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Symptoms of Tobacco Dependence Among Middle and High School Tobacco Users:

Results from the 2012 National Youth Tobacco Survey

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Abstract

Background—A growing body of evidence suggests that tobacco dependence symptoms can occur soon after smoking onset and with low levels of use. However, limited data are available nationally and among non-cigarette tobacco users.

Purpose—To examine the prevalence and determinants of tobacco dependence symptoms among adolescent tobacco users in the 2012 National Youth Tobacco Survey, a nationally representative, school-based survey of U.S. middle and high school students.

Methods—Multivariate logistic regression was used to identify independent predictors of dependence symptoms among current users (i.e., past 30-day use) of cigarettes, cigars, or smokeless tobacco. Analyses were conducted in 2013 using SAS-callable SUDAAN, version 11 to account for the complex survey design.

Results—Prevalence of tobacco dependence symptoms ranged from 20.8% (95% CI=18.6, 23.1) of current tobacco users reporting wanting to use tobacco within 30 minutes of waking to 41.9% (95% CI=39.3, 44.5) reporting recent strong cravings. Reporting of dependence symptoms was most consistently associated with polytobacco use, higher frequency of use, earlier initiation age, and female gender. A 2–4-fold increase in the odds of symptom reporting was found in adolescents using tobacco products on as few as 3–5 days compared to those who only used it for 1–2 of the past 30 days.

Conclusions—A substantial proportion of U.S. adolescent tobacco users, including those with low levels of use, report symptoms of tobacco dependence. These findings demonstrate the need

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for full implementation of evidence-based strategies to prevent both experimentation and progression to regular tobacco use among youth.

Introduction

Nicotine dependence is the primary determinant of maintenance and long-term use of tobacco products. Because the overwhelming majority of tobacco users start in adolescence, understanding the extent to which symptoms of dependence are present among youth is critical to tobacco use prevention and cessation. Several recent studies have found significant reporting of dependence symptoms among adolescent smokers, despite smoking behavior characterized by intermittent and recent onset of use. For example, in studies of adolescents who reported smoking on a monthly basis, a majority reported diminished autonomy (i.e., greater difficulty refraining from smoking), which progressed with increased usage.[1,2]

Other studies have shown that a subset of adolescents (25%–30%) experience diminished autonomy after brief intermittent use, including after having smoked only one cigarette[1,3]; however, this claim has been refuted by some.[4] A recent study by Zhan and colleagues[5] provided additional evidence that adolescent smokers show symptoms of tobacco dependence, including those with recent onset of use. Twenty percent of adolescents who smoked fewer than 100 cigarettes reported “smoking to relieve restlessness and irritability” and “smoking a lot more now to be satisfied compared to when first smoked.”[5] However, this was a small (N=114) non-representative study that was limited to cigarette smoking.

More limited data are available on the extent of dependence symptom reporting among nationally representative samples of adolescents. Using the National Survey on Drug Use and Health (2002–2006), Rose et al.[6,7] found indications that recent onset of smoking (i.e., first use within the past 2 years) in youth and young adult cohorts is accompanied by early symptoms of nicotine dependence. In addition, Caraballo and colleagues[8] reported on analyses of a nationally representative sample of middle and high school student respondents to the 2004 National Youth Tobacco Survey (NYTS). The investigators found a dose–response relationship between the number of days smoked and number of cigarettes smoked on those days and reports of current tobacco dependence symptoms.

In the present study, the prevalence of self-reported symptoms of tobacco dependence was assessed using the 2012 NYTS, a nationally representative U.S. school-based survey of approximately 24,000 middle and high school students. The 2012 NYTS was modified to include questions on dimensions of dependence across various tobacco products, which is important in the context of prevalent non-cigarette tobacco product and polytobacco use.

Methods

Study Population

Data were obtained from the 2012 NYTS. In-depth details of the NYTS methodology are available at cdc.gov/tobacco/data_statistics/surveys/nyts.index.htm. Briefly, the NYTS is an ongoing school-based, self-administered pencil-and-paper questionnaire focusing on

tobacco-related measures. The NYTS uses a three-stage cluster sample design to produce cross-sectional, nationally representative estimates of U.S. middle school (Grades 6–8) and high school (Grades 9–12) students.

The CDC's IRB approved the NYTS data collection protocol. Of the 284 schools selected in 2012, a total of 228 (80.3%) participated, resulting in 24,658 (91.7%) surveys completed by students and a participation rate of 73.6%. Final weights were applied to reflect initial selection probabilities, non-response adjustment, weight trimming, and post-stratification to national student population estimates.

Measures

Sex, grade, race, and ethnicity were self-reported by respondents. Race/ethnicity was recoded into four categories: white non-Hispanic, black non-Hispanic, Hispanic, and other Non-Hispanic. Other non-Hispanic included non-Hispanic Asian, American Indian or Alaska Native, Native Hawaiian or Pacific Islander, and non-Hispanic with multiple races.

Respondents were asked about their use of a variety of tobacco products. In this study, we only included current users (defined as past 30 day use) of the following three products: 1) cigarettes; 2) cigars, cigarillos, or little cigars; and 3) smokeless tobacco. This restriction was made because information on age at first use and number of days used, both important determinants of dependence, was only available for these three products.

If a respondent reported use of more than one of these products in the past 30 days, analyses of the number of days used was based on the product used most frequently. Similarly, age at first use was based on the earliest product used. Polytobacco use was defined on the basis of these three products, as well as seven other tobacco products asked about on the questionnaire: pipes, bidis, kreteks, hookah, snus, dissolvable tobacco, and electronic cigarettes. Respondents who reported using two or more of these products on at least 1 of the past 30 days were considered polytobacco users. Exclusive users of other tobacco products (e.g., pipes, hookah, e-cigarettes) were excluded from the analysis.

The presence of tobacco dependence symptoms was assessed using the following survey items: *During the past 30 days, have you had a strong craving or felt like you really needed to use a tobacco product of any kind? (yes/no); During the past 30 days, was there a time when you wanted to use a tobacco product so much that you found it difficult to think of anything else? (yes/no); How true is this statement for you? I feel restless and irritable when I don't use tobacco for a while*. (*I do not use tobacco/not at all true/sometimes true/often true/always true*); and *How soon after you wake up do you want to use a tobacco product? (I do not use tobacco/within 5 minutes/from 6 to 30 minutes/from more than 30 minutes to 1 hour/after more than 1 hour but less than 24 hours/I rarely want to use tobacc*o).

