily smoking differed by age, race/ethnicity, education, poverty status, marital status, region, quit attempts in the past 12 months, **and binge drinking**. Snuff users (vs. non-snuff users) were **2.4** times **as** likely to be infrequent than daily smokers. There were also differences in **race/ethnicity, education, marital status, region, quit attempts, and snuff use** between infrequent vs. frequent smokers.

**Conclusion:** Infrequent smokers differ from both frequent and daily smokers in socio-demographics, quit attempts, and snuff use. The heterogeneity of nondaily smokers should be considered in developing targeted tobacco control and smoking cessation programs.

## **IMPLICATIONS**

Infrequent and frequent nondaily smokers were found to differ from daily smokers in age, race/ethnicity, education, poverty status, marital status, region, and quit attempts and they were different from each other in race/ethnicity, education, marital status, region, and quit attempts. Binge drinkers were more likely to be infrequent smokers **and frequent smokers** vs. daily smokers. Current snuff users were found to have increased odds of infrequent smoking vs. daily smoking and vs. frequent smoking. These results highlight the importance of acknowledging the differences among nondaily smokers in smoking frequency in developing targeted tobacco control and smoking cessation programs.

## INTRODUCTION

Daily smoking has become less prevalent while the prevalence of nondaily smoking — also known as some-day smoking, intermittent smoking, and occasional smoking — among adult current smokers in the U.S. increased from 19.2% in 2005 to 23.2% in 2014.<sup>1</sup> The increasing prevalence of nondaily smoking<sup>1</sup> is the subject of a number of studies in the U.S. Some studies<sup>2-9</sup> treated nondaily smokers as a homogeneous group with common characteristics and behaviors to be compared with daily smokers, and found that nondaily smokers were more likely to be younger, ethnic minorities, better educated, have higher income, and have stronger intentions to quit than daily smokers, regardless whether the study population focused on all U.S. adults,<sup>2,3,5,6</sup> working adults in Minnesota,<sup>7</sup> adults aged 24-64 in selected communities in Canada and the U.S.,<sup>8</sup> or college students in North Carolina.<sup>10</sup> Other studies identified two different subgroups of nondaily smokers based on their previous smoking status: those who had previously smoked daily and those who had never smoked daily,<sup>4,11-18</sup> and compared socio-demographic characteristics,<sup>11,15</sup> smoking patterns,<sup>4,12,13</sup> cessation behaviors,<sup>13</sup> and other tobacco product use,<sup>16,17</sup> between these two groups of nondaily smokers. The study population of these studies included all U.S. adults,<sup>12,14</sup> California young adults aged 18-29,<sup>15</sup> California adults aged 18+,<sup>11,13,18</sup> community volunteers aged 21+ from Pittsburgh,<sup>4</sup> U.S. military recruits,<sup>17</sup> or U.S. college students aged 18-25.<sup>16</sup> These studies found that the two subgroups of nondaily smokers were similar in socio-demographic characteristics,<sup>11,15</sup> and situations in which they smoked such as at parties or while driving,<sup>15</sup> but differed in smoking frequency in the past 30 days and the number of cigarettes smoked per day (CPD).<sup>4</sup> The above studies measured nondaily smoking using the following criteria: having smoked 100 cigarettes and smoking some days now<sup>2,5-7,12,14,15,18</sup> or smoking less than 30 days in the past 30 days.<sup>10,13,16</sup>

Few studies<sup>19,20</sup> have classified nondaily smokers into infrequent and frequent smokers according to their smoking frequencies in the past 30 days. Berg, Ling et al.<sup>19</sup> classified college student smokers aged 18-25 into

infrequent nondaily (1-5 smoking days), frequent nondaily (6-29 smoking days), and daily smokers. They found that other tobacco product use frequency and alcohol drinking positively correlated with more frequent smoking, both infrequent and frequent smokers were more likely to smoke for social reasons, and the readiness to quit was negatively associated smoking frequency. Another study<sup>20</sup> showed that among young adults aged 18-22 from five U.S. upper Midwestern states, infrequent (1-14 smoking days) nondaily smokers were much less likely than frequent (15-29 days) nondaily smokers to consider themselves as smokers, feel addicted, or smoke with friends. They also reported that daily smokers were more likely than frequent nondaily smokers to feel addicted and to be unsure whether they could quit. Although these two studies distinguished nondaily smokers according to smoking frequency, they only focused on young adults. There has been little research that analyzes the entire U.S. adult population in terms of smoking frequency and characteristics of different groups of nondaily smokers.

