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Menthol cigarettes and smoking cessation among racial/ethnic groups in the United States

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Abstract

Aim—To examine the association between smoking mentholated cigarettes and smoking cessation, separately for different racial/ethnic groups.

Design—Secondary data analysis of the 2003 and 2006–07 Tobacco Use Supplements to the Current Population Survey.

Setting—United States.

Participants—African American, Asian American/Pacific Islander, Hispanic/Latino, Native American, non-Hispanic white adults.

Measurements—Examined relations between the use of mentholated cigarettes and measures of smoking cessation.

Findings—Among African Americans (ORadj = 1.62, 95% CI: 1.35–1.95) and Hispanics/Latinos (ORadj = 1.21, 95% CI: 1.00–1.47), those who currently smoked mentholated cigarettes were more likely be seriously considering quitting in the next six months than were non-menthol smokers, after adjusting for sociodemographic factors. African Americans (ORadj = 1.87, 95% CI: 1.60– 2.19) and Hispanics/Latinos (ORadj = 1.34, 95% CI: 1.11–1.62) who smoked mentholated cigarettes were also significantly more likely to have a positive estimation of successfully quitting in the next six months compared to non-menthol smokers. These associations were not found among Asian Americans/Pacific Islanders, Native Americans/Alaska Natives and Non-Hispanic Whites. Among former smokers, across racial/ethnic groups, those who smoked mentholated cigarettes (vs. non-menthols) were significantly less likely to have successfully quit for at least six months: African Americans (ORadj = 0.23, 95% CI: 0.17–0.31), Asian Americans/Pacific

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Declarations of interest
None.

Islanders (ORadj = 0.22, 95% CI: 0.11–0.45), Hispanics/Latinos (ORadj = 0.48, 95% CI: 0.34–0.69) and Non-Hispanic Whites (ORadj = 0.28, 95% CI: 0.25–0.33).

Conclusion—Across race/ethnic groups, those who used to regularly smoke mentholated cigarettes were less likely to have experienced long-term quitting success. Cessation programs should consider the type of cigarette typically smoked by participants, particularly menthols.

Keywords

Cessation; race/ethnicity

INTRODUCTION

Although racial/ethnic minorities are more likely to be light and intermittent smokers than non-Hispanic whites, they are less likely to quit smoking and more likely to suffer disproportionately from tobacco-related diseases [1–8]. This is particularly true among African Americans [7,9,10]. Approximately 70% of African American adult smokers choose mentholated cigarettes, compared to fewer than 30% of other racial/ethnic groups [11–13]. This has led to speculation that smoking mentholated cigarettes enhances the harmful effects of cigarette smoking and makes it more difficult to quit smoking.

In recent years, research has begun to emerge that examines in greater detail the effect of smoking mentholated cigarettes on smoking cessation. The Community Intervention Trial for Smoking Cessation (COMMIT) found that the use of mentholated cigarettes was not associated with quitting [14]. However, in contrast to this finding, in a cross-sectional survey of African American smokers at an inner-city health center, Okuyemi and colleagues found that the use of mentholated cigarettes was associated with lower smoking cessation rates among African American light smokers. In addition, they found that time since the most recent quit attempt was shorter among those who smoked mentholated cigarettes, suggesting that they were more likely to have made a recent quit attempt [9]. Pletcher and colleagues prospectively measured cumulative exposure to menthol and non-menthol cigarettes and smoking cessation behavior among African American and European American smokers in the Coronary Artery Risk Development in Young Adults (CARDIA) Study. After adjusting for ethnicity, demographics and social factors, their findings suggested a trend towards greater difficulty in quitting smoking among those who smoked mentholated cigarettes [15]. In an analysis of the 2005 National Health Interview Survey (NHIS), Gundersen and colleagues found that menthol smoking led to poorer cessation outcomes for a combined group of African American and Hispanic/Latino smokers. Specifically, menthol smokers in these racial/ethnic groups were significantly less likely to have quit smoking compared to those who smoked non-menthol cigarettes. In contrast, among non-Hispanic whites, menthol smokers were more likely to be former smokers than those who did not smoke menthol cigarettes [11]. A cohort study of individuals participating in a smoking cessation service found that despite smoking fewer cigarettes per day, African Americans and Hispanics/ Latinos who smoked mentholated cigarettes experienced less success in quitting compared with non-menthol smokers [16].

Research on the effect of mentholated cigarettes on smoking cessation has focused primarily on African American populations, due in part to the very high proportion of African American smokers who smoke menthol cigarettes. Relatively little such research has been published for other racial/ethnic groups, especially Asian Americans/Pacific Islanders, Hispanics/Latinos and Native Americans/Alaska Natives. We are specifically interested in quitting intentions and self-assessment of future quitting success among current smokers, and long-term successful cessation among former smokers. While these factors have been shown to be associated with future quitting success (as components of the Stages of Change Model/Quitting Continuum) [17–20], we are interested in how these factors are affected by smoking mentholated cigarettes across racial/ethnic groups. Furthermore, there is a dearth of published research based on representative population data at the national level that examines the association of smoking mentholated cigarettes with smoking cessation across racial/ethnic groups [11].