Similar dependence questions as used in dependence questionnaires show reliability[9] and construct validity[10,11] in predicting failed cessation, progression to tobacco use, and measures of smoking in adolescents. The latter two questions were dichotomized to sometimes/often/always feeling restless and irritable when not using tobacco for a while (yes/no) and wanting to use tobacco within the first 30 minutes (yes/no). Respondents who

reported using tobacco on at least 1 of the past 30 days, but responded to these questions that they did not use tobacco, were treated as a “no” in the dichotomous variable. These results provide a conservative estimate of dependence symptoms among recent tobacco users.

Data Analysis

The distribution of demographic and product usage characteristics among current tobacco users overall, as well as single-product and polytobacco users, is presented. Differences in characteristics between single-product and polytobacco users were assessed using overlapping CIs. Bivariate analyses were conducted to estimate the prevalence of dependence symptoms among these three groups of tobacco users, stratified by sex; school level (middle and high school); race/ethnicity (white non-Hispanic, black non-Hispanic, Hispanic, and other non-Hispanic); age at earliest product use; and number of days using the most frequently used product. Among current tobacco users, polytobacco use was included as a covariate and, among single-product users, the type of tobacco product used was included.

Multivariate logistic regression modeling was conducted for each tobacco dependence measure, adjusting for each of the aforementioned covariates. Separate bivariate and multivariate analyses were conducted among single-product and polytobacco users. All analyses were conducted in 2013 using SAS-callable SUDAAN, version 11 (RTI International, Research Triangle Park NC) to account for the complex survey design. All estimates were weighted, except for cell counts shown in the Tables.

Results

Table 1 describes the demographic and tobacco use characteristics of current tobacco users, both overall and stratified by single-product and polytobacco use. The prevalence of current use of cigarettes, cigars, or smokeless tobacco was 14.8% (data not shown), resulting in a sample size of 3,454 current middle and high school tobacco users for this analysis. The majority of current users were polytobacco users (62.4%); most single-product users were cigarette smokers (45.0%), followed by cigar smokers (37.9%) and smokeless tobacco users (17.1%).

Polytobacco users were more likely than single-product users to be male, use tobacco more frequently, and have tried their first tobacco product before age 11 years. Single-product users were more likely than polytobacco users to be black non-Hispanic. Thirty-six percent of single-product users reported at least one of the four symptoms of dependence, compared with 62.9% of polytobacco users.

Tables 2–5 present the prevalence and determinants of each tobacco dependence symptom among current tobacco users, single-product users, and polytobacco users. Overall, 41.9% (95% CI=39.3, 44.5) of current tobacco users reported recent strong cravings to use tobacco; 23.3% (95% CI=21.2, 25.5) reported that they wanted to use tobacco so much that they found it difficult to think of anything else; 34.9% (95% CI=32.5, 37.5) reported feeling sometimes, often, or always irritable or restless when not using tobacco for a while; and 20.8% (95% CI=18.6, 23.1) reported first wanting to use tobacco within 30 minutes of

waking. Overall prevalence of each of the symptoms was significantly greater in polytobacco users than single-product users.

In multivariate models, several consistent associations were observed across the four dependence symptoms (Tables 2–5). Girls were consistently more likely than boys to report dependence symptoms, ranging from a 1.7-fold increase in the odds (95% CI=1.2, 2.2) of reporting first wanting to use tobacco within 30 minutes of waking to a 2.8-fold increase in the odds (95% CI=2.2, 3.4) of reporting recent strong cravings.

With the exception of wanting to use tobacco within the 30 minutes of waking, middle school tobacco users had greater odds of reporting symptoms than high school tobacco users. These associations appeared to be restricted to polytobacco users. Polytobacco users were consistently more likely than single-product users to report symptoms, with ORs ranging from 1.3 (95% CI=1.1, 1.6) for reporting feeling irritable or restless when not using tobacco for a while to 2.3 (95% CI=1.6, 3.1) for reporting first wanting to use tobacco within 30 minutes of waking.

In univariate analyses, adolescent tobacco users who first used cigarettes, cigars, or smokeless tobacco before age 11 years had greater odds of reporting each of the dependence symptoms. However, after controlling for demographics and other tobacco use characteristics, significant associations were only observed for reporting a strong desire to use tobacco during the past 30 days and reporting first wanting to use tobacco within 30 minutes of waking.

In multivariate models, there was a strong positive association between frequency of cigarette, cigar, or smokeless tobacco use (as measured by number of days used) and odds of reporting each of the four dependence symptoms. For each measure, significant increases in symptom reporting were observed when comparing adolescents who used tobacco on as few as 3–5 days with those who used on 1–2 of the past 30 days. Adolescent tobacco users who reported a greater number of days of use also had greater odds of reporting multiple symptoms (Figure 1).

Among single-product users, after adjustment, cigar-only smokers had consistently lower odds of reporting symptoms than cigarette-only smokers. However, symptoms of tobacco dependence were still reported by cigar-only users, even though a substantial majority reported use on 5 days or less in the past 30 days. For example, among cigar-only smokers, 6.7% reported recent strong cravings and 7.8% reported feeling irritable or restless when not using tobacco for a while.

Discussion

This study found that increased reporting of dependence symptoms in adolescent tobacco users was independently associated with polytobacco use, increased frequency of use, earlier age at first use, and female sex. More than three in five current tobacco users reported polytobacco use in the present study, higher than levels previously reported using 2002 and 2004 NYTS data.[12] The results of this study suggest that this growing population of adolescent tobacco users exhibit higher levels of symptoms of tobacco dependence than

single-product users and, therefore, are at greater risk for continuing to use tobacco products into adulthood.

A clear dose–response relationship was seen between number of days used and dependence symptoms, consistent with findings from Caraballo et al.[8] This group also found that approximately 25% of very light adolescent cigarette smokers (1–5 days smoked in the past 30 days, less than one cigarette per day) reported at least one tobacco dependence symptom.[8] In this study, symptoms of dependence were also reported among infrequent users. For example, 15.6% of adolescent tobacco users who used on 1–2 days in the past 30 days reported recent strong cravings. These findings are consistent with recent research[2,5,6,13,14] reporting the onset of loss of control over smoking at early stages of initiation and at low levels of use.

