Title

American Legacy Foundation, The relationship between Cigarette Use and Other Tobacco Products. Results from The 2000 National Tobacco Survey

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FIRST LOOK REPORT 10

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The Relationship between Cigarette Use and Other Tobacco Products

RESULTS FROM THE 2000 NATIONAL YOUTH TOBACCO SURVEY

PREAMBLE

In November 1998, Americans won an unprecedented victory in our nation's century-long fight against tobacco use and abuse. A coalition of 46 state Attorneys General successfully settled their cases with the tobacco companies, amounting to $206 billion over the first 25 years. As part of the Master Settlement Agreement (MSA), a 501(c)(3) organization was established to reduce tobacco usage in the United States. This organization is now known as the American Legacy Foundation.

Legacy's Board of Directors consists of a diverse mix of state governors, legislators, Attorneys General, and experts in the medical, education, and public health fields:

PURPOSE OF THE FIRST LOOK REPORT SERIES

The purpose of the First Look Report Series is to provide brief research findings from the National Youth Tobacco Surveys and other tobacco use surveys. The series will cover a wide range of topics, including tobacco use behaviors, attitudes and beliefs about tobacco, pro- and countertobacco marketing efforts, results of the American Legacy Foundation initiatives, and other policies and programs related to tobacco use.

Dear Colleague:

This report, based on 2000 National Youth Tobacco Survey (NYTS) data, presents prevalence estimates for current use of smokeless tobacco, cigars, bidis, kreteks, and pipes among youth in the United States. It also highlights the strong relationship between smoking and use of other tobacco products.

The NYTS is the only national youth survey to monitor use of this wide variety of "other" tobacco products. Over 35,000 youth participated in the 2000 survey, which provides nationally representative estimates for African-American, Hispanic, and Asian-American as well as non-Latino White youth. The NYTS enables the tobacco control community and the public at large to track use of popular and emerging tobacco products and to identify youth at risk for initiating use of particular products.

Race/ethnicity plays a distinct role in determining use of certain tobacco products. For example, while overall prevalence of cigar use is approximately 15% among high school students, rates of use are highest among White and African-American youth (15% and 16%, respectively). In contrast, African-American youth are significantly less likely than White youth to use smokeless tobacco (8% among White students, 3% among African-American students). At 4%, use of bidis is less common than either cigar or smokeless tobacco use. However, both African-American and Hispanic youth are significantly more likely than White youth to report use of bidis.

Most students do not use tobacco. Among those who do, however, a substantial number report use of more than one product during the past month. Among youth in middle school, 7% report use of only one product (including cigarettes), 3% report use of two, and 3% report use of three or more distinct tobacco products during the past month. Among youth in high school, 18% report use of one product, 9% report using two, and 5% report use of three or more products in the past month.

Although cigarettes continue to be the primary form of tobacco used by young people in the United States, this report provides another critical piece of the tobacco use picture. Other tobacco products are used daily in both high schools and middle schools across the country, and many youth are using these products in addition to cigarettes. I hope this report will contribute to your understanding of the problem of tobacco use among youth, and will be of value to you in your work.

Sincerely,

Cheryl G. Healton, DrPH
President/CEO
American Legacy Foundation

INNOVATIVE AND EVIDENCE-BASED PROGRAMS

MARKETING AND EDUCATION

The most visible of Legacy's efforts to date is the **truth**[sm] campaign. The **truth**[sm] campaign is aimed at reducing tobacco use among youths aged 12 to 17 who are most open to using tobacco. Modeled after successful teen brands, this multicultural countermarketing program incorporates advertising, Internet, grassroots, and public relations components and gives teens a voice in the effort.

APPLIED RESEARCH AND EVALUATION

The Applied Research and Evaluation team is composed of Legacy staff and colleagues from RTI, Legacy's Research and Evaluation Coordinating Center. Efforts include conducting two national surveys to document the tobacco-related beliefs, attitudes, and behavior of American youths, and the effectiveness of the **truth**[sm] campaign. The team evaluates all internal and Legacy-funded programs. The research program also provides funding for outside research in specific areas of tobacco control.

GRANTS

Legacy's grants program is designed to build on existing tobacco control efforts, leverage resources, and spark new tobacco control initiatives. Awards totalling over $59 million have been announced to states and organizations to develop youth empowerment programs, programs to reduce disparities in tobacco control experienced by priority populations, and small innovative or research demonstration programs.

PRIORITY POPULATIONS

Legacy is committed to addressing the needs of populations that have been disproportionately burdened by the epidemic of tobacco in America. To identify promising practices, culturally appropriate approaches, and resource gaps, Legacy convened six national Priority Population forums in 2000 among tobacco control experts who represented underserved populations. Their recommendations form the basis for the Priority Populations Initiative, which makes available up to $21 million over 3 years for capacity-building grants and innovative projects and applied research grants.

TRAINING AND TECHNICAL ASSISTANCE

Legacy is committed to providing high quality and best practices based training and technical assistance to its grantees, local and state entities, and others who are working in the tobacco control movement. In addition, Legacy's training and technical assistance team coordinates a range of Youth Activism Projects and is a major funder and collaborator for the National Tobacco Training and Assistance Consortium.