The 2003 and 2006–07 Tobacco Use Supplements to the Current Population Survey (TUS CPS) included questions on smoking mentholated cigarettes and provide invaluable data for the examination of how menthol cigarette smoking affects various aspects of smoking cessation at the national level. We conducted a secondary data analysis of the 2003 and 2006–07 TUS CPS to examine these issues across racial/ethnic groups among adults in the United States. Findings from this report can provide insight into the association of smoking mentholated cigarettes with smoking cessation, particularly across specific racial/ethnic groups. Results may also help to guide future efforts to reduce racial/ethnic disparities in smoking cessation and tobacco-related diseases.

METHODS

Data source

Tobacco use supplements (TUS) are added periodically to the national Current Population Survey (CPS), which was the source of the data for this analysis. Tobacco use supplements of interest were included with CPS surveys in February 2003, June 2003, November 2003, May 2006, August 2006 and January 2007. The TUS CPS are large, continuous, federally sponsored household surveys (over 56 000 households/month) conducted by the US Bureau of the Census primarily to monitor labor force indicators for the civilian non-institutionalized US population aged 15 years and older. The complete CPS methodology is published elsewhere [21]. Briefly, households were selected monthly using a multi-stage stratified sample of housing units from lists of addresses obtained from the 2000 Decennial Census of Population and Housing. Households were visited initially to administer the main survey, although residents could also choose to take the survey by telephone. The CPS has a response rate of over 92%. Surveys included both proxy and self-response data, with a self-response rate of over 61%. Only self-report data were used in this report. The TUS was developed by the National Cancer Institute staff and pre-tested by trained Bureau of the Census interviewers prior to implementation.

We considered the population between ages 20 and 65 years at the time of the survey. We focused on this age group because smoking patterns are typically not established fully before age 20. This is more likely to be the case among African American/black and Asian

American/ Pacific Islander smokers, who may be more likely to initiate as older adolescents and young adults [22–24]. We also selected age 65 as a cut-off to due to differential mortality rates across race/ethnic groups and varying levels of education past this age [25,26].

Demographics and smoking-related measures

Demographic measures—Demographic measures included age group (20–34 years, 35–50 years, 51–65 years), gender, level of education (less than high school, high school graduate, some college and college graduate) and self-reported race/ ethnicity. We used the US Census categories that defined Hispanic/Latino ethnicity and then identified the respondent's race as non-Hispanic white, African American/ black, Asian American/Pacific Islander and American Indian/Native American.

Smoking behaviors and quit attempts—TUS CPS survey respondents were asked: 'Have you ever smoked 100 cigarettes?', and respondents were considered ever smokers if they answered yes to this question. Ever smokers were further asked: 'Do you now smoke every day, some days, or not at all?'. Those who reported smoking every day or some days were considered current smokers. Those who reported smoking every day were considered daily smokers and those who smoked on some days were considered non-daily or intermittent smokers. All current smokers were asked how soon they typically smoked their first cigarette after waking up. Those who reported smoking within 30 minutes of waking up were of interest and considered to have a stronger dependence on nicotine compared to those who smoked their first cigarette later in the day [27].

Current smokers were asked if they made an attempt to quit in the past 12 months, and, if so, the length of their longest quit attempt and the length of their last quit attempt. Former smokers were defined as ever smokers who reported not smoking at the time of the survey. Among former smokers, successful smoking cessation/ long-term quitting was defined as being quit for at least 6 months at the time of the survey. Having quit smoking for at least 6 months at the time of the survey is an accepted marker of long-term, successful smoking cessation [28].

Quitting intentions and positive estimation of quitting success in the next 6 months—Current smokers were asked if they were seriously considering quitting smoking within the next 6 months (yes/ no). Current smokers were also asked to assess how likely they thought they would succeed in quitting smoking altogether in the next 6 months. Response choices included the following: not at all, a little likely, somewhat likely or very likely. We contrasted those who thought they were somewhat likely or very likely to succeed (positive estimation) with others who were less favorable in their estimation.

Menthol cigarettes—Current daily and non-daily smokers were asked about their usual brand of cigarettes. Response choices included menthol, non-menthol or no usual brand. Former smokers were asked to think back to the year before they quit smoking and whether they usually smoked menthols, non-menthols or no usual brand during that time. Those who

smoked menthols were contrasted with those who smoked non-menthols. Those who reported having no usual brand were excluded from statistical modeling analyses.

Use of other tobacco products—All respondents were asked if they had ever used any other tobacco products. This included pipes, cigars, chewing tobacco and snuff. Those who reported doing so were further asked if they currently smoked other tobacco products and those who responded in the affirmative were considered current users of other tobacco products.

Statistical methods

All estimates were weighted by TUS CPS survey weights, which account for selection probabilities from the sampling design and adjust for survey non-response [21,29]. All estimates were computed in SAS-callable SUDAAN version 9.0.1, and variance estimates were computed using the published TUS CPS replicate weights with Fay's balanced repeated replication [21,30]. Population prevalence rates were computed as weighted proportions using PROC CROSSTABS. Estimates are presented with 95% confidence intervals (CIs); non-overlapping confidence intervals are taken as a measure of statistical significance. Multivariate weighted logistic regressions were computed using PROC RLOGIST. Logistic regression models were fitted for binary outcomes, including seriously considering quitting smoking within the next 6 months (Table 2), positive estimation of quitting success in the next 6 months (Table 3) and successful cessation of greater than 6 months (Table 4). Models based using current smokers (Tables 2 and 3) adjusted for daily/non-daily smoking, smoking within 30 minutes of waking, current use of other tobacco products and interest in quitting smoking. The model based using former smokers (Table 4) adjusted for current use of other tobacco products. All logistic regression models adjusted for age group, education and gender.