Demographic differences in reported symptoms were observed after controlling for tobacco use patterns and age at initiation. Overall, girls were significantly more likely to report dependence symptoms than boys. Similarly, DiFranza and colleagues[10] found that girls were more likely to report dependence symptoms and exhibit more rapid symptom onset than boys. Several other studies[8,15,16] have also identified similar sex differences in dependence symptoms, including cravings and urges, although one study[17] found that boys demonstrated more dimensions of dependence than girls.

Conversely, other studies[11,18] have failed to identify relationships between sex and dependence symptoms among adolescents. These discrepancies may be attributable to differences in the recruited population, measures of dependence, and geographic location. Further research is needed to determine whether the sex differences in these studies reflect real variation in susceptibility to tobacco dependence or simply differential self-reporting of symptoms.

Analyses of single-product users found that exclusive cigar smokers, the majority of whom were infrequent cigar smokers, were generally less likely to report dependence symptoms than exclusive cigarette smokers or smokeless tobacco users. However, symptoms of tobacco dependence were still reported by cigar-only users, even though a substantial majority reported use on 5 days or less in the past 30 days.

Few studies have examined tobacco dependence among smokeless tobacco product users in adolescents. In a study[19] of Swedish youth, snus users (both exclusive and dual users with cigarette smoking) exhibited lifetime symptoms of dependence at levels similar to or greater than exclusive cigarette smokers. Another study[20] evaluated dependence among adolescent smokeless tobacco users, finding that even those who had fewer than 100 lifetime uses showed symptoms of tobacco dependence.

These results are consistent with the findings that adolescent smokeless tobacco users exhibit some symptoms of dependence at levels similar to cigarette smokers. Future research is needed to elucidate the role that specific tobacco products play in the development and maintenance of tobacco dependence, as patterns of use and nicotine pharmacokinetics may differ across products.

After adjusting for frequency of use, middle school tobacco users were more likely to report tobacco dependence symptoms compared to high school users, particularly among polytobacco users. Analysis of the 2004 NYTS data, which included questions on craving and urge to smoke, did not differentiate between middle and high school students.[8] However, in regression models controlling for frequency and amount smoked, Caraballo et al.[8] also found that older adolescent smokers (aged 15–18 years) were less likely to report dependence symptoms than younger adolescents (aged 12–14 years). In that analysis, no difference was observed in regression models that did not include smoking frequency and amount.

One possible interpretation of these findings is that adolescents who progressed to a given frequency and amount of use at a younger age were more likely to be dependent than those who reached that pattern of use in later adolescence. This progression may indicate that early exposure to nicotine leads to a greater likelihood of dependence, but could also be explained by at-risk adolescents being more likely to experiment with tobacco at an early age.

Limitations

There are several limitations to the present study. In this analysis, a limited set of dependence measures were assessed. These measures were chosen for inclusion in the NYTS to reflect different dimensions of dependence including craving, loss of autonomy, and withdrawal. Several dependence scales have been validated among adolescents, including the Nicotine Dependence Scale for Adolescents (NDSA); the modified Fagerström Tolerance Questionnaire (mFTQ); and the Hooked on Nicotine Checklist (HONC), which assess similar dimensions of dependence.[3,11,21,22]

Also included in the mFTQ and NDSA adolescent dependence scales, the “time to first wanting to use tobacco” survey item in the present study, is a modified version of the most widely used question to assess nicotine dependence in adults. It is unclear whether the patterns reported here will hold for other measures of dependence in adolescents. However, we observed associations consistent with previous findings, including strong dose–response relationships with frequency of product use.

The ability to distinguish the relationships between specific types of products used and dependence symptoms was limited by the significant degree of polytobacco use. Information about the type of cigars smoked (i.e., little cigars, cigarillos, large cigars) was not available, although differences in cigar products used could lead to substantial variation in smoking topography, frequency, and likelihood of dependence.

In the context of polytobacco use, some degree of misclassification of frequency of use may have occurred because the analysis was based on the product used most frequently. To the extent that polytobacco users use different products on different days, frequency of use may have been underestimated. Similarly, age at initiation was based on the earliest product used, and a detailed history of tobacco product use was not available. Additionally, because this is a cross-sectional survey, it was not possible to evaluate the relationship between the onset of tobacco dependence symptoms and the onset of tobacco product use.

Finally, as described in the Methods section, respondents who reported using tobacco on at least 1 of the past 30 days but responded to questions on dependence symptoms that they did not use tobacco were treated as not dependent in the analysis. These results provide a conservative estimate (i.e., potential underestimate) of dependence symptoms among recent tobacco users. In some subgroups, a significant population reported seemingly discordant responses to these questions. These findings suggest a difference between self-reported behavior and self-identification as a tobacco user, specifically among infrequent users.

Conclusions

This study demonstrates that a significant proportion of adolescent tobacco users in the U.S. report symptoms of dependence, even at low levels of use—a result that is consistent with the growing body of evidence reporting symptoms in recent-onset and intermittent adolescent cigarette smokers and attests to the highly addictive nature of nicotine. Among the 3.9 million middle and high school students who reported current use of cigarettes, cigars, or smokeless tobacco, approximately 2 million reported at least one symptom of dependence.

These findings highlight the need for preventing any tobacco use experimentation in youth. Polytobacco users, who comprise a substantial proportion of youth tobacco users, are significantly more likely to report symptoms and are at particularly increased risk for continuing tobacco use into adulthood. Additional research to examine the natural history of tobacco dependence symptoms among adolescents with respect to specific tobacco products and the onset of polytobacco use would inform prevention and cessation efforts.

These findings demonstrate the need for full implementation of evidence-based strategies to prevent youth tobacco use, including implementation of comprehensive state tobacco control programs at CDC-recommended funding levels, sustained public education campaigns, and vigorous enforcement of the youth access and marketing restrictions in the Family Smoking Prevention and Tobacco Control Act.