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FIRST LOOK REPORT 10

The Relationship between Cigarette Use and Other Tobacco Products: Results from the 2000 National Youth Tobacco Survey

CONTENTS

This report was written by Jeanne S. Ringel, PhD[§], Jeffrey Wasserman, PhD[§], and Rosalie Liccardo Pacula, PhD[§].

The authors would like to acknowledge the contributions of Matthew C. Farrelly, PhD* and Jane Allen, MA[†], who reviewed drafts of this report.

The authors are also grateful to Marika Suttorp for providing statistical support, Andrew Jessup for graphic design, Susan Murchie for editorial review, and to all the schools in the survey for their cooperation.

The NYTS questionnaire was developed by the CDC Foundation and Macro International Inc. with technical support from the Office on Smoking and Health, CDC. Macro developed and implemented the NYTS sampling design, recruited schools, managed data collection and processing, and weighted the data with technical support from the Office on Smoking and Health.

*RTI [†]American Legacy Foundation [§]RAND

INTRODUCTION

Reducing tobacco use among youth is one of the American Legacy Foundation's (Legacy's) four primary goals. In thinking about how this goal can be achieved, policy makers tend to focus on cigarettes rather than on the full range of tobacco products. This focus is not unreasonable given that cigarettes are the most common form of tobacco used by youth. However, the prevalence rates for tobacco products other than cigarettes are not trivial, particularly for cigars and smokeless tobacco. Moreover, the negative health effects associated with the use of these products are significant. Research has shown that cigar smokers and smokeless tobacco users face an increased risk of death compared with people who do not use tobacco products (e.g., see Shapiro, Jacobs, and Thun, 2000; Iribarren, 2000; USDHHS, 1986). Moreover, bidis—small brown cigarettes that come in exotic flavors, such as mango, root beer, and strawberry—"produce more than three times the amount of carbon monoxide and nicotine and more than five times the amount of tar than one cigarette" (CDC, 1999).

Further, the use of tobacco products other than cigarettes is much higher among current cigarette smokers than among nonsmokers. This fact suggests that there is potentially an important relationship between the use of cigarettes and other tobacco products that needs to be examined in order to design a comprehensive policy to reduce tobacco use among youth. With this in mind, the National Youth Tobacco Survey (NYTS) was designed to obtain information about all of the major tobacco products that youth may choose to use. NYTS data are therefore an important source of information about the use of a variety of tobacco products and should be used to guide future research and policy design.

This report presents data from the 2000 NYTS that describe the use of tobacco products, other than cigarettes, among a nationally representative sample of middle and high school students. The report also examines the relationship between cigarette use and the use of other tobacco products. All of the analyses in the report are stratified by demographic characteristics, such as grade level, gender, and race/ethnicity. Further, the report compares the findings from the 2000 NYTS with findings from the 1999 NYTS.[1] The comparison over time identifies potential trends in the use of other tobacco products. While we believe that the comparisons across years provide important and interesting results, they should be considered carefully. First, it is important to keep in mind that the 1999 and 2000 NYTS were not fielded a full year apart. Thus, very little change in prevalence rates should be expected between the two surveys. Second, since the prevalence of use of tobacco products increases with age, it is likely that many of the differences that are observed between the 1999 and 2000 NYTS data can be explained in part by the aging of the survey respondents between the fall (when the 1999 survey was fielded) and the spring (when the 2000

[1]Findings from the 1999 NYTS are reported in *Legacy First Look Report 4. The Relationship between Cigarette Use and Other Tobacco Products: Results from the 1999 National Youth Tobacco Survey* (Ringel, Pacula, and Wasserman, 2000).

survey was fielded).[2] The tobacco products considered in this report are cigars, smokeless tobacco, pipes, bidis, and kreteks.[3] The two central questions and main findings discussed in the report are summarized below.

1. ***What is the prevalence of other tobacco product use among youth?***
   - Many youth appear to experiment with a range of tobacco products. That is, the percentage of youth who report ever trying various tobacco products is much larger than the percentage who report current use.
   - Approximately 13 percent of middle school students and 32 percent of high school students in the 2000 NYTS report using at least one tobacco product (including cigarettes) in the past 30 days. These prevalence rates represent a slight increase over those estimated from the 1999 data.
   - A significant portion of middle school students (9.9 percent) and high school students (20.6 percent) report having used a tobacco product other than cigarettes in the past 30 days.
   - As in 1999, cigars are the most prevalent other tobacco product used by youth in the NYTS, with smokeless tobacco a distant second. Bidis, kreteks, and pipes are the least prevalent tobacco products used by youth in the 2000 NYTS.
   - For all tobacco products considered, except pipe tobacco, the rate of current use is higher among high school students than among middle school students. For pipes, the current rate between the two age groups is very similar.
   - Interesting patterns of use across racial/ethnic groups are observed in the data; however, these patterns are not constant across products. Among middle school students, for example, African-Americans are more likely than their White, Hispanic, and Asian-American[4] counterparts to report that they are currently using a tobacco product (including cigarettes). Among high school students, however, White students' use of tobacco products far exceeds use by students from all other racial/ethnic groups.
2. ***What is the relationship between the use of cigarettes and the use of other tobacco products?***
   - Current smokers are far more likely than nonsmokers to report the use of other tobacco products in the past 30 days.
   - Middle school and high school students who report using any tobacco products are more likely to report using a single product than using multiple products.