RESULTS

Socio-demographic differences

A smaller proportion of African American respondents were male (45.2% ± 0.1%) compared to other racial/ethnic groups (Table 1). There were larger proportions of Asian American/Pacific Islander (54.4% ± 1.3%) and non-Hispanic white (33.3% ± 0.4%) respondents who were college graduates. Larger proportions of Native Americans/Alaska Natives (50.7% ± 3.9%) and non-Hispanic whites (44.0% ± 0.3%) were ever smokers compared to African Americans (30.9% ± 0.7%), Asian Americans/Pacific Islanders (21.0% ± 1.0%) and Hispanics/Latinos (24.6% ± 0.6%).

A much larger proportion of African American smokers reported usually smoking mentholated cigarettes (69.8% ± 1.6%) compared to only about 20–25% for other racial/ethnic groups. Approximately 41.9% ± 1.9% of African American menthol smokers reported being very interested in quitting compared to only 29.9% ± 2.7% of non-menthol smokers. This disparity was not evident among other racial/ethnic groups. Larger proportions of African Americans (65.6% ± 1.2%) and Native Americans/Alaska Natives (68.0% ± 3.6%) reported not making any quit attempts in the past year compared to other

groups. This corresponded with smaller proportions reporting being quit for at least 6 months (African Americans: 31.4% ± 1.2%; Native Americans/Alaska Natives: 27.5% ± 3.2%).

Comparing menthol smokers across racial/ethnic groups, a larger proportion of African American respondents (50.2% ± 1.8%) were seriously considering quitting in the next 6 months than the other groups. This difference across racial/ethnic groups was not evident among those who did not smoke mentholated cigarettes. Among African Americans, a larger proportion of those who smoked menthol cigarettes were seriously considering quitting in the next 6 months, compared to those who did not smoke menthol cigarettes regularly. Among both African Americans and Hispanics/Latinos, a larger proportion of those who smoked menthol cigarettes thought they would probably succeed in quitting within 6 months, compared to those who did not smoke menthol cigarettes (African Americans: 58.0% ± 1.8% versus 42.0% ± 3.0%; Hispanics/Latinos: 56.5% ± 3.5% versus 50.2% ± 2.2%).

Seriously considering quitting smoking in the next 6 months

Table 2 presents results from adjusted logistic regression models, stratified by racial/ethnic group, with outcome a ‘yes’ answer to the question of whether a respondent was seriously considering quitting smoking within the next 6 months. In general, those with lower education level (relative to higher education levels), daily smokers (compared to non-daily smokers), and those who reported smoking within 30 minutes of waking (versus those who did not) were less likely to be considering quitting in the next 6 months; those very interested in quitting were more likely to be considering quitting in the next 6 months. African Americans and Hispanics/Latinos who smoked mentholated cigarettes were significantly more likely to be seriously considering quitting in the next 6 months compared to those who smoked nonmentholated cigarettes [African Americans: odds ratio (OR) = 1.62, 95% CI: 1.35–1.95; Hispanics/Latinos: OR = 1.21, 95% CI: 1.00–1.47]. No suggestion of a similar relationship was found among Asian Americans/ Pacific Islanders, Native Americans/Alaska Natives or non-Hispanic whites.

Positive estimation of quitting smoking successfully in the next 6 months

Adjusted logistic regression models stratified by racial/ ethnic group and with outcome positive estimation of quitting smoking successfully in the next 6 months (somewhat likely or very likely) are presented in Table 3. In general, males and those who were very interested in quitting were significantly more likely to have a positive estimation of quitting successfully in the next 6 months compared to respective groups. Younger age groups of non-Hispanic whites were also more likely to have a positive estimation of quitting success compared to those aged 51–65 years. Daily smokers and those who reported smoking within 30 minutes of waking were less likely to be positive in their estimation of quitting successfully in the next 6 months compared to respective groups. African Americans and Hispanics/Latinos who smoked mentholated cigarettes were significantly more likely to have a positive estimation of quitting successfully in the next 6 months compared to those who smoked nonmentholated cigarettes (African Americans: OR = 1.87, 95% CI: 1.60–2.19;

Hispanics/Latinos: OR = 1.34, 95% CI: 1.11–1.62). This was not found among Asian Americans/Pacific Islanders, Native Americans/Alaska Natives and non-Hispanic whites.