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References

1. Scragg R, Wellman RJ, Laugesen M, Difranza JR. Diminished autonomy over tobacco can appear with the first cigarettes. Addict Behav. 2008; 33(5):689–98. [PubMed: 18207651]
2. O'Loughlin J, DiFranza J, Tyndale RF, et al. Nicotine-dependence symptoms are associated with smoking frequency in adolescents. Am J Prev Med. 2003; 25(3):219–25. [PubMed: 14507528]
3. Difranza JR, Savageau JA, Fletcher K, et al. Symptoms of tobacco dependence after brief intermittent use: the Development and Assessment of Nicotine Dependence in Youth–2 study. Arch Pediatr Adolesc Med. 2007; 161(7):704–10. [PubMed: 17606835]
4. Dar R, Frenk H. Can one puff really make an adolescent addicted to nicotine? A critical review of the literature. Harm Reduct J. 2010; 7:28. [PubMed: 21067587]
5. Zhan W, Dierker LC, Rose JS, Selya A, Mermelstein RJ. The natural course of nicotine dependence symptoms among adolescent smokers. Nicotine Tob Res. 2012; 14(12):1445–52. [PubMed: 22422927]

6. Rose JS, Dierker LC, Donny E. Nicotine dependence symptoms among recent onset adolescent smokers. Drug Alcohol Depend. 2010; 106(2–3):126–32. [PubMed: 19765916]
7. Rose JS, Dierker LC. An item response theory analysis of nicotine dependence symptoms in recent onset adolescent smokers. Drug Alcohol Depend. 2010; 110(1–2):70–9. [PubMed: 20236773]
8. Caraballo RS, Novak SP, Asman K. Linking quantity and frequency profiles of cigarette smoking to the presence of nicotine dependence symptoms among adolescent smokers: findings from the 2004 National Youth Tobacco Survey. Nicotine Tob Res. 2009; 11(1):49–57. [PubMed: 19246441]
9. O'Loughlin J, Tarasuk J, DiFranza J, Paradis G. Reliability of selected measures of nicotine dependence among adolescents. Ann Epidemiol. 2002; 12(5):353–62. [PubMed: 12062924]
10. Difranza JR, Savageau JA, Rigotti NA, et al. Development of symptoms of tobacco dependence in youths: 30 month follow up data from the DANDY study. Tob Control. 2002; 11(3):228–35. [PubMed: 12198274]
11. Nonnemaker J, Mowery P, Hersey J, et al. Measurement properties of a nicotine dependence scale for adolescents. Nicotine Tob Res. 2004; 6(2):295–301. [PubMed: 15203803]
12. Bombard JM, Rock VJ, Pederson LL, Asman KJ. Monitoring polytobacco use among adolescents: do cigarette smokers use other forms of tobacco? Nicotine Tob Res. 2008; 10(11):1581–9. [PubMed: 18988070]
13. Wellman RJ, Difranza JR, Wood C. Tobacco chippers report diminished autonomy over smoking. Addict Behav. 2006; 31(4):717–21. [PubMed: 15979812]
14. Savageau JA, Mowery PD, Difranza JR. Symptoms of diminished autonomy over cigarettes with non-daily use. Int J Environ Res Public Health. 2009; 6(1):25–35. [PubMed: 19440267]
15. Panday S, Reddy SP, Ruiter RA, Bergstrom E, de VH. Nicotine dependence and withdrawal symptoms among occasional smokers. J Adolesc Health. 2007; 40(2):144–50. [PubMed: 17259054]
16. Dickmann PJ, Mooney ME, Allen SS, Hanson K, Hatsukami DK. Nicotine withdrawal and craving in adolescents: effects of sex and hormonal contraceptive use. Addict Behav. 2009; 34(6–7):620–3. [PubMed: 19398166]
17. Okoli CT, Torchalla I, Ratner PA, Johnson JL. Differences in the smoking identities of adolescent boys and girls. Addict Behav. 2011; 36(1–2):110–5. [PubMed: 20965665]
18. Richardson CG, Memetovic J, Ratner PA, Johnson JL. Examining gender differences in emerging tobacco use using the Adolescents' Need For Smoking Scale. Addiction. 2011; 106(10):1846–54. [PubMed: 21561502]
19. Post A, Gilljam H, Rosendahl I, Bremberg S, Galanti MR. Symptoms of nicotine dependence in a cohort of Swedish youths: a comparison between smokers, smokeless tobacco users and dual tobacco users. Addiction. 2010; 105(4):740–6. [PubMed: 20148785]
20. Difranza JR, Sweet M, Savageau JA, Ursprung WW. The assessment of tobacco dependence in young users of smokeless tobacco. Tob Control. 2012; 21(5):471–6. [PubMed: 21712393]
21. Kandel D, Schaffran C, Griesler P, Samuolis J, Davies M, Galanti R. On the measurement of nicotine dependence in adolescence: comparisons of the mFTQ and a DSM-IV-based scale. J Pediatr Psychol. 2005; 30(4):319–32. [PubMed: 15863429]
22. Wheeler KC, Fletcher KE, Wellman RJ, Difranza JR. Screening adolescents for nicotine dependence: the Hooked On Nicotine Checklist. J Adolesc Health. 2004; 35(3):225–30. [PubMed: 15313504]

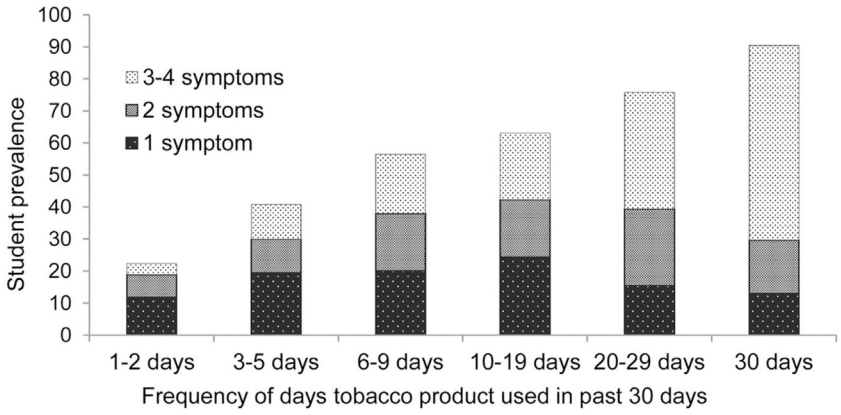

Figure 1.