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[2]When making comparisons across the 1999 and 2000 NYTS, we look at two different measures of use rates for middle school and high school students. The first rate, which is reported in the text and the tables, defines the two samples based on school grades. Grades 6 to 8 are considered middle school, and grades 9 to 12 are considered high school. To account for the aging of students between the fall and spring, we also create age-specific definitions of middle school and high school. The middle school sample is composed of youth aged 11 to 14, and the high school sample is made up of individuals aged 15 to 18.

[3]Smokeless tobacco products include chewing tobacco, snuff, and dip. Cigarillos and little cigars are included in the same category as cigars. Bidis are small brown cigarettes that are hand-rolled in a tendu or temburni leaf and tied at one end with a string. Kreteks are a combination of tobacco and clove spices and are often called clove cigarettes.

[4]Throughout the report, the racial/ethnic category of Asian-Americans includes Asians and Pacific Islanders.

2000 NATIONAL YOUTH TOBACCO SURVEY

The 2000 NYTS was administered to 35,828 middle school and high school students in grades 6 through 12 in 324 schools across the United States. Participating students completed an anonymous, self-administered survey that included questions about tobacco use, exposure to secondhand smoke, minors' ability to purchase tobacco products, the price paid for cigarettes, knowledge and attitudes about tobacco, and familiarity with pro- and counter-tobacco marketing.

The NYTS was designed to produce a nationally representative sample of students in grades 6 to 12. To ensure separate analysis of African-American, Hispanic, and for the first time, Asian-American students, schools with substantial proportions of these racial/ethnic groups were oversampled in the 2000 NYTS. A weighting factor was applied to each student to adjust for nonresponse and for the probability of selection, including oversampling of African-American, Hispanic, and Asian-American students.

PREVALENCE OF TOBACCO PRODUCTS USE

Because the main purpose of the NYTS is to evaluate patterns of youth tobacco use, the survey contains detailed questions pertaining to the use of specific tobacco products besides cigarettes. Table 1 summarizes the questions that served as the basis for this report.

Table 1. 2000 NYTS Questions Pertaining to Use of Tobacco Products Other than Cigarettes

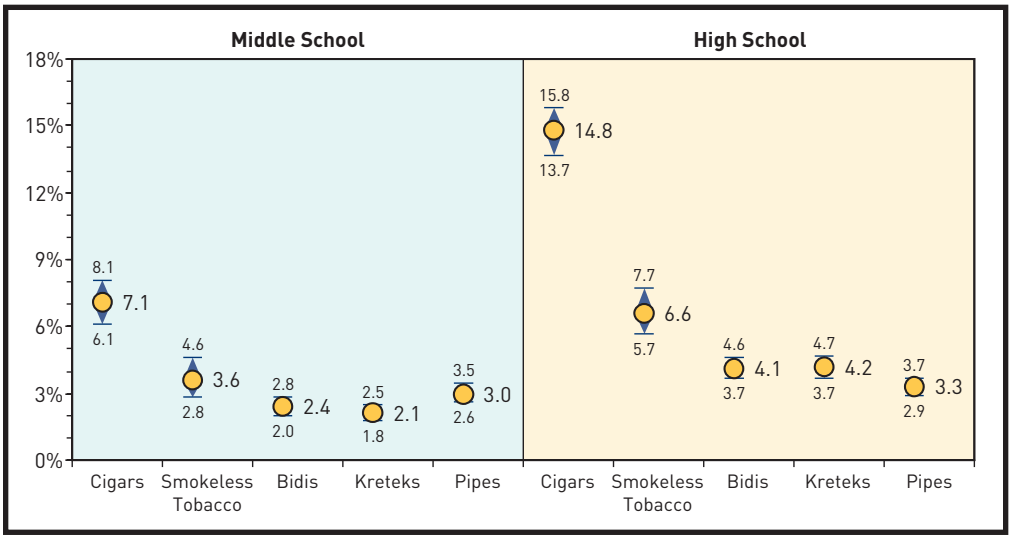
Smokeless Tobacco:	**Q37:** Have you ever tried chewing tobacco, snuff, or dip, such as Redman, Levi Garrett, Beechnut, Skoal, Skoal Bandits, or Copenhagen?
	Q39: During the past 30 days, on how many days did you use chewing tobacco, snuff, or dip?
Cigars:	**Q41:** Have you ever tried smoking cigars, cigarillos, or little cigars, even one or two puffs?
	Q43: During the past 30 days, on how many days did you smoke a cigar, cigarillo, or little cigar?
Bidis:	**Q46:** Have you ever tried smoking bidis, even one or two puffs?
	Q47: During the past 30 days, on how many days did you smoke bidis?
Kreteks:	**Q48:** Have you ever tried smoking kreteks, even one or two puffs?
	Q49: During the past 30 days, on how many days did you smoke kreteks?
Pipes:	**Q44:** Have you ever tried smoking tobacco in a pipe, even one or two puffs?
	Q45: During the past 30 days, on how many days did you smoke tobacco in a pipe?

Note: Questions regarding ever trying kreteks or pipes are new in the 2000 NYTS.