Successful smoking cessation of greater than 6 months

Adjusted logistic regression models predicting successful smoking cessation (cessation of greater than 6 months) among former smokers, stratified by racial/ethnic group, are presented in Table 4. Those who smoked mentholated cigarettes were significantly less likely to have quit successfully for at least 6 months, for all racial/ethnic groups except Native Americans/Alaska Natives (African Americans: OR = 0.23, 95% CI: 0.17–0.31; Asian Americans/ Pacific Islanders: OR = 0.22, 95% CI: 0.11–0.45; Hispanics/Latinos: OR = 0.48, 95% CI: 0.34–0.69; Native Americans/Alaska Natives: OR = 0.49, 95% CI: 0.14–1.71; non-Hispanic whites: OR = 0.28, 95% CI: 0.25–0.33). African Americans who had quit success- fully for at least 6 months were more than twice as likely to be current users of other tobacco products (OR = 2.23, 95% CI: 1.10–4.53) compared to those who did not currently use other tobacco products. This was not the case for other racial/ethnic groups.

DISCUSSION

Among former smokers, those who used to smoke mentholated cigarettes regularly were less likely to have experienced long-term quitting success. Across racial/ethnic groups, smoking mentholated cigarettes was associated negatively with being quit for greater than 6 months.This finding across racial/ethnic groups with regard to long-term successful cessation in a national sample builds upon previous research showing less favorable cessation outcomes among those who smoke mentholated cigarettes [9,11,15,16].

Among African Americans and Hispanic/Latino current smokers, those who smoked mentholated cigarettes were more likely to be seriously considering quitting smoking in the next 6 months and to think that they would quit smoking successfully in the next 6 months compared to non-menthol smokers. Unfortunately, African Americans and Hispanics/ Latinos who smoked mentholated cigarettes were less likely to quit successfully for at least 6 months compared to those who smoked non-mentholated cigarettes. These two findings suggest that, among African Americans and Hispanics/Latinos, smoking mentholated cigarettes may contribute to an inflated sense of confidence in their estimation of quitting smoking successfully, while undermining actual success rates. This could be especially troubling for African Americans, as among current smokers almost 70% reported smoking mentholated cigarettes. It is also interesting to note that more than 40% of African American menthol smokers reported being very interested in quitting compared to only about 30% of non-menthol smokers. It should be noted, however, that this is only one of many possible underlying factors related to successful quitting. Although our models adjusted for age and educational attainment, it is likely that smoking of mentholated cigarettes is associated with other cultural and socio-economic factors which may contribute significantly to the lower rates of successful quitting among these smokers. Further, African American former smokers were also more likely to be current users of other tobacco products, suggesting that those who quit smoking cigarettes may have transitioned into using other forms of tobacco.

We found no significant differences in long-term quitting between racial/ethnic groups of menthol smokers, including Asian Americans/Pacific Islanders and Native Americans/ Alaska Natives after adjusting for socio- demographic characteristics and use of other tobacco products (results not shown). Additionally, in stratified analyses, findings for these two racial/ethnic groups were generally similar to those from non-Hispanic whites. The finding that those who smoked mentholated were less likely to have quit successfully are some of the earliest presented for Asian Americans/Pacific Islanders. Although the directionality of findings was similar for Native Americans/Alaska Natives in this regard, small sample sizes resulted in wide confidence limits.

High rates of smoking mentholated cigarettes among African Americans have been well documented, as well as the social factors contributing to such high rates [13,31– 35]. Many studies have also highlighted the lower rates of successful smoking cessation among African Americans compared to non-Hispanic whites, despite reports citing lower cigarette consumption [2,7,8,10]. Our data add to the literature documenting lower cessation rates among menthol smokers within the African American population after adjusting for socio-demographic differences, and our findings support recent research suggesting that lower rates of successful cessation among African Americans may be related to higher rates of smoking mentholated cigarettes [9,11,16,36]. Previous clinical research has shown that smoking mentholated cigarettes is associated with higher levels of cotinine and carbon monoxide [37], slower metabolism of nicotine into cotinine [38] and reduced efficacy of pharmacological smoking cessation treatments [39]. It has also been hypothesized that the anesthetizing quality of menthol may increase puffing frequency or puff volume [40–42]. These factors may affect the smoking cessation process for those who smoke menthol cigarettes by making it more difficult to quit.

Although current smokers were asked if they made any quit attempts in the past year, we did not examine cessation in this specific group of smokers because at the time of the survey they reported being current smokers. Thus, even if current smokers had actually quit for at least 6 months in the past year, because they reported currently smoking at time of survey they were not counted as former smokers. A detailed analysis of those still in the early-to-middle stages in the quitting process (i.e. still relapsing or showing progression–regression along the quitting continuum) is the subject of future research.

Limitations

An important limitation to consider is that our results for Asian Americans/Pacific Islanders and Hispanics/ Latinos are based on an examination of each race/ethnic group as a whole. Given that there are several national origin populations within each respective group, impor tant subgroup variation with regard to smoking behaviors within each race group could not be examined. It should also be noted that in the TUS CPS smoking status was ascertained by self-report and not validated with biochemical tests, but misclassification of smoking status by using self-report only is very uncommon [43] [44]. We combined two separate survey years of the TUS CPS, and thus the relation between smoking mentholated cigarettes and cessation has been averaged over any changes that may have occurred during this time-period. Because we are considering race/ethnic groups separately, we have made a large

number of statistical comparisons, increasing the chance that some findings may be due to chance. However, the consistency of findings across these independent groups (current and former smokers within different race/ethnic groups) adds confidence to our results.