Prevalence of symptoms of dependence by frequency of tobacco use, 2012 National Youth Tobacco Survey

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Table 1

Characteristics of current tobacco product users, stratified by polytobacco use, 2012 National Youth Tobacco Survey

	Current tobacco users[a] (*n*=3,454)		Current single-product users[b] (*n*=1,228)		Current polytobacco users[c] (*n*=2,035)	
	n	**% (95% CI)**	***n***	**% (95% CI)**	***n***	**% (95% CI)**
School type						
Middle school	678	16.7 (14.0, 19.8)	244	17.3 (13.9, 21.4)	373	15.6 (12.8, 18.9)
High school	2,755	83.3 (80.2, 86.0)	983	82.7 (78.6, 86.1)	1,644	84.4 (81.1, 87.2)
Sex						
Female	1,298	37.1 (34.7, 39.6)	539	43.1 (39.2, 47.1)	704	34.0 (31.4, 36.7)
Male	2,155	62.9 (60.4, 65.3)	688	56.9 (52.9, 60.8)	1,331	66.0 (63.3, 68.6)
Race/ethnicity						
White, non-Hispanic	1,718	55.2 (50.6, 59.6)	589	52.1 (46.4, 57.8)	1,051	58.1 (53.4, 62.6)
Black, non-Hispanic	443	14.3 (11.3, 18.0)	244	21.4 (16.8, 26.8)	172	9.7 (7.6, 12.4)
Hispanic	790	21.5 (18.9, 24.3)	222	17.3 (14.7, 20.3)	514	23.5 (20.2, 27.2)
Other non-Hispanic	418	9.0 (7.6, 10.7)	144	9.2 (7.6, 11.0)	249	8.7 (7.0, 10.8)
Days used cigarettes, cigars or smokeless tobacco						
30	718	21.4 (19.1, 23.8)	123	9.8 (7.8, 12.4)	562	28.5 (25.2, 32.0)
20–29	312	8.7 (7.8, 9.8)	64	4.9 (3.8, 6.3)	232	11.3 (9.9, 12.8)
10–19	385	11.5 (10.3, 12.7)	108	9.2 (7.5, 11.2)	262	13.0 (11.5, 14.8)
6–9	305	8.3 (7.3, 9.3)	92	7.1 (5.6, 9.1)	198	9.1 (7.7, 10.7)
3–5	514	14.5 (13.1, 16.0)	163	12.4 (10.6, 14.6)	322	15.5 (13.4, 17.8)
1–2	1,220	35.7 (33.5, 38.0)	678	56.5 (53.0, 59.9)	459	22.6 (20.0, 25.4)

	Current tobacco users[a] (*n*=3,454)		Current single-product users[b] (*n*=1,228)		Current polytobacco users[c] (*n*=2,035)	
	n	**% (95% CI)**	***n***	**% (95% CI)**	***n***	**% (95% CI)**
Single product currently used						
Cigarettes only			567	45.0 (41.1, 49.0)		
Cigars only			463	37.9 (33.4, 42.7)		
Smokeless only			198	17.1 (12.8, 22.3)		
Age first used cigarettes, cigars, or smokeless tobacco (years)						
<11	810	23.3 (21.2, 25.6)	150	10.9 (9.1, 13.0)	557	27.5 (24.5, 30.6)
≥11	2,507	76.7 (74.4, 78.8)	1,068	89.1 (87.0, 90.9)	1,399	72.5 (69.4, 75.5)
Polytobacco use						
Yes	2,035	62.4 (59.6, 65.0)				
No	1,228	37.6 (35.0, 40.4)				
One or more dependence symptom(s)						
Yes	1,777	52.2 (49.2, 55.2)	436	36.0 (32.2, 40.0)	1,276	62.9 (59.0, 66.6)
No	1,572	47.8 (44.8, 50.8)	771	64.0 (60.0, 67.8)	713	37.1 (33.4, 41.0)

[a] Defined as use of cigarettes, cigars, or smokeless tobacco on at least 1 day during the past 30 days

[b] Defined as use of only one of the following three products on at least 1 day during the past 30 days: cigarettes, cigars, or smokeless tobacco

[c] Defined as past 30-day cigarette, cigar, or smokeless tobacco users who reported using at least 2 of those products or pipes, bidis, kreteks, hookah, snus, dissolvable tobacco or electronic cigarettes in the past 30 days

Table 2

Characteristics associated with having strong cravings for a tobacco product during the past 30 days, 2012 National Youth Tobacco Survey

	Current tobacco users[a] (*n*=3,378)		Current single-product users[b] (*n*=1,221)		Current polytobacco users[c] (*n*=1,996)	
	% (95% CI)	AOR (95% CI)	% (95% CI)	AOR (95% CI)	% (95% CI)	AOR (95% CI)
OVERALL	41.9 (39.3, 44.5)	—	27.2 (23.9, 30.9)	—	51.8 (48.5, 55.0)	—
School type						
Middle school	42.4 (37.1, 47.9)	1.7 (1.3, 2.3)	21.8 (15.8, 29.3)	1.0 (0.6, 1.6)	58.3 (51.0, 65.1)	2.2 (1.5, 3.2)
High school	41.6 (38.8, 44.5)	1.0	28.4 (24.9, 32.2)	1.0	50.3 (46.7, 53.9)	1.0
Sex						
Female	48.6 (45.0, 52.2)	2.8 (2.2, 3.4)	35.5 (30.8, 40.5)	2.8 (1.9, 4.0)	59.6 (55.3, 63.6)	2.7 (2.0, 3.7)
Male	37.9 (35.0, 40.9)	1.0	21.0 (17.1, 25.4)	1.0	47.7 (43.8, 51.7)	1.0
Race/ethnicity						
White, non-Hispanic	46.0 (42.5, 49.5)	1.0	34.0 (28.6, 40.0)	1.0	52.9 (48.5, 57.2)	1.0
Black, non-Hispanic	25.1 (21.1, 29.5)	0.4 (0.3, 0.7)	13.5 (9.1, 19.4)	0.8 (0.4, 1.3)	41.9 (34.4, 49.8)	0.6 (0.3, 1.0)
Hispanic	41.2 (36.6, 45.9)	0.8 (0.6, 1.1)	23.9 (17.9, 31.0)	0.9 (0.6, 1.3)	49.6 (43.6, 55.6)	0.8 (0.6, 1.1)
Other non-Hispanic	44.6 (39.1, 50.2)	1.1 (0.8, 1.5)	27.1 (18.5, 37.9)	0.9 (0.4, 1.8)	60.0 (53.3, 66.3)	1.4 (0.9, 2.0)
Days used cigarettes, cigars, or smokeless tobacco						
30	78.0 (72.9, 82.3)	24.0 (15.6, 36.8)	69.0 (58.6, 77.8)	12.3 (6.1, 25.1)	80.2 (74.7, 84.7)	28.9 (17.6, 47.4)
20–29	65.4 (59.1, 71.1)	10.4 (7.0, 15.4)	58.1 (44.4, 70.6)	7.3 (3.6, 14.9)	66.5 (58.5, 73.7)	11.1 (6.6, 18.5)
10–19	49.2 (43.6, 54.8)	6.1 (4.3, 8.6)	43.6 (33.3, 54.5)	3.8 (2.3, 6.3)	53.8 (47.8, 59.7)	7.0 (4,4, 11.0)
6–9	46.4 (38.5, 54.5)	4.3 (2.9, 6.5)	36.3 (24.9, 49.4)	4.0 (2.2, 7.6)	51.7 (42.1, 61.2)	4.9 (3.0, 7.8)
3–5	32.0 (27.3, 37.1)	2.4 (1.7, 3.5)	26.2 (19.6, 34.2)	2.2 (1.3, 3.5)	34.2 (28.3, 40.5)	2.6 (1.6, 4.1)