From these questions, we constructed two measures of prevalence: (1) lifetime use of each product and (2) current use of each product. Lifetime use is defined as having ever tried the tobacco product, and current use is defined as having used the product on at least one occasion in the past 30 days. As noted in Table 1, the 2000 NYTS includes an expanded set of questions regarding the lifetime use of kreteks and pipes. The new questions help to provide a more complete picture of youth's use of other tobacco products. Key findings and comparisons with results from the 1999 NYTS are highlighted in the text of this report. All differences across sample subgroups that are reported in the text are statistically significant at the 95 percent confidence level unless otherwise noted. In the text of the report, we provide data for the subgroups we discuss. Detailed tables of the results are provided in Appendix A. Tables A-1 and A-2 present prevalence rates and confidence intervals for lifetime use and current use of various tobacco products, respectively. Table A-3 includes data on the use of multiple tobacco products, and Table A-4 presents current use rates of tobacco products by current cigarette smoking status. All of the results broken down by age group and gender that are discussed in the text of the report can be found in the detailed appendix tables.

Figure 1 summarizes the prevalence of current use of each tobacco product by middle school and high school students. The rate of current use of each tobacco product, except for pipes, is higher among high school students than among middle school students. In addition, interesting differences across demographic groups underlie these general prevalence rates. As such, we examine the use of other tobacco products in more detail below.

Figure 1: Prevalence of Current Use of Tobacco Products Other than Tobacco



Note: Upper and lower ranges represent 95 percent confidence intervals that account for the survey design weighting.

PREVALENCE OF CIGAR USE

Over the past few years, the popularity of cigars has grown substantially (see Gilpin and Pierce, 1999; Satcher, 1999). The stereotypical cigar smoker has been transformed from a stodgy old man into a young hip twenty-something. The trendy nature of cigars is reflected in the prevalence rates among youth in the NYTS, where cigars are the most commonly used form of tobacco other than cigarettes. The high rates of current use are shown in Figure 2. Interesting patterns of use across demographic lines are summarized below.

Slightly over 40 percent of high school students and 19 percent of middle school students have tried cigars. Current use rates, however, are significantly lower (14.8 percent for high school students and 7.1 percent for middle school students).

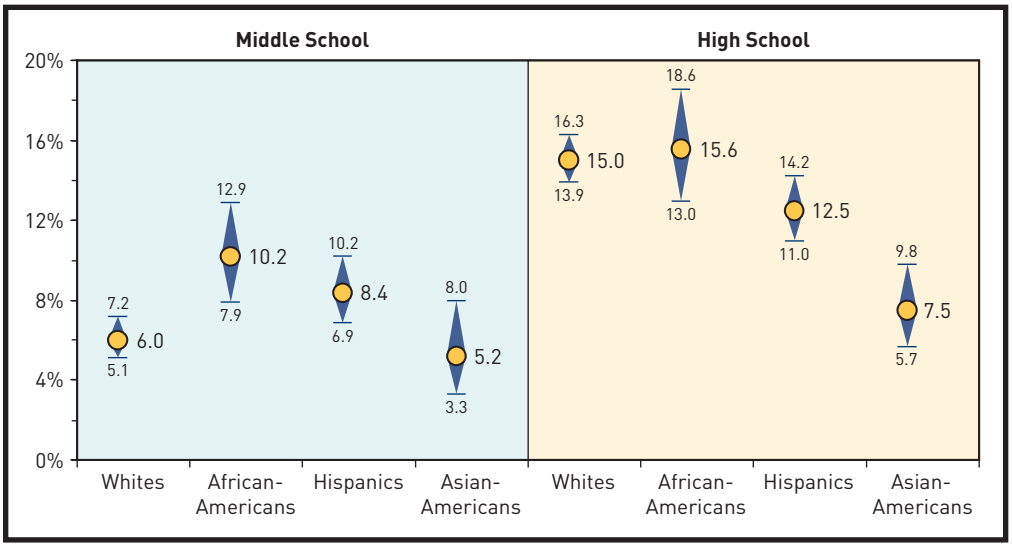
Among middle school students, Asian-Americans are the least likely of all racial/ethnic groups to report ever trying cigars (10.3 percent for Asian-Americans compared with 18.5 percent for Whites, 22.3 percent for African-Americans, and 22.0 percent for Hispanics). With regard to current use, Asian-American and White middle school students have the lowest prevalence rates (5.2 percent for Asian-Americans and 6.0 percent for Whites compared with 10.2 percent for African-Americans and 8.4 percent for Hispanics). Although the rate for Hispanics is higher than for Asian-Americans and Whites, the difference is not statistically significant.

Furthermore, interesting differences in patterns of use across racial/ethnic groups are seen among high school students. Asian-American students have the lowest rates of both lifetime and current cigar use across all racial/ethnic groups. Lifetime use rates are highest among White high school students (44.0 percent for Whites compared with 36.6 for African-Americans, 38.0 percent for Hispanics, and 24.5 percent for Asian-Americans). In contrast, current use rates are highest among African-Americans, although the difference between the rates for African-Americans (15.6 percent) and Whites (15.0 percent) is not statistically significant. Hispanics (12.5 percent) and Asian-Americans (7.5 percent) report somewhat lower rates of current use.

Regardless of age, females are much less likely to report either lifetime or current use of cigars. Among middle school students, the current use rate for females (4.6 percent) is only one-half the rate for males (9.7 percent). The difference is even more pronounced among high school students, where the current use rate for females (7.3 percent) is only one-third the rate for males (22.0 percent). (Prevalence data broken down by gender are presented in Appendix Tables A-1 and A-2.)