Many cigarette smokers also use other tobacco products (OTP), including cigars, pipes, chewing tobacco, snuff, snus, e-cigarettes, and other newer products.<sup>21-25</sup> In 2010, the prevalence of current polytobacco use was 8.6% among current cigarette smokers.<sup>21</sup> In 2012, 10.1% of young adults aged 18–25 and 3.7% of adults aged 26+ were current polytobacco users.<sup>26</sup> Studies have found that water pipe ever users and snuff current users are more likely to be nondaily cigarette smokers than daily cigarette smokers,<sup>9,27-29</sup> and nondaily cigarette smokers are more likely to concurrently use smokeless tobacco products than daily smokers.<sup>30,31</sup> While OTP use patterns differ between daily and nondaily smokers, it is unknown whether OTP use patterns also differ between infrequent and frequent nondaily smokers.

The objective of this paper is to examine the characteristics and cigar, snuff and chewing tobacco use patterns of infrequent and frequent nondaily smokers compared to daily smokers and also compared to each other

among the U.S. adult population aged 18+. The results of this study will help identify subgroups of nondaily smokers who may benefit from targeted tobacco control policies and cessation interventions.

## **METHODS**

### **Data Source**

National Health Interview Survey (NHIS) data were used in this study. The NHIS is conducted annually by the U.S. Centers for Disease Control and Prevention, National Center for Health Statistics and administered by the U.S. Census Bureau. It is a nationally representative cross-sectional face-to-face interview survey of households in the civilian non-institutionalized population. The survey contains information about socio-demographics, smoking status, number of cigarettes smoked per day, and number of days smoked in the past 30 days. Since 1987, a Cancer Control Supplement has been periodically fielded as part of the NHIS to collect information about the use of other tobacco products. The most recent Cancer Control Supplements were conducted in 1998, 2000, 2005 and 2010. We pooled data from these four years to obtain a total sample of 123,399 adults.

### **Outcome Variables**

*Nondaily Smokers* were respondents who have smoked at least 100 cigarettes in their lifetime, reported that they now smoke cigarettes some days, and answered 1-29 days to the following NHIS question: “On how many of the past 30 days did you smoke a cigarette?” We further categorized nondaily smokers into infrequent and frequent smokers if they indicated that they smoked 1-12 and 13-29 days, respectively, in the past 30 days. The cutoff for infrequent vs. frequent smokers was determined by the median (12 days) number of days smoked in the past 30 days among all nondaily smokers in this study.

*Daily Smokers* were respondents who have smoked at least 100 cigarettes in their lifetime and reported that they now smoke cigarettes every day or that they now smoke cigarettes some days but smoked 30 days in the past 30 days (N=480).

## **Covariates**

Covariates in our analysis included year, socio-demographic characteristics, binge drinking, quit attempts in the past 12 months, cigar use, snuff use, and chewing tobacco use. Year is a continuous variable assigned values of 1, 3, 8, and 13 for the survey years 1998, 2000, 2005, and 2010, respectively. Socio-demographic characteristics included age (18-34, 35-64, and 65+), gender (male and female), race/ethnicity (Hispanic, non-Hispanic White, non-Hispanic Black, non-Hispanic Asian, and non-Hispanic Other), education, poverty status, marital status (married, single/divorced/widowed, never married, and living with a partner), and region of residency (Northeast, Midwest, South, and West). Education was categorized as less than high school, high school graduate (including general education development), some college, college degree, and postgraduate. Based on NHIS data for the ratio of family income to the poverty threshold after considering family size,<sup>32,33</sup> we categorized poverty status as: poor (0.00-0.99), low income (1.00-1.99), moderate income (2.00-3.99), high income ( $\geq 4.00$ ), and unknown. Those who reported “refused”, “not ascertained”, or “don’t know” to the NHIS family income question were not excluded from our analyses but were classified as a separate “unknown” group, because 17.6% of current smokers fell in this category and we were concerned that income might not be missing at random.