CONCLUSION

Those who smoke mentholated cigarettes are significantly less likely to experience quitting success than those who smoke non-mentholated cigarettes. This finding holds within African American, Asian American/Pacific Islander/Hispanic/Latino and non-Hispanic white racial/ethnic groups, even after adjusting for socio-demographic differences which may be associated with menthol smoking. It is possible that the cooling and anesthetizing qualities of menthol may contribute to a reduced perception of harm or difficulty in quitting [40] which may be particularly important for African American and Hispanic/Latino smokers, the two racial/ethnic groups with the highest proportion of menthol smokers. Future research to improve long-term quitting outcomes for various racial/ethnic groups needs to consider not only smoking behaviors and consumption patterns, but also the types of cigarettes smoked typically by participants, particularly menthols. Efforts to curb smoking remain important if progress in reducing tobacco-related health disparities is to be accelerated.

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Table 1

Demographics and Smoking Information, by Race/Ethnicity, Adults 20-65 Years Old, 2003 & 2006-07 TUS CPS.

	Sample	Overall		African American		Asian American/ Pacific Islander		Hispanic/ Latino		Native American/ Alaska Native		Non-Hispanic White	
	Sample Size	%	(95% CI)	%	(95% CI)	%	(95% CI)	%	(95% CI)	%	(95% CI)	%	(95% CI)
Demographic information													
Total sample			283 441		25 758		10 853		28 720		2 616		212 693
Gender, % men	125 369	49.1	(49.1-49.2)	45.2	(45.1-45.4)	47.8	(47.4-48.1)	52.0	(52.0-52.0)	47.2	(44.9-47.2)	49.4	(49.3-49.4)
Age (mean)		41.3	(41.3-41.3)	40.0	(39.9-40.1)	39.6	(39.4-39.7)	37.4	(37.3-37.4)	39.8	(39.2-39.8)	42.4	(42.4-42.5)
Education level													
Less than H.S.	30 215	12.1	(11.9-12.3)	14.9	(14.3-15.5)	7.3	(6.7-8.0)	37.9	(37.1-37.9)	17.9	(15.5-17.9)	6.7	(6.5-6.8)
H.S. graduate	85 007	29.4	(29.1-29.6)	34.7	(34.0-35.5)	17.4	(16.4-18.4)	28.2	(27.5-28.2)	33.4	(30.3-33.4)	29.5	(29.2-29.8)
Some college	83 636	29.1	(28.9-29.3)	31.7	(31.0-32.4)	20.9	(20.0-21.8)	21.9	(21.2-21.9)	36.7	(33.6-36.7)	30.6	(30.3-30.8)
College graduate	84 583	29.5	(29.2-29.7)	18.6	(18.0-19.2)	54.4	(53.1-55.8)	12.0	(11.5-12.0)	12.1	(10.2-12.1)	33.3	(33.0-33.7)
Smoking													
Ever Smokers	115 040	38.7	(38.5-39.0)	30.9	(30.1-31.6)	21.0	(20.0-22.0)	24.6	(24.0-24.6)	50.7	(46.7-50.7)	44.0	(43.6-44.3)
Current Smokers	59 702	20.7	(20.5-20.9)	19.9	(19.2-20.5)	11.2	(10.5-12.0)	13.8	(13.3-13.8)	33.8	(30.6-33.8)	22.7	(22.4-23.0)
Former Smokers	54 818	17.8	(17.6-18.0)	10.8	(10.4-11.3)	9.7	(9.1-10.3)	10.7	(10.2-10.7)	16.4	(14.1-16.4)	21.1	(20.8-21.3)
Type of Cigarette Usually Smoked													
Current Smokers													
Menthol	14 791	26.3	(25.8-26.8)	69.8	(68.2-71.3)	24.8	(21.7-27.9)	25.4	(23.8-25.4)	21.6	(17.6-21.6)	20.1	(19.6-20.6)
Non-menthol	42 352	68.9	(68.3-69.4)	23.8	(22.4-25.3)	65.5	(62.0-68.9)	66.4	(64.6-66.4)	74.0	(69.8-74.0)	75.9	(75.4-76.4)
No ususal type	2 559	4.8	(4.6-5.1)	6.4	(5.5-7.3)	9.8	(7-6-12.0)	8.3	(7.2-8.3)	4.4	(2.4-4.4)	4.0	(3.8-4.2)
Former Smokers, Quit <6 mo.													
Menthol	2 876	6.3	(6.1-6.6)	20.1	(18.2-22.0)	8.1	(6.3-9.9)	9.0	(7.8-9.0)	6.4	(2.8-6.4)	4.8	(4.6-5.0)
Non-menthol	9 707	20.0	(19.6-20.5)	9.1	(7.7-10.5)	21.5	(18.2-24.8)	21.9	(20.2-21.9)	26.8	(20.1-26.8)	20.7	(20.2-21.2)
No ususal type	37 680	73.6	(73.2-74.1)	70.8	(68.6-73.0)	70.4	(66.9-73.9)	69.1	(67.1-69.1)	66.8	(59.3-66.8)	74.5	(74.0-75.0)
Former Smokers, Quit 6+ mo.													
Menthol	950	20.2	(18.7-21.6)	46.8	(40.8-52.7)	26.6	(16.9-36.2)	18.7	(14.3-18.7)	9.7	(1.1-9.7)	16.9	(15.4-18.4)
Non-menthol	3 015	56.5	(54.8-58.2)	21.3	(16.4-26.2)	47.9	(36.7-59.0)	56.5	(50.5-56.5)	68.3	(53.7-68.3)	61.0	(59.0-62.9)
No ususal type	1 110	23.3	(21.8-24.9)	31.9	(26.6-37.2)	25.6	(16.0-35.2)	24.8	(19.5-24.8)	22.0	(8.7-22.0)	22.1	(20.4-23.8)
Quitting Variables (Ever Smokers)													