The most notable difference between results from the 2000 NYTS and the 1999 NYTS is in the percentage of middle school students who report having ever used cigars. In 2000, 19.3 percent report lifetime use as compared with 15.4 percent in 1999. As was the case for smokeless tobacco, the difference in lifetime use across the two years of data can be explained by the aging of the sample.

Figure 2: Prevalence of Current Cigar Use



Note: Upper and lower ranges represent 95 percent confidence intervals that account for the survey design weighting.

PREVALENCE OF SMOKELESS TOBACCO USE

Excluding cigarettes, the prevalence of smokeless tobacco use among youth is second only to cigars. The high prevalence rates relative to other products, such as bidis and kreteks, may in part reflect the fact that smokeless tobacco is more widely available, as it is sold in a greater variety of stores. The fact that many sports figures, particularly in baseball, are seen using smokeless tobacco may contribute to the sentiment that chewing is a more socially acceptable form of tobacco use. The 2000 NYTS data allow us to examine the patterns of smokeless tobacco use in great detail. Figure 3 presents current smokeless tobacco use rates stratified by race/ethnicity.

In particular, we find that high school students (18.0 percent) are more likely than middle schools students (9.5 percent) to have ever used smokeless tobacco products. Rates of current use show the same pattern, although the current use rates are just over one-third of lifetime use rates (6.6 percent for high school and 3.6 percent for middle school).

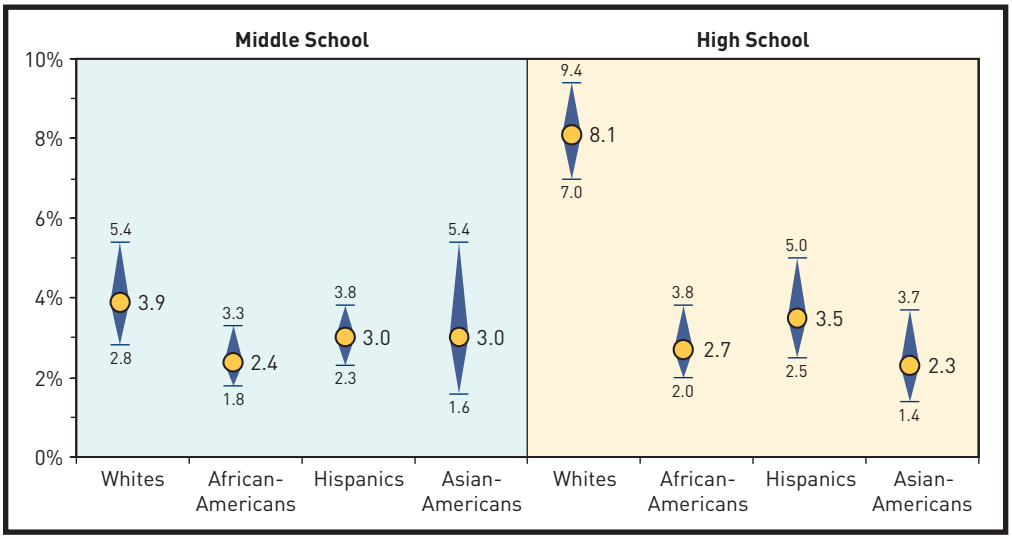
Among middle school students, Whites are the most likely to report having ever used smokeless tobacco (10.7 percent for Whites, 6.1 percent for African-Americans, 6.9 percent for Hispanics, and 5.5 percent for Asian-Americans). In contrast, there are no significant differences in the rates of current use among middle school students across demographic groups.

Among high school students, Whites report considerably higher rates of lifetime and current use of smokeless tobacco products than any other racial/ethnic group. Slightly over 8 percent of White high school students report current use of smokeless tobacco products. In comparison, only 2.7 percent of African-Americans, 3.5 percent of Hispanics, and 2.3 percent of Asian-Americans are current users.

Males across both age groups are more likely than females to report lifetime or current use of smokeless tobacco products. Among middle school students, males (5.7 percent) are nearly four times more likely than females (1.5 percent) to report current use. The difference is more striking for high school students, where males (11.8 percent) are approximately nine times more likely than females (1.4 percent) to report current use. (Prevalence data broken down by gender are presented in Appendix Tables A-1 and A-2.)

A comparison of results across the two years of the NYTS shows an increase in the percentage of middle school students who have ever used smokeless tobacco products (7.1 percent in 1999 compared with 9.5 percent in 2000). However, the difference between 1999 and 2000 appears to be driven by the aging of the sample between the fall and the spring. When we examined age-specific use rates, the difference between the two years was not statistically significant.

Figure 3: Prevalence of Current Smokeless Tobacco Use



Note: Upper and lower ranges represent 95 percent confidence intervals that account for the survey design weighting.

PREVALENCE OF BIDI USE

The overall prevalence of bidi use is relatively low compared with smokeless tobacco and cigars. Although bidis are typically less expensive than regular cigarettes, they are less widely available. Most grocery store and convenience store chains do not sell bidis. Rather, tobacco specialty shops are the main source of these exotic flavored cigarettes. Figure 4 presents current bidi use rates for both middle and high school students. The most notable results regarding bidi use are highlighted below.