Binge drinking status was defined as whether or not a respondent drank  $\geq 5$  alcoholic drinks in a single episode in the past year based on the NHIS question: “In the past year, on how many days did you have 5 or more drinks of any alcoholic beverage?” Respondents who answered one or more days were classified as



binge drinkers. We defined quit attempts in the past 12 months according to the response (yes/no) to the following question: “During the past 12 months, have you stopped smoking for more than one day because you were trying to quit smoking?” For cigar use, snuff use, and chewing tobacco use, we classified respondents into current users and non-current users. Current users of snuff (chewing tobacco) were those who have used snuff (chewing tobacco) at least 20 times in their lifetime and now use snuff (chewing tobacco) every day or some days. Current cigar smokers were those who have smoked at least 50 cigars in their lifetime and now smoke cigars every day or some days.

### **Statistical Analysis**

We estimated the prevalence of infrequent, frequent, and daily smoking among all current smokers for each subgroup stratified by each covariate. We also examined the independence between each covariate and the outcome variable using a bivariate chi-square test. A multivariate multinomial logistic regression model was used to analyze the associations between covariates and the likelihood of infrequent smoking and frequent smoking as separate outcomes vs. daily smoking among all current smokers. A Wald chi-square test from the multinomial logistic regression analysis was used to test if the associations between covariates and the likelihood of infrequent smoking vs. frequent smoking were statistically significant. Whether the prevalence of infrequent and frequent smoking vs. daily smoking changed over time was determined by the coefficient of the year variable. To analyze whether the time trend effect varied across different subgroups, the interaction terms between year and all other covariates were also included into the regression model.

All analyses were conducted by incorporating the appropriate sampling weights to account for **different** selection probabilities from the sampling design and to adjust for survey nonresponse. SAS 9.4 (SAS Institute, Cary, NC) and Stata SE14 (Stata Corp, College Station, TX) procedures which take into consideration the

complex survey design in the NHIS were used to conduct analyses. Adjusted odds ratios (AOR) and 95% confidence intervals (CI) were estimated from the multivariate regression model. The criterion for statistically significant coefficient values was a two-tailed p-value < 0.05.

### **Study Sample**

Among 123,399 adults from the pooled NHIS data, 26,825 were current cigarette smokers. Excluding those with missing values for number of days smoked in the past 30 days (N=377) yielded a sample of 26,448 current smokers, including 21,929 daily smokers, 2,200 frequent nondaily smokers, and 2,319 infrequent nondaily smokers. The final study sample for multivariate multinomial logistic regression analyses included 23,677 current smokers after further excluding 2,771 respondents (10.5% of 26,448 current smokers) with missing values for education, marital status, binge drinking, quit attempts, cigar use, snuff use, or chewing tobacco use.

### **Sensitivity Analysis**

A sensitivity analysis was conducted to assess whether the regression results were sensitive to the exclusion of the 2,771 respondents with missing values. We imputed the missing values for education, marital status, binge drinking, quit attempts, cigar use, snuff use, and chewing tobacco use with multiple imputation using the chained equations (MICE) approach. Including the 2,771 respondents with imputed missing values, we re-estimated the multinomial logistic regression model. We compared the results with and without the imputed values as a sensitivity analysis.

## **RESULTS**

Among 26,448 current smokers, 56.9% were aged 35-64, more than half (53.5%) were male; three-quarters (76.3%) were non-Hispanic White, 21.3% had less than high school education, 13.4% were poor, almost half (47.2%) were married, over one-third (38.0%) lived in the South, 34.7% were binge drinkers, 43.5% had attempted quitting in the past 12 months, 5.0% were current cigar smokers, 2.1% were current snuff users, and 1.5% were current chewing tobacco users (Table 1).

### **Prevalence of Infrequent and Frequent Smoking among Current Smokers**

Among all current cigarette smokers, 8.3% were infrequent smokers, 8.1% were frequent smokers, and 83.6% were daily smokers (Table 1). These prevalence rates varied by year, all socio-demographic characteristics, binge drinking, quit attempts in the past 12 months, snuff use and chewing tobacco use but not by cigar use. The prevalence rates of infrequent smoking among current smokers were 7.3%, 7.6%, 8.5% and 9.9% in 1998, 2000, 2005, and 2010, respectively, whereas the prevalence rates of frequent smoking among smokers were 7.9%, 7.4%, 8.0% and 9.2% for the corresponding years.

### **Correlates of Infrequent and Frequent Smoking vs. Daily Smoking**

Although we considered the interaction terms between year and all other covariates in the model, only the interaction between year and race/ethnicity was statistically significant. Therefore, we only presented the results from the multivariate multinomial logistic regression model which included all covariates plus the interaction between year and race/ethnicity as shown in Table 2.