	Current tobacco users[a] (*n*=3,378)		Current single-product users[b] (*n*=1,221)		Current polytobacco users[c] (*n*=1,996)	
	% (95% CI)	AOR (95% CI)	% (95% CI)	AOR (95% CI)	% (95% CI)	AOR (95% CI)
1–2	15.6 (13.1, 18.4)	1.0	13.7 (11.0, 17.1)	1.0	19.6 (15.7, 24.1)	1.0
Single product currently used						
Cigarettes only			42.6 (38.0, 47.3)	1.0		
Cigars only			6.7 (4.3, 10.3)	0.2 (0.1, 0.3)		
Smokeless only			32.2 (24.3, 41.3)	0.9 (0.6, 1.5)		
Age first used cigarettes, cigars, or smokeless tobacco (years)						
<11	54.8 (50.0, 59.4)	1.0 (0.8, 1.3)	39.9 (31.7, 48.8)	1.2 (0.7, 2.0)	64.3 (58.5, 69.6)	0.9 (0.6, 1.3)
≥11	38.6 (35.8, 41.4)	1.0	25.9 (22.3, 29.7)	1.0	47.6 (43.9, 51.3)	1.0
Polytobacco use						
Yes	51.8 (48.5, 55.0)	1.6 (1.3, 1.9)				
No	27.2 (23.9, 30.9)	1.0				

Note: All regression estimates were mutually adjusted for all covariates included in the table.

[a] Defined as use of cigarettes, cigars, or smokeless tobacco on at least 1 day during the past 30 days

[b] Defined as use of only one of the following three products on at least 1 day during the past 30 days: cigarettes, cigars, or smokeless tobacco

[c] Defined as past 30-day cigarette, cigar, or smokeless tobacco users who reported using at least 2 of those products or pipes, bidis, kreteks, hookah, snus, dissolvable tobacco or electronic cigarettes in the past 30 days

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Table 3

Characteristics associated with a strong desire to want to use tobacco during the past 30 days, 2012 National Youth Tobacco Survey

	Current tobacco users[a] (*n*=3,363)		Current single-product users[b] (*n*=1,218)		Current polytobacco users[c] (*n*=1,987)	
	% (95% CI)	AOR (95% CI)	% (95% CI)	AOR (95% CI)	% (95% CI)	AOR (95% CI)
OVERALL	23.3 (21.2, 25.5)	—	11.4 (9.5, 13.6)	—	31.0 (28.2, 34.0)	—
School type						
Middle school	26.9 (22.7, 31.7)	1.7 (1.2, 2.4)	9.0 (5.6, 14.1)	1.0 (0.5, 1.9)	40.4 (33.8, 47.4)	2.0 (1.3, 3.0)
High school	22.3 (19.9, 24.8)	1.0	11.9 (9.8, 14.4)	1.0	28.9 (25.8, 32.2)	1.0
Sex						
Female	25.0 (22.1, 28.2)	1.8 (1.5, 2.3)	15.1 (11.8, 19.1)	2.3 (1.4, 4.0)	33.3 (29.4, 37.4)	1.7 (1.3, 2.2)
Male	22.3 (20.0, 24.8)	1.0	8.5 (6.4, 11.3)	1.0	29.9 (26.6, 33.3)	1.0
Race/ethnicity						
White, non-Hispanic	24.2 (21.2, 27.5)	1.0	14.4 (12.0, 17.3)	1.0	29.9 (25.8, 34.3)	1.0
Black, non-Hispanic	15.7 (12.0, 20.3)	0.7 (0.4, 1.0)	7.2 (4.0, 12.7)	1.4 (0.7, 2.8)	26.5 (19.3, 35.1)	0.6 (0.4, 1.1)
Hispanic	24.8 (21.2, 28.7)	1.0 (0.7, 1.3)	9.0 (5.1, 15.4)	0.9 (0.5, 1.9)	32.5 (27.7, 37.6)	1.0 (0.7, 1.4)
Other non-Hispanic	24.4 (19.7, 29.8)	1.0 (0.7, 1.4)	8.2 (4.4, 14.9)	0.6 (0.3, 1.4)	36.7 (29.7, 44.2)	1.2 (0.8, 1.8)
Days used cigarettes, cigars, or smokeless tobacco						
30	52.8 (47.9, 57.6)	13.1 (8.8, 19.7)	35.4 (28.0, 43.6)	6.8 (3.5, 13.5)	56.7 (50.8, 62.4)	15.1 (9.0, 25.3)
20–29	36.7 (31.4, 42.2)	7.0 (4.6, 10.5)	34.8 (23.7, 47.9)	8.0 (3.8, 16.9)	36.4 (29.3, 44.1)	6.8 (3.8, 12.1)
10–19	20.9 (16.7, 25.9)	3.7 (2.5, 5.5)	15.7 (8.7, 26.7)	2.6 (1.2, 5.5)	24.0 (18.8, 30.2)	4.0 (2.5, 6.5)
6–9	25.5 (19.7, 32.3)	3.8 (2.3, 6.1)	10.2 (5.1, 19.3)	2.0 (0.8, 4.7)	31.9 (23.3, 42.0)	5.0 (2.8, 8.8)
3–5	14.1 (11.0, 18.0)	1.8 (1.1, 3.0)	6.7 (3.1, 14.0)	1.2 (0.5, 2.8)	17.9 (13.1, 23.9)	2.2 (1.3, 4.0)