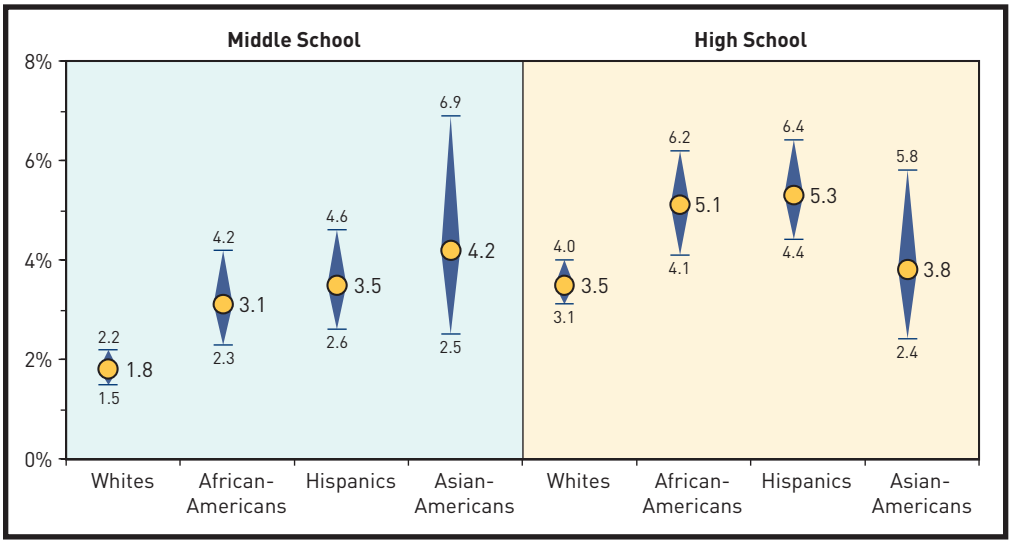
Middle school students are much less likely than high school students to have ever tried bidis (4.4 percent compared to 12.8 percent) or to be current users (2.4 percent compared to 4.1 percent). Bidi use varies by race/ethnicity. Among middle school

students, Whites (3.5 percent) are less likely than African-Americans (5.7 percent), Hispanics (6.2 percent), and Asian-Americans (5.2 percent) to have ever tried bidis. The difference between Whites and Asian-Americans is not statistically significant, however. When considering current use among middle school students, a similar pattern across racial/ethnic groups emerges. This pattern in the rates of lifetime and current use of bidis across racial/ethnic groups is also seen in high school students.

Young men in both age groups are more likely than young women to report use of bidis. Among high school students, 15.7 percent of males and 9.9 percent of females report having tried bidis. Rates of current use are significantly lower (5.4 percent for males and 2.8 percent for females). A similar pattern across genders is seen for middle school students.

The most notable difference in bidi use between the 1999 and 2000 NYTS is found for high school females. The rate of current use in this group fell from 4.0 percent to 2.8 percent between 1999 and 2000, which represents a marginally statistically significant change in prevalence. In addition, we find a similar reduction in the age-specific use rate. As such, this result may signal a downward trend in bidi use among high school females. However, bidi use was relatively constant among the other subgroups of the population.

Figure 4: Prevalence of Current Bidi Use



Note: Upper and lower ranges represent 95 percent confidence intervals that account for the survey design weighting.

PREVALENCE OF KRETEK USE

Current use rates for kreteks, often referred to as clove cigarettes, are summarized in Figure 5. As seen in the figure, current use of kreteks among youth in the NYTS varies by age and race/ethnicity.

High school students (12.1 percent) are much more likely than middle school students (3.6 percent) to report having tried kreteks. Although current use rates are

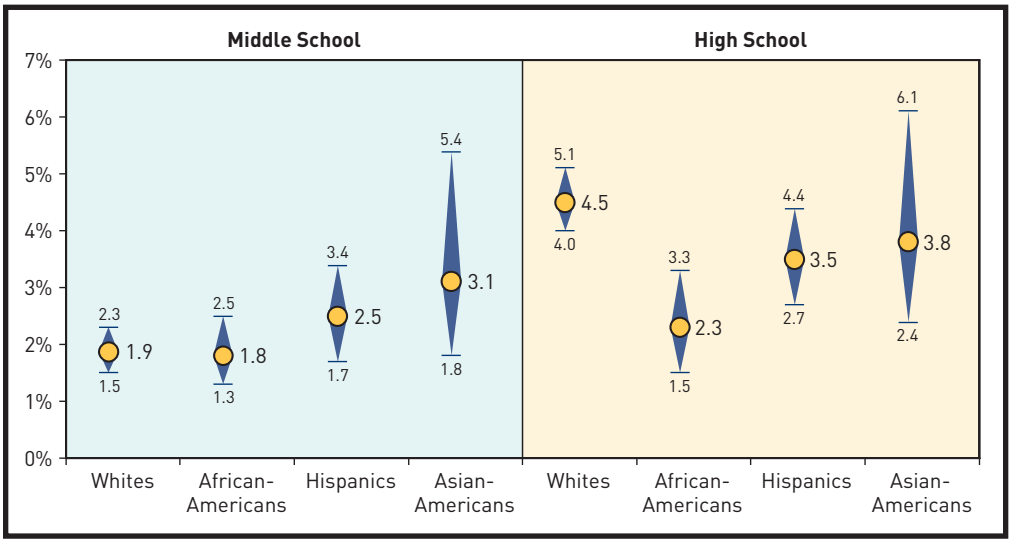
also higher for high school students than for middle school students, the difference between the two age groups is much less striking (4.2 percent compared to 2.1 percent), although still statistically significant.