The prevalence of infrequent vs. daily smoking increased over time, but this increasing trend was smaller among non-Hispanic Blacks (AOR=0.96; 95% CI: 0.93, 1.00) compared to non-Hispanic Whites. The adjusted odds of infrequent vs. daily smoking were significantly lower among current smokers aged 35+

compared to young adults aged 18-34, and smokers living with partners (AOR=0.68; 95% CI: 0.56, 0.84) or those who were single/divorced/widowed (AOR=0.84; 95% CI: 0.73, 0.98) compared to married smokers. The odds were significantly higher among Hispanics (AOR=4.52; 95% CI: 3.57, 5.72) and non-Hispanic Blacks (AOR=2.36; 95% CI: 1.85, 3.01) than non-Hispanic Whites, those who had at least some college education than high school graduates, the high-income group (AOR=1.47; 95% CI: 1.22, 1.77) than the poor-income group, those living in the West (AOR=1.38; 95% CI: 1.14, 1.67) than those living in the Northeast, binge drinkers (AOR=1.25; 95% CI: 1.10, 1.43) than non-binge-drinkers, and those with quit attempts in the past 12 months (AOR=1.23; 95% CI: 1.10, 1.38) than those without. Compared to non-current snuff users, current snuff users were 2.39 times as likely to be infrequent smokers as daily smokers.

The prevalence of frequent vs. daily smoking did not significantly change over time. The adjusted odds of frequent vs. daily smoking were significantly lower among current smokers aged 35+ compared to young adults aged 18-34, and smokers living in the South (AOR=0.81; 95% CI: 0.69, 0.96) than those living in the Northeast. The odds were significantly higher among Hispanics (AOR=2.41; 95% CI: 1.86, 3.13) and non-Hispanic Blacks (AOR=1.79; 95% CI: 1.35, 2.36) than non-Hispanic Whites, those who had at least some college education than high school graduates, the high-income group (AOR=1.29; 95% CI: 1.05, 1.57) than the poor-income group, those who were never married (AOR=1.27; 95% CI: 1.10, 1.47) than those who were married, binge drinkers (AOR=1.23; 95% CI: 1.09, 1.39) than non-binge-drinkers, and those with quit attempts in the past 12 months (AOR=2.10; 95% CI: 1.87, 2.37) than those without. There was no significant association of cigar, snuff, or chewing tobacco use with frequent vs. daily smoking.

### **Correlates of Infrequent vs. Frequent Smoking**

The Wald chi-square test results in Table 2 show that among all current cigarette smokers, the adjusted odds of infrequent vs. frequent smoking were significantly different between Hispanics and non-Hispanic Whites ( $p < 0.01$ ), between college graduates and high school graduates ( $p < 0.01$ ), between those who were single/divorced/widowed ( $p < 0.01$ ) or never married ( $p = 0.03$ ) and those who were married, between those living in the West and those living in the Northeast ( $p = 0.03$ ), between those with quit attempts in the past 12 months and those without ( $p < 0.01$ ), and between current users of snuff and non-current users of snuff ( $p < 0.01$ ).

### **Sensitivity Analysis**

The results from the multinomial logistic regression model with imputed data were comparable to the main results presented in Table 2, indicating that our main results (the coefficient estimates and standard errors) are not sensitive to the exclusion of respondents with missing values.

### **DISCUSSION**

This study categorized current smokers by smoking frequency into three groups: infrequent nondaily, frequent nondaily and daily smokers. We found that during 1998-2010, the majority of current smokers were daily smokers (83.6%); 8.3% of current smokers were infrequent nondaily smokers and 8.1% of current smokers were frequent nondaily smokers. Previous studies have focused on young adults and examined infrequent and frequent nondaily smokers' correlates with limited socio-demographic characteristics.<sup>19,20</sup> OTP use was included in one study without considering specific products.<sup>19</sup> We extend these two previous studies by not only including all U.S. adults, but by investigating the association of infrequent, frequent, and daily smoking with more socio-demographic characteristics and with specific other tobacco products (cigar, snuff and chewing tobacco). Our finding that gender was not a significant correlate is consistent with these two