	Sample	Overall		African American		Asian American/ Pacific Islander		Hispanic/ Latino		Native American/ Alaska Native		Non-Hispanic White	
	Sample Size	%	(95% CI)	%	(95% CI)	%	(95% CI)	%	(95% CI)	%	(95% CI)	%	(95% CI)
No attempt in last year	60 799	54.5	(54.1-54.9)	65.6	(64.4-66.8)	54.7	(52.4-57.0)	57.3	(55.8-57.3)	68.0	(64.4-68.0)	52.6	(52.2-53.0)
Made attempt, up to 6 mo.	3 978	3.6	(3.4-3.7)	3.0	(2.6-3.5)	3.8	(2.8-4.8)	4.7	(4.1-4.7)	4.4	(2.8-4.4)	3.5	(3.3-3.6)
Quit 6+ mo.	50 263	41.9	(41.6-42.3)	31.4	(30.2-32.5)	41.5	(39.1-43.8)	38.0	(36.6-38.0)	27.5	(24.3-27.5)	43.9	(43.5-44.4)
Pre-Qutting Variables (Current Smokers)													
Smokes Menthol													
Considering quit within 6 mo.	6 409	43.8	(42.8-44.8)	50.2	(48.4-52.1)	38.4	(32.5-44.2)	43.9	(40.7-43.9)	34.5	(25.3-34.5)	40.7	(39.6-41.9)
Planning to quit in next mo.	2 436	17.0	(16.3-17.8)	21.5	(20.0-23.0)	19.7	(15.0-24.4)	19.4	(16.8-19.4)	12.3	(5.9-12.3)	14.3	(13.5-15.2)
Very interested in quitting	5 121	35.4	(34.4-36.3)	41.9	(40.0-43.7)	32.1	(26.4-37.7)	35.6	(32.4-35.6)	25.2	(15.5-25.2)	32.1	(30.9-33.2)
Likely to succeed in quitting	7 854	53.5	(52.5-54.4)	58.0	(56.2-59.8)	49.1	(43.1-55.1)	56.5	(52.9-56.5)	44.3	(34.1-44.3)	50.9	(49.6-52.2)
Smokes Non-Menthol													
Considering quit within 6 mo.	18 727	40.5	(39.9-41.1)	36.6	(33.7-39.6)	39.6	(35.7-43.5)	38.7	(36.7-38.7)	35.3	(29.9-35.3)	40.9	(40.3-41.6)
Planning to quit in next mo.	7 226	15.9	(15.5-16.4)	14.8	(12.7-16.9)	19.1	(16.2-22.1)	19.6	(18.1-19.6)	14.9	(11.5-14.9)	15.4	(15.0-15.9)
Very interested in quitting	15 099	32.7	(32.1-33.2)	29.9	(27.2-32.6)	28.4	(24.7-32.2)	32.2	(30.2-32.2)	28.5	(23.9-28.5)	33.0	(32.3-33.6)
Likely to succeed in quitting	22 910	49.9	(49.3-50.5)	42.0	(39.0-45.1)	45.9	(41.8-50.0)	50.2	(48.0-50.2)	52.8	(48.3-52.8)	50.4	(49.8-51.0)

CI: confidence interval; TUS CPS: Tobacco Use Supplements to the Current Population Survey.

Table 2

Adjusted logistic regressions among current smokers: seriously considering quitting smoking in the next 6 months, by race/ethnicity