Rates of lifetime and current use of kreteks are very similar across racial/ethnic groups among middle school students. In contrast, among high school students, White youth are much more likely than any other racial/ethnic group to report trying kreteks (14.4 percent of Whites compared with 4.6 percent of African-Americans, 8.6 percent of Hispanics, and 7.7 percent of Asian-Americans). A similar pattern is observed in the rates of current use, although it is less pronounced. Further, the only difference that is statistically significant is current use of kreteks between White students and African-American students.

In both age groups, males are more likely than females to have tried kreteks as well as to be current users. Among middle school students, 2.7 percent of males report current use as compared with 1.5 percent of females. The relative magnitude of current use rates across genders is very similar for high school students (5.3 percent of males compared with 3.0 percent of females). (Prevalence data broken down by gender are presented in Appendix Tables A-1 and A-2.)

There has been a statistically significant decline in the overall rate of current use of kreteks among high school students between 1999 and 2000 (from 5.8 percent in 1999 to 4.2 percent in 2000). The difference across years remains when age-specific use rates are considered. There are no measures of lifetime use of kreteks from the 1999 NYTS from which to make a comparison.

Figure 5: Prevalence of Current Kretek Use



Note: Upper and lower ranges represent 95 percent confidence intervals that account for the survey design weighting.

PREVALENCE OF PIPE USE

Only a small proportion of youth in the NYTS report smoking tobacco in a pipe. Current use rates for pipe tobacco are summarized in Figure 6. Unlike the other

tobacco products considered in this report, middle and high school students report similar rates of current use of pipe tobacco. Other findings of interest are detailed below.

High school students (10.9 percent) are more likely than middle school students (6.7 percent) to have tried smoking tobacco in a pipe. As noted above, however, rates of current use do not differ significantly between the two age groups (3.3 percent of high school students compared with 3.0 percent of middle school students).

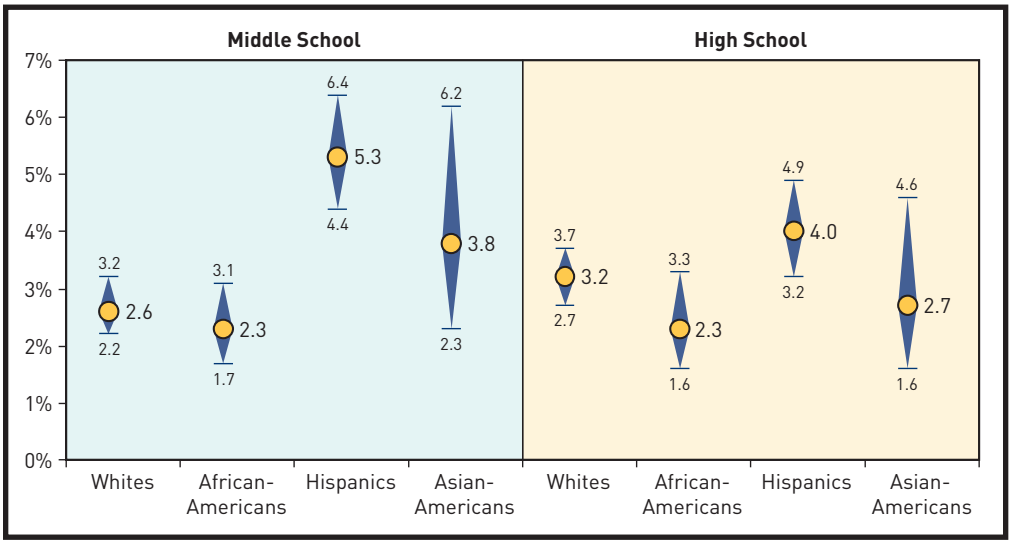
Among middle school students, it is interesting to note that Hispanics are more likely than any other racial/ethnic group to report lifetime or current use of pipe tobacco, although the differences between Asian-Americans and Hispanics are not statistically significant. Approximately 5 percent of Hispanic middle school students are current pipe users as compared with 2.6 percent of Whites, 2.3 percent of African-Americans, and 3.8 percent of Asian-Americans.

Among high school students, Whites have the highest rates of lifetime use of pipe tobacco (12.2 percent of Whites compared with 5.8 percent of African-Americans, 9.5 percent of Hispanics, and 7.1 percent of Asian-Americans). In contrast, current use rates among high school students do not differ significantly by race/ethnicity.

As with all tobacco products other than cigarettes, males, regardless of age group, are far more likely than females to smoke tobacco in a pipe. Among middle school students, males (4.3 percent) are more than twice as likely to report current use as females (1.8 percent). Gender differences are even more striking for high school students, with 5.2 percent of males reporting current use compared with 1.4 percent of females. (Prevalence data broken down by gender are presented in Appendix Tables A-1 and A-2.)

Rates of current pipe use have remained relatively constant between the 1999 and 2000 NYTS. Measures of lifetime pipe use are based on a new question added to the 2000 survey; as such, there is no basis for comparison in the 1999 data.

Figure 6: Prevalence of Current Pipe Use



Note: Upper and lower ranges represent 95 percent confidence intervals that account for the survey design weighting.