studies.<sup>19,20</sup> However, contrary to their finding that infrequent smokers were not different from frequent smokers regardless of whether they enrolled in college or not,<sup>20</sup> we found that infrequent smokers differed from frequent and daily smokers by education level. This difference may be due to the inclusion of different age groups (all adults aged 18+ vs. young adults aged 18-22) and geographic areas (all 50 states vs. five upper Midwestern states), and different categories for education (from less than high school to postgraduate vs. college enrollment or not). Instead of only examining a limited set of socio-demographic covariates,<sup>19,20</sup> we also examined the effect of race/ethnicity, poverty status, marital status, and region. We found that infrequent and frequent smokers not only differed from daily smokers on most of these characteristics but also they differed from each other. Our findings provide further evidence that nondaily smokers should not be treated as a homogeneous group because of their distinct socio-demographic profiles.-

We found that the prevalence of infrequent but not frequent vs. daily smoking increased during 1998-2010. A previous study categorized nondaily smokers into nine subgroups according to both smoking frequency and CPD using the 2000-2012 NHIS data, and found that the prevalence of certain nondaily smoking subgroups showed different trends over time.<sup>34</sup> Our results are not directly comparable with their results due to different ways of categorizing nondaily smokers (2 groups vs. 9 groups) and slightly different time periods (1998-2010 vs. 2000-2012). However, both studies indicate that in the last decade, there was a temporal trend in the prevalence of certain nondaily smoking subgroups. This may be due to changes in tobacco policies and new tobacco products in the marketplace in the last decade. These changes could lead to different smoking trajectories among infrequent, frequent, and daily smokers, and between non-current and current smokers.

The NHIS did not include questions which allow us to assess transitions between these groups. We also found that the prevalence of infrequent vs. daily smoking among current smokers increased during 1998-2010 but this increasing trend was smaller for non-Hispanic Black smokers compared to non-Hispanic White smokers.

This could be because tobacco policies had different impacts on different racial/ethnic groups or because of tobacco industry's different marketing to different racial/ethnic groups.

Our result indicating that binge drinkers had higher odds of being infrequent **and frequent** vs. daily smokers is consistent with studies<sup>4,19,35-37</sup> reporting that compared to daily smokers, nondaily smokers were more likely to be binge drinkers.

We found that among current smokers, those who had quit attempts in the past year were more likely to be infrequent or frequent smokers vs. daily smokers, but less likely to be infrequent vs. frequent smokers. This finding is partially consistent with a study<sup>34</sup> showing that among nondaily smokers, those with lowest smoking frequency and lowest CPD had the lowest odds of past-year quit attempts compared to other subgroups stratified by smoking frequency and CPD.

**Regarding** OTP use, a previous study<sup>19</sup> examined the association between any OTP use and cigarette smoking frequency without separating OTP by product type, whereas our study investigated the association of cigarette smoking frequency with snuff, cigar and chewing tobacco use. Thus, our results cannot be compared directly. Our finding suggests that infrequent smokers might compensate for less frequent cigarette smoking by using snuff. **P**revious studies have concluded that nondaily smokers were more likely to use smokeless tobacco or snuff than daily smokers,<sup>9,27-29,31</sup> our study found additional evidence that the snuff use also differed between infrequent and frequent nondaily smokers. Therefore, it is important to understand not only the patterns of OTP use among cigarette smokers, but also how the OTP use patterns differ among different groups of cigarette smokers with various smoking frequencies, especially among nondaily smokers.

This study has several limitations. First, smoking status and all other measures in our study were self-reported and thus are subject to recall bias and social desirability bias. However, according to Caraballo *et al.*,<sup>38</sup> self-reported smoking status is a validated measure of smoking. Second, small sample sizes precluded us from differentiating daily and nondaily OTP users. Thus we were unable to assess how the frequency of OTP use interacts with the frequency of cigarette smoking. Third, we found that current users of snuff were more likely to be infrequent smokers than daily smokers. However, due to the fact that current snuff users comprised only about 2% of current smokers, inferences that can be drawn from these results are limited. Fourth, we were not able to examine the use of hookah, e-cigarettes and newer tobacco products and were not able to differentiate different types of cigars (e.g. little cigars, cigarillos, and large cigars), or different types of snuff (e.g. dry snuff, moist snuff, and snus -a type of moist snuff) due to data limitations. Fifth, because the NHIS data did not allow us to use different thresholds of binge drinking for males and females, we used  $\geq 5$  drinks for both females and males. This is different from the [Centers for Disease Control and Prevention](#) definition of binge drinking ( $\geq 5$  for males, and  $\geq 4$  drinks for females). Finally, the most recent NHIS data available was from the 2010 survey when we conducted this study. Therefore, this study could not capture potential changes in tobacco use patterns due to tobacco policy changes after 2010 and the implementation of the Family Smoking Prevention and Tobacco Control Act on June 22, 2009, which granted the Food and Drug Administration the authority to regulate tobacco products.