	African American			Asian American/Pacific Islander			Hispanic/Latino			Native American/Alaska Native			Non-Hispanic white		
	Odds ratio	L95% limit	U795% limit	Odds ratio	L95% limit	U95% limit	Odds ratio	L95% limit	U95% limit	Odds ratio	L95% limit	U95% limit	Odds ratio	L95% limit	U95% limit
Age groups (years)															
20–34	1.16	0.92 –	1.45	1.53	0.95 –	2.46	1.32	1.04 –	1.68	0.94	0.53 –	1.65	1.14	1.05 –	1.23
35–50	0.96	0.79 –	1.17	1.37	0.83 –	2.24	1.24	0.96 –	1.61	0.55	0.31 –	0.98	1.09	1.02 –	1.16
51–65	1.00	1.00 –	1.00	1.00	1.00 –	1.00	1.00	1.00 –	1.00	1.00	1.00 –	1.00	1.00	1.00 –	1.00
Gender															
Male	1.31	1.09 –	1.57	0.95	0.66 –	1.38	0.90	0.76 –	1.05	0.89	0.58 –	1.35	0.98	0.93 –	1.03
Female	1.00	1.00 –	1.00	1.00	1.00 –	1.00	1.00	1.00 –	1.00	1.00	1.00 –	1.00	1.00	1.00 –	1.00
Education															
Less than high school	0.65	0.49 –	0.87	1.46	0.77 –	2.76	0.93	0.68 –	1.27	0.52	0.21 –	1.28	0.66	0.59 –	0.74
High school graduate	0.68	0.52 –	0.88	1.29	0.82 –	2.03	1.04	0.74 –	1.47	0.47	0.19 –	1.16	0.85	0.78 –	0.92
Some college	0.91	0.70 –	1.19	1.38	0.9 –	2.11	0.94	0.69 –	1.28	0.39	0.16 –	0.92	1.01	0.92 –	1.11
College graduate	1.00	1.00 –	1.00	1.00	1.00 –	1.00	1.00	1.00 –	1.00	1.00	1.00 –	1.00	1.00	1.00 –	1.00
Usual cigarette type															
Menthol	1.62	1.35 –	1.95	0.77	0.51 –	1.16	1.21	1.00 –	1.47	1.01	0.57 –	1.77	1.02	0.96 –	1.09
Non-menthol	1.00	1.00 –	1.00	1.00	1.00 –	1.00	1.00	1.00 –	1.00	1.00	1.00 –	1.00	1.00	1.00 –	1.00
Smoking categorization															
Daily smoker	0.55	0.46 –	0.65	0.64	0.43 –	0.96	0.73	0.61 –	0.88	0.75	0.46 –	1.24	0.61	0.56 –	0.66
Intermittent smoker	1.00	1.00 –	1.00	1.00	1.00 –	1.00	1.00	1.00 –	1.00	1.00	1.00 –	1.00	1.00	1.00 –	1.00
Smokes within 30 minutes of waking															
Yes	0.74	0.65 –	0.85	0.84	0.57 –	1.22	0.85	0.69 –	1.04	1.10	0.65 –	1.88	0.90	0.84 –	0.96
No	1.00	1.00 –	1.00	1.00	1.00 –	1.00	1.00	1.00 –	1.00	1.00	1.00 –	1.00	1.00	1.00 –	1.00
Currently uses other tobacco products															
Yes	1.30	0.95	1.79	0.77	0.35 –	1.67	0.88	0.60 –	1.23	0.67	0.33 –	1.36	1.08	0.99 –	1.18
No	1.00	1.00 –	1.00	1.00	1.00 –	1.00	1.00	1.00 –	1.00	1.00	1.00 –	1.00	1.00	1.00 –	1.00
Very interested in quitting															
Yes	15.63	13.33 –	18.33	16.5	11.80 –	23.08	11.72	9.85 –	13.95	16.63	10.35 –	26.71	15.98	15.03 –	16.98
No	1.00	1.00 –	1.00	1.00	1.00 –	1.00	1.00	1.00 –	1.00	1.00	1.00 –	1.00	1.00	1.00 –	1.00

Table 3

Adjusted logistic regressions among current smokers: somewhat/very likely to succeed in quitting smoking in the next 6 months, by race/ethnicity.