	Current tobacco users[a] (*n*=3,363)		Current single-product users[b] (*n*=1,218)		Current polytobacco users[c] (*n*=1,987)	
	% (95% CI)	**AOR (95% CI)**	**% (95% CI)**	**AOR (95% CI)**	**% (95% CI)**	**AOR (95% CI)**
1–2	6.8 (5.3, 8.9)	1.0	5.7 (4.0, 8.0)	1.0	9.2 (6.5, 12.9)	1.0
Single product currently used						
Cigarettes only			18.5 (15.4, 22.2)	1.0		
Cigars only			2.3 (1.3, 4.1)	0.2 (0.1, 0.3)		
Smokeless only			12.7 (8.0, 19.6)	1.0 (0.5, 2.1)		
Age first used cigarettes, cigars, or smokeless tobacco (years)						
<11	41.9 (37.8, 46.0)	1.9 (1.5, 2.5)	21.9 (15.5, 29.9)	1.7 (0.9, 3.2)	51.7 (47.2, 56.1)	2.0 (1.5, 2.6)
≥11	17.7 (15.6, 20.0)	1.0	10.1 (8.1, 12.4)	1.0	23.2 (20.1, 26.6)	1.0
Polytobacco use						
Yes	31.0 (28.2, 34.0)	1.9 (1.4, 2.4)				
No	11.4 (9.5, 13.6)	1.0				

Note: All regression estimates were mutually adjusted for all covariates included in the table.

[a]Defined as use of cigarettes, cigars, or smokeless tobacco on at least 1 day during the past 30 days

[b]Defined as use of only one of the following three products on at least 1 day during the past 30 days: cigarettes, cigars, or smokeless tobacco

[c]Defined as past 30-day cigarette, cigar, or smokeless tobacco users who reported using at least 2 of those products or pipes, bidis, kreteks, hookah, snus, dissolvable tobacco or electronic cigarettes in the past 30 days

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Table 4

Characteristics associated with sometimes/often/always feeling irritable or restless when not using tobacco for a while, 2012 National Youth Tobacco Survey

	Current tobacco users[a] (*n*=3,356)		Current single-product users[b] (*n*=1,213)		Current polytobacco users[c] (*n*=1,988)	
	% (95% CI)	AOR (95% CI)	% (95% CI)	AOR (95% CI)	% (95% CI)	AOR (95% CI)
OVERALL	34.9 (32.5, 37.5)	—	22.8 (20.0, 25.9)	—	43.3 (40.0, 46.7)	—
School type						
Middle school	34.7 (30.1, 39.7)	1.4 (1.1, 1.9)	18.2 (12.5, 25.6)	1.1 (0.6, 2.1)	47.8 (40.8, 55.0)	1.6 (1.1, 2.4)
High school	34.8 (32.1, 37.6)	1.0	23.8 (20.9, 27.1)	1.0	42.3 (38.8, 45.9)	1.0
Sex						
Female	38.6 (34.8, 42.6)	2.0 (1.6, 2.6)	29.5 (24.7, 34.7)	2.1 (1.3, 3.5)	46.5 (41.4, 51.6)	1.8 (1.3, 2.5)
Male	32.8 (30.1, 35.5)	1.0	17.7 (14.2, 21.9)	1.0	41.7 (37.9, 45.6)	1.0
Race/ethnicity						
White, non-Hispanic	37.6 (34.4, 41.0)	1.0	26.5 (22.4, 31.0)	1.0	44.0 (39.5, 48.6)	1.0
Black, non-Hispanic	24.5 (19.5, 30.2)	0.7 (0.5, 1.1)	14.5 (9.0, 22.5)	1.1 (0.5, 2.1)	40.8 (30.4, 52.0)	0.8 (0.5, 1.3)
Hispanic	33.7 (29.1, 38.5)	0.9 (0.7, 1.2)	23.7 (16.5, 32.9)	1.3 (0.8, 2.4)	39.2 (34.3, 44.2)	0.8 (0.6, 1.1)
Other non-Hispanic	37.6 (32.6, 43.0)	1.2 (0.9, 1.6)	22.8 (15.5, 32.4)	1.0 (0.5, 2.0)	49.4 (42.0, 56.8)	1.4 (0.9, 2.0)
Days used cigarettes, cigars, or smokeless tobacco						
30	70.0 (65.6, 74.1)	18.1 (13.1, 25.0)	63.9 (54.2, 72.6)	13.0 (7.0, 24.0)	72.1 (67.0, 76.7)	19.4 (13.0, 28.9)
20–29	56.6 (50.1, 62.9)	9.0 (6.0, 13.5)	56.4 (42.6, 69.3)	9.9 (4.7, 20.6)	56.0 (48.1, 63.6)	8.5 (5.2, 13.8)
10–19	43.1 (38.2, 48.2)	5.5 (4.0, 7.7)	37.2 (28.3, 47.1)	4.3 (2.6, 7.0)	46.7 (39.3, 54.1)	5.8 (3.8, 9.0)
6–9	32.1 (26.2, 38.7)	2.9 (2.0, 4.1)	24.5 (15.9, 35.8)	2.6 (1.4, 4.8)	35.5 (27.9, 43.9)	3.1 (2.0, 4.7)
3–5	21.2 (17.3, 25.7)	1.9 (1.4, 2.7)	19.3 (12.5, 28.6)	1.7 (1.0, 3.1)	23.2 (18.4, 28.7)	1.9 (1.3, 2.9)

	Current tobacco users[a] (*n*=3,356)		Current single-product users[b] (*n*=1,213)		Current polytobacco users[c] (*n*=1,988)	
	% (95% CI)	AOR (95% CI)	% (95% CI)	AOR (95% CI)	% (95% CI)	AOR (95% CI)
1–2	12.7 (10.5, 15.3)	1.0	11.2 (8.4, 14.7)	1.0	15.6 (12.1, 19.9)	1.0
Single product currently used						
Cigarettes only			35.9 (31.6, 40.4)	1.0		
Cigars only			7.8 (4.9, 12.2)	0.2 (0.1, 0.4)		
Smokeless only			21.9 (15.8, 29.5)	0.6 (0.4, 1.0)		
Age first used cigarettes, cigars, or smokeless tobacco (years)						
<11	48.9 (43.4, 54.3)	1.2 (0.9, 1.7)	31.8 (24.5, 40.1)	1.0 (0.6, 1.7)	57.7 (50.6, 64.4)	1.1 (0.8, 1.7)
≥11	31.0 (28.3, 33.7)	1.0	21.8 (18.8, 25.1)	1.0	38.3 (34.6, 42.1)	1.0
Polytobacco use						
Yes	43.3 (40.0, 46.7)	1.3 (1.1, 1.6)				
No	22.8 (20.0, 25.9)	1.0				

Note: All regression estimates were mutually adjusted for all covariates included in the table.