In conclusion, we found that infrequent smokers differed from daily smokers and from frequent smokers in socio-demographic characteristics, quit attempts in the past 12 months, and snuff use. The heterogeneity of nondaily smokers should be taken into account in developing tobacco control policies and in tailoring tobacco cessation programs. For example, because current users of snuff were more likely to be infrequent smokers, cessation programs need to be designed to motivate smokers to not only quit smoking cigarettes but also to



quit using snuff. We also found that Hispanics and college students are more likely to be infrequent smokers vs. frequent smokers, and that infrequent smokers have fewer quit attempts than frequent smokers. Therefore, cessation programs designed for Hispanics or college students should be designed that consider cessation assistance tailored to motivate infrequent smokers to quit.

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## **DECLARATION OF INTERESTS**

None declared.

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**Table 1: Sample distribution of current cigarette smokers, and prevalence of infrequent, frequent, and daily smoking among current cigarette smokers by socio-demographic characteristics, binge drinking, quit attempts in past 12 months, and other tobacco product use**

		Study Sample		Prevalence						Chi-square
				Current Smokers		Infrequent Smoking		Frequent Smoking		Daily Smoking
		N	Col%	N-	Row %	N-	Row %	N-	Row %	
		26,448	100.0	2,319	8.3	2,200	8.1	21,929	83.6	
Year	1998	7,634	25.8	600	7.3	613	7.9	6,421	84.8	<.001
	2000	7,316	25.4	605	7.6	579	7.4	6,132	85.1	
	2005	6,407	24.6	601	8.5	529	8.0	5,277	83.5	
	2010	5,091	24.2	513	9.9	479	9.2	4,099	81.0	
Age	18-34	8,732	36.0	1,051	10.9	962	6.8	6,719	78.3	<.001
	35-64	15,345	56.9	1,120	6.8	1,103	5.6	13,122	86.4	
	65+	2,371	7.2	148	6.3	135	8.3	2,088	88.1	
Gender	Male	13,166	53.5	1,234	8.7	1,104	8.3	10,828	83.0	0.023
	Female	13,282	46.5	1,085	7.7	1,096	7.9	11,101	84.4	
Race/Ethnicity	Hispanic	3,496	8.8	654	19.9	408	12.2	2,434	68.0	<.001
	Non-Hispanic White	18,134	76.3	1,242	6.9	1,333	7.2	15,559	85.9	
	Non-Hispanic Black	3,984	11.6	344	8.5	385	10.6	3,255	80.9	
	Non-Hispanic Asian	462	1.8	54	11.8	38	9.4	370	78.8	
	Non-Hispanic Other	372	1.5	25	6.3	36	8.1	311	85.6	
Education	Less Than High School	6,042	21.3	478	6.6	409	6.7	5,155	86.7	<.001
	High School	9,306	37.2	592	6.0	613	6.3	8,101	87.7	
	Some College	7,798	29.3	724	9.1	758	9.6	6,316	81.3	
	College	2,310	8.6	373	16.4	293	12.3	1,644	71.3	
	Postgraduate	816	2.9	142	18.0	123	15.1	551	66.9	
	Missing	176	0.7	10	5.8	4	2.3	162	91.9	
Poverty Status	Poor	4,522	13.4	377	7.2	376	7.9	3,769	84.9	<.001
	Low Income	5,084	18.1	414	7.4	424	8.1	4,246	84.5	
	Moderate Income	6,956	27.5	596	8.0	561	7.5	5,799	84.5	
	High Income	5,380	23.3	581	10.6	506	9.3	4,293	80.2	
	Unknown	4,506	17.6	351	7.2	333	7.6	3,822	85.1	
Marital Status	Married	10,089	47.2	913	8.4	740	7.0	8,436	84.6	<.001
	Single/Divorced/Widowed	7,583	19.5	503	6.4	564	7.1	6,516	86.5	
	Never Married	6,488	22.5	732	10.3	729	11.5	5,027	78.2	
	Living with Partner	2,216	10.7	166	7.0	164	7.5	1,886	85.5	
	Missing	72	0.2	5	7.2	3	2.5	64	90.3	
Region	Northeast	4,519	17.4	342	7.4	397	9.0	3,780	83.6	<.001
	Midwest	6,846	27.6	542	7.7	547	7.9	5,757	84.4	
	South	9,962	38.0	827	7.5	782	7.3	8,353	85.1	
	West	5,121	16.9	608	11.8	474	9.3	4,039	79.0	
Binge Drinking	Yes	8830	34.7	983	10.3	883	9.7	6964	80.0	<.001
	No	16545	61.2	1,266	7.2	1,247	7.3	14,032	85.5	
	Missing	1073	4.1	70	6.7	70	6.0	933	87.3	
Quit Attempt in Past 12 Months	Yes	11,464	43.5	1,098	9.1	1,335	11.4	9,031	79.5	<.001
	No	14,930	56.3	1,215	7.6	864	5.5	12,851	86.9	
	Missing	54	0.2	6	10.1	1	9.5	47	80.5	
Cigar Use	Current	1,194	5.0	116	9.3	79	6.3	999	84.4	0.096
	Non-Current	23,558	88.2	2,015	8.1	1,963	8.1	19,580	83.8	
	Missing	1,696	6.9	188	9.8	158	9.5	1,350	80.7	
Snuff Use	Current	426	2.1	71	16.4	43	8.5	312	75.2	<.001
	Non-Current	25,094	94.2	2,153	8.1	2,078	8.1	20,863	83.9	
	Missing	928	3.7	95	9.0	79	9.1	754	81.9	
Chew Use	Current	317	1.5	39	12.6	28	7.0	250	80.4	0.043
	Non-Current	25,204	94.8	2,183	8.2	2,092	8.1	20,929	83.8	
	Missing	927	3.7	97	9.3	80	9.6	750	81.1	