	African American			Asian American/Pacific Islander			Hispanic/Latino			Native American/Alaska Native			Non-Hispanic white		
	Odds ratio	L95% limit	U95% limit	Odds ratio	L95% limit	U95% limit	Odds ratio	L95% limit	U95% limit	Odds ratio	L95% limit	U95% limit	Odds ratio	L95% limit	U95% limit
Age groups (years)															
20–34	1.00	0.83 –	1.20	1.56	0.91 –	2.67	1.23	0.99 –	1.54	1.09	0.61 –	1.94	1.35	1.25 –	1.45
35–50	1.05	0.88 –	1.26	1.13	0.67 –	1.92	1.15	0.91 –	1.46	0.91	0.56 –	1.48	1.18	1.11 –	1.26
51–65	1.00	1.00 –	1.00	1.00	1.00 –	1.00	1.00	1.00 –	1.00	1.00	1.00 –	1.00	1.00	1.00 –	1.00
Gender															
Male	1.20	1.03 –	1.38	1.10	0.79 –	1.54	0.97	0.82 –	1.14	0.91	0.62 –	1.32	0.98	0.93 –	1.03
Female	1.00	1.00 –	1.00	1.00	1.00 –	1.00	1.00	1.00 –	1.00	1.00	1.00 –	1.00	1.00	1.00 –	1.00
Education															
Less than high school	0.48	0.36 –	0.65	0.78	0.46 –	1.32	0.71	0.51 –	1.01	0.49	0.22 –	1.13	0.51	0.46 –	0.56
High school graduate	0.59	0.46 –	0.76	1.05	0.72 –	1.55	0.69	0.49 –	0.96	0.84	0.41 –	1.70	0.73	0.67 –	0.79
Some college	0.70	0.53 –	0.93	0.87	0.61 –	1.23	1.05	0.73 –	1.52	0.77	0.34 –	1.74	0.92	0.85 –	0.99
College graduate	1.00	1.00 –	1.00	1.00	1.00 –	1.00	1.00	1.00 –	1.00	1.00	1.00 –	1.00	1.00	1.00 –	1.00
Usual cigarette type															
Menthol	1.87	1.60 –	2.19	1.14	0.83 –	1.58	1.34	1.11 –	1.62	0.68	0.42 –	1.11	1.05	0.99 –	1.12
Non-menthol	1.00	1.00 –	1.00	1.00	1.00 –	1.00	1.00	1.00 –	1.00	1.00	1.00 –	1.00	1.00	1.00 –	1.00
Smoking categorization															
Daily smoker	0.52	0.43 –	0.63	0.64	0.45 –	0.92	0.50	0.42 –	0.59	0.77	0.47 –	1.26	0.49	0.45 –	0.53
Intermittent smoker	1.00	1.00 –	1.00	1.00	1.00 –	1.00	1.00	1.00 –	1.00	1.00	1.00 –	1.00	1.00	1.00 –	1.00
Smokes within 30 minutes of waking															
Yes	0.71	0.59 –	0.85	0.68	0.50 –	0.94	0.67	0.56 –	0.80	0.52	0.34 –	0.78	0.75	0.71 –	0.79
No	1.00	1.00 –	1.00	1.00	1.00 –	1.00	1.00	1.00 –	1.00	1.00	1.00 –	1.00	1.00	1.00 –	1.00
Currently uses other tobacco products															
Yes	0.89	0.66	1.22	0.96	0.48 –	1.90	0.86	0.64 –	1.17	1.28	0.65 –	2.53	1.11	1.02 –	1.20
No	1.00	1.00 –	1.00	1.00	1.00 –	1.00	1.00	1.00 –	1.00	1.00	1.00 –	1.00	1.00	1.00 –	1.00
Very interested in quitting															
Yes	6.67	5.66 –	7.84	6.52	4.52 –	9.40	6.27	5.17 –	7.60	4.06	2.50 –	6.59	6.78	6.41 –	7.16
No	1.00	1.00 –	1.00	1.00	1.00 –	1.00	1.00	1.00 –	1.00	1.00	1.00 –	1.00	1.00	1.00 –	1.00

Table 4

Among former smokers, logistic regressions examining smoking cessation of at least 6 months, stratified by race/ethnic group.

	African American			Asian American/Pacific Islander			Hispanic/Latino			Native American/Alaska Native			Non-Hispanic white		
	Odds ratio	L95% limit	U95% limit	Odds ratio	L95% limit	U95% limit	Odds ratio	L95% limit	U95% limit	Odds ratio	L95% limit	U95% limit	Odds ratio	L95% limit	U95% limit
Age groups (years)															
20–34	0.51	0.34 –	0.75	0.47	0.24 –	0.90	0.21	0.14 –	0.30	0.25	0.09 –	0.70	0.21	0.19 –	0.24
35–50	0.72	0.52 –	0.99	1.54	0.78 –	3.01	0.52	0.35 –	0.76	0.50	0.17 –	1.45	0.54	0.49 –	0.60
51–65	1.00	1.00 –	1.00	1.00	1.00 –	1.00	1.00	1.00 –	1.00	1.00	1.00 –	1.00	1.00	1.00 –	1.00
Gender															
Male	0.85	0.64 –	1.13	0.73	0.40 –	1.34	0.73	0.56 –	0.96	0.90	0.40 –	2.04	0.85	0.77 –	0.92
Female	1.00	1.00 –	1.00	1.00	1.00 –	1.00	1.00	1.00 –	1.00	1.00	1.00 –	1.00	1.00	1.00 –	1.00
Education															
Less than high school	0.58	0.33 –	1.05	1.12	0.35 –	3.55	0.63	0.39 –	1.01	0.44	0.10 –	1.93	0.53	0.44 –	0.63
High school graduate	0.54	0.32 –	0.89	0.85	0.42 –	1.72	0.73	0.44 –	1.19	0.18	0.05 –	0.58	0.65	0.58 –	0.73
Some college	0.65	0.40 –	1.08	1.82	0.94 –	3.52	0.66	0.40 –	1.08	0.41	0.11 –	1.49	0.74	0.67 –	0.83
College graduate	1.00	1.00 –	1.00	1.00	1.00 –	1.00	1.00	1.00 –	1.00	1.00	1.00 –	1.00	1.00	1.00 –	1.00
Usual cigarette type															
Menthol	0.23	0.17 –	0.31	0.22	0.11 –	0.45	0.48	0.34 –	0.69	0.49	0.14 –	1.71	0.28	0.25 –	0.33
Non-menthol	1.00	1.00 –	1.00	1.00	1.00 –	1.00	1.00	1.00 –	1.00	1.00	1.00 –	1.00	1.00	1.00 –	1.00
Currently uses other tobacco products															
Yes	2.23	1.10 –	4.53	0.73	0.12 –	4.35	1.46	0.79 –	2.73	0.40	0.11 –	1.42	1.08	0.91 –	1.27
No	1.00	1.00 –	1.00	1.00	1.00 –	1.00	1.00	1.00 –	1.00	1.00	1.00 –	1.00	1.00	1.00 –	1.00