[a] Defined as use of cigarettes, cigars, or smokeless tobacco on at least 1 day during the past 30 days

[b] Defined as use of only one of the following three products on at least 1 day during the past 30 days: cigarettes, cigars, or smokeless tobacco

[c] Defined as past 30-day cigarette, cigar, or smokeless tobacco users who reported using at least 2 of those products or pipes, bidis, kreteks, hookah, snus, dissolvable tobacco or electronic cigarettes in the past 30 days

Table 5

Characteristics associated with first time to want to use tobacco within 30 minutes of waking, 2012 National Youth Tobacco Survey

	Current tobacco users[a] (*n*=3,366)		Current single-product users[b] (*n*=1,217)		Current polytobacco users[c] (*n*=1,992)	
	% (95% CI)	AOR (95% CI)	% (95% CI)	AOR (95% CI)	% (95% CI)	AOR (95% CI)
OVERALL	20.8 (18.6, 23.1)	—	8.1 (6.4, 10.2)	—	29.5 (26.2, 33.1)	—
School type						
Middle school	18.9 (15.4, 22.9)	1.2 (0.8, 1.9)	3.9 (2.0, 7.3)	0.9 (0.4, 2.2)	30.4 (25.3, 36.0)	1.3 (0.8, 2.2)
High school	20.9 (18.5, 23.5)	1.0	8.9 (7.0, 11.4)	1.0	29.0 (25.5, 32.8)	1.0
Sex						
Female	20.2 (17.3, 23.4)	1.7 (1.2, 2.2)	9.5 (6.7, 13.3)	1.4 (0.6, 3.2)	29.4 (25.2, 34.1)	1.6 (1.2, 2.2)
Male	21.1 (18.7, 23.7)	1.0	7.0 (4.6, 10.4)	1.0	29.6 (25.9, 33.5)	1.0
Race/ethnicity						
White, non-Hispanic	21.8 (18.7, 25.2)	1.0	11.4 (8.6, 15.0)	1.0	28.3 (23.7, 33.5)	1.0
Black, non-Hispanic	14.2 (10.2, 19.3)	1.0 (0.6, 1.7)	4.3 (2.0, 8.9)	1.2 (0.4, 3.9)	29.5 (20.5, 40.6)	1.2 (0.6, 2.5)
Hispanic	22.4 (18.6, 26.7)	1.1 (0.8, 1.6)	__[d]	0.6 (0.2, 2.0)	31.1 (26.2, 36.4)	1.2 (0.9, 1.8)
Other non-Hispanic	21.9 (17.4, 27.3)	1.1 (0.7, 1.7)	6.0 (2.7, 12.7)	0.6 (0.2, 2.0)	33.5 (26.1, 41.9)	1.3 (0.8, 2.2)
Days used cigarettes, cigars, or smokeless tobacco						
30	62.3 (57.7, 66.6)	59.6 (37.9, 93.7)	41.9 (32.0, 52.4)	43.0 (18.6, 99.4)	67.3 (62.2, 72.1)	54.0 (31.7, 92.1)
20–29	31.2 (25.7, 37.2)	16.3 (10.4, 25.5)	27.1 (16.7, 41.0)	22.8 (9.0, 57.7)	32.8 (26.4, 39.9)	12.4 (7.4, 20.9)
10–19	14.9 (11.3, 19.3)	7.3 (4.3, 12.2)	12.3 (6.6, 21.6)	10.1 (3.8, 26.9)	16.9 (12.3, 22.7)	5.5 (3.1, 9.8)
6–9	12.1 (8.2, 17.6)	4.5 (2.7, 7.7)	__[d]	3.1 (0.8, 12.6)	17.2 (11.0, 25.8)	4.3 (2.2, 8.5)
3–5	9.2 (6.4, 13.0)	3.7 (2.0, 6.7)	__[d]	4.6 (1.2, 17.6)	12.1 (8.4, 17.1)	3.1 (1.5, 6.4)

	Current tobacco users[a] (*n*=3,366)		Current single-product users[b] (*n*=1,217)		Current polytobacco users[c] (*n*=1,992)	
	% (95% CI)	AOR (95% CI)	% (95% CI)	AOR (95% CI)	% (95% CI)	AOR (95% CI)
1–2	2.4 (1.7, 3.5)	1.0	1.1 (0.5, 2.3)	1.0	4.4 (2.8, 6.9)	1.0
Single product currently used						
Cigarettes only			13.7 (10.6, 17.5)	1.0		
Cigars only			—[d]	0.1 (0.0, 0.4)		
Smokeless only			9.0 (4.9, 16.2)	0.6 (0.2, 1.5)		
Age first used cigarettes, cigars, or smokeless tobacco (years)						
<11	38.5 (33.9, 43.3)	1.8 (1.4, 2.3)	16.9 (10.7, 25.6)	1.9 (0.9, 3.8)	49.4 (44.1, 54.7)	1.7 (1.3, 2.3)
≥11	15.2 (13.3, 17.4)	1.0	6.9 (5.2, 9.1)	1.0	21.6 (18.6, 25.0)	1.0
Polytobacco use						
Yes	29.5 (26.2, 33.1)	2.3 (1.6, 3.1)				
No	8.1 (6.4, 10.2)	1.0				

Note: All regression estimates were mutually adjusted for all covariates included in the table.

[a] Defined as use of cigarettes, cigars, or smokeless tobacco on at least 1 day during the past 30 days

[b] Defined as use of only one of the following three products on at least 1 day during the past 30 days: cigarettes, cigars, or smokeless tobacco

[c] Defined as past 30-day cigarette, cigar, or smokeless tobacco users who reported using at least 2 of those products or pipes, bidis, kreteks, hookah, snus, dissolvable tobacco or electronic cigarettes in the past 30 days

[d] Estimate was suppressed; the estimate's relative SE was 40% or greater or the denominator was less than 50.