Note: % is weighted percentage. Col % refers to sample distribution; Row % refers to prevalence.

**Table 2: Multinomial logistic regression analysis of correlates associated with infrequent and frequent smoking vs. daily smoking among current cigarette smokers and Wald test between infrequent and frequent smoking (N=23,677)**



		Infrequent Smoking		Frequent Smoking		Wald Chi-square Test to Compare Infrequent vs. Frequent Smoking
		Reference Group: Daily smoking				
		AOR (95%CI)	P value	AOR (95%CI)	P value	
Year (continuous )		<b>1.03 (1.01, 1.04)</b>	<b>0.002</b>	1.02 (1.00, 1.04)	0.051	<b>0.395</b>
Age	18-34	REF		REF		
	35-64	<b>0.58 (0.51, 0.66)</b>	<b>&lt;.001</b>	<b>0.61 (0.54, 0.70)</b>	<b>&lt;.001</b>	<b>0.326</b>
	65+	<b>0.69 (0.54, 0.87)</b>	<b>0.002</b>	<b>0.58 (0.46, 0.74)</b>	<b>&lt;.001</b>	<b>0.537</b>
Gender	Male	<b>0.92 (0.82, 1.03)</b>	<b>0.160</b>	<b>0.99 (0.88, 1.12)</b>	<b>0.852</b>	<b>0.374</b>
	Female	REF		REF		
Race/Ethnicity	Hispanic	<b>4.52 (3.57, 5.72)</b>	<b>&lt;.001</b>	<b>2.41 (1.86, 3.13)</b>	<b>&lt;.001</b>	<b>&lt;.001</b>
	Non-Hispanic White	REF		REF		
	Non-Hispanic Black	<b>2.36 (1.85, 3.01)</b>	<b>&lt;.001</b>	<b>1.79 (1.35, 2.36)</b>	<b>&lt;.001</b>	<b>0.097</b>
	Non-Hispanic Asian	1.24 (0.50, 3.06)	0.640	2.50 (0.76, 8.22)	0.131	0.304
	Non-Hispanic Other	<b>1.51 (0.80, 2.85)</b>	<b>0.202</b>	<b>2.08 (1.08, 4.03)</b>	<b>0.030</b>	<b>0.468</b>
Education	Less Than High School	<b>0.92 (0.77, 1.10)</b>	<b>0.348</b>	<b>0.99 (0.83, 1.18)</b>	<b>0.881</b>	<b>0.564</b>
	High School	REF		REF		
	Some College	<b>1.51 (1.31, 1.74)</b>	<b>&lt;.001</b>	<b>1.47 (1.28, 1.69)</b>	<b>&lt;.001</b>	<b>0.806</b>
	College	<b>3.51 (2.95, 4.16)</b>	<b>&lt;.001</b>	<b>2.28 (1.90, 2.73)</b>	<b>&lt;.001</b>	<b>&lt;.001</b>
	Postgraduate	<b>4.05 (3.08, 5.33)</b>	<b>&lt;.001</b>	<b>3.36 (2.56, 4.40)</b>	<b>&lt;.001</b>	<b>0.311</b>
Poverty Status	Poor	REF		REF		
	Low Income	1.06 (0.87, 1.29)	0.565	1.14 (0.93, 1.40)	0.197	0.554
	Moderate Income	1.15 (0.97, 1.36)	0.116	1.09 (0.90, 1.33)	0.389	0.686
	High Income	<b>1.47 (1.22, 1.77)</b>	<b>&lt;.001</b>	<b>1.29 (1.05, 1.57)</b>	<b>0.015</b>	<b>0.308</b>
	Unknown	1.15 (0.93, 1.42)	0.185	<b>1.24 (1.01, 1.53)</b>	<b>0.041</b>	<b>0.599</b>
Marital Status	Married	REF		REF		
	Single/Divorced/Widowed	<b>0.84 (0.73, 0.98)</b>	<b>0.029</b>	1.11 (0.95, 1.29)	0.200	<b>0.009</b>
	Never Married	1.01 (0.86, 1.18)	0.934	<b>1.27 (1.10, 1.47)</b>	<b>0.001</b>	<b>0.028</b>
	Living with Partner	<b>0.68 (0.56, 0.84)</b>	<b>&lt;.001</b>	<b>0.87 (0.71, 1.07)</b>	<b>0.198</b>	<b>0.083</b>
Region	Northeast	REF		REF		
	Midwest	1.08 (0.89, 1.31)	0.453	0.97 (0.80, 1.17)	0.730	0.387
	South	0.99 (0.82, 1.19)	0.897	<b>0.81 (0.69, 0.96)</b>	<b>0.017</b>	<b>0.103</b>
	West	<b>1.38 (1.14, 1.67)</b>	<b>0.001</b>	1.04 (0.85, 1.26)	0.731	<b>0.029</b>
Binge Drinking	Yes	<b>1.25 (1.10, 1.43)</b>	<b>0.001</b>	<b>1.23 (1.09, 1.39)</b>	<b>0.001</b>	<b>0.815</b>
	No	REF		REF		
Quit Attempt in Past 12 Months	Yes	<b>1.23 (1.10, 1.38)</b>	<b>0.001</b>	<b>2.10 (1.87, 2.37)</b>	<b>&lt;.001</b>	<b>&lt;.001</b>
	No	REF		REF		
Cigar Use	Current	1.04 (0.80, 1.34)	0.787	0.75 (0.55, 1.01)	0.055	0.087
	Non-Current	REF		REF		
Snuff Use	Current	<b>2.39 (1.64, 3.47)</b>	<b>&lt;.001</b>	1.09 (0.67, 1.76)	0.726	<b>0.006</b>
	Non-Current	REF		REF		
Chewing Tobacco Use	Current	<b>1.22 (0.72, 2.08)</b>	<b>0.465</b>	1.07 (0.63, 1.81)	0.809	<b>0.691</b>
	Non-Current	REF		REF		
Race*Year	Hispanic*Year	1.00 (0.97, 1.03)	0.951	1.00(0.96, 1.03)	0.865	0.846
	Non-Hispanic White*Year	REF		REF		
	Non-Hispanic Black*Year	<b>0.96 (0.93, 1.00)</b>	<b>0.030</b>	1.00 (0.97, 1.04)	0.995	0.099
	Non-Hispanic Asian*Year	1.01 (0.92, 1.11)	0.785	0.89 (0.77, 1.02)	0.083	0.085
	Non-Hispanic Other*Year	<b>0.91 (0.82, 1.01)</b>	<b>0.082</b>	<b>0.86 (0.76, 0.98)</b>	<b>0.021</b>	<b>0.493</b>

Note: Bold results are statistically significant at P-value<.05; AOR = adjusted odds ratio; CI = confidence interval