USE OF MULTIPLE TOBACCO PRODUCTS

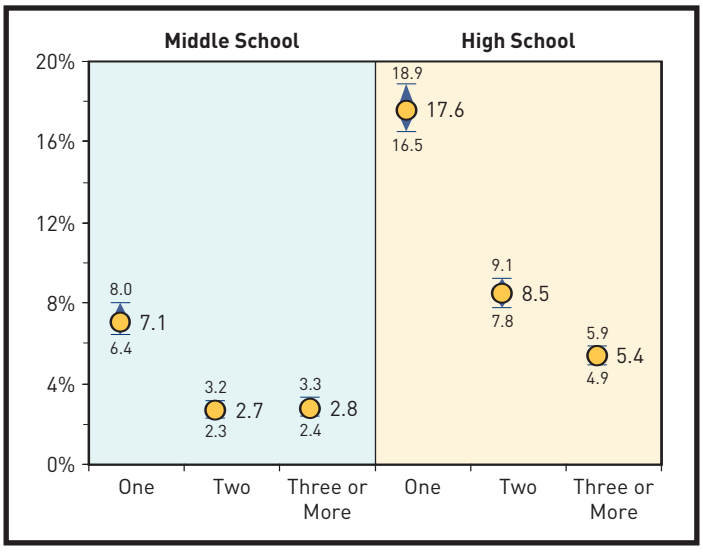
Concern over youth tobacco use is often focused on cigarettes. However, a substantial portion of youth who use tobacco report using multiple products. Consequently, focusing attention on preventing cigarette use will only address a portion of the problem. This underscores the importance of examining tobacco use among youth in a comprehensive way. "How many products are used?" and "what is the relationship between cigarette and other product use?" are questions that need to be addressed to fully understand the challenge of reducing tobacco use among youth. Data from the NYTS are well suited to answer these questions. Data on the number of tobacco products used, including cigarettes, are presented in Figure 7. Results that are stratified by demographic characteristics are presented in Appendix Table A-3.

The majority of students do not use any tobacco products at all, including cigarettes (79.1 percent of middle school students and 62.3 percent of high school students). However, among those who do use tobacco products, a significant share report using multiple forms of tobacco. Middle school students are most likely to report use of a single tobacco product (7.1 percent report one, 2.7 percent report two, and 2.8 percent report three or more). Similarly, high school students are also more likely to report use of just one product (17.6 percent) than use of two or three products (8.5 percent and 5.4 percent, respectively).

Among high school students, females (28.2 percent) are less likely than males (34.6 percent) to use tobacco products. In addition, females are less likely than males to use multiple tobacco products, with 8.3 percent of females and 19.1 percent of males reporting current use of two or more products. A similar, though less pronounced, pattern of utilization between males and females is observed among middle school students. (Data on the reported number of tobacco products broken down by gender are provided in Appendix Table A-3.)

Among middle school students, Asian-Americans are less likely than any other racial/ethnic group to report current use of tobacco products (6.7 percent of Asian-

Figure 7: Number of Tobacco Products Currently Used



Note: Upper and lower ranges represent 95 percent confidence intervals that account for the survey design weighting.

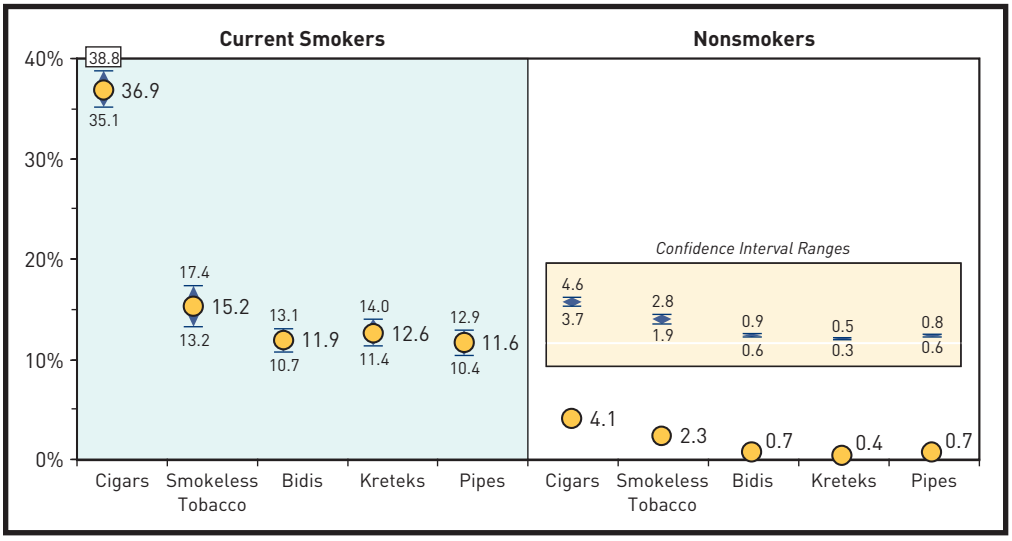
Americans compared with 12.4 percent of Whites, 14.3 percent of African-Americans, and 12.6 percent of Hispanics).

Among high school students, Whites are the most likely to report current use of tobacco products (35.3 percent of Whites compared with 23.0 percent of African-Americans, 23.6 percent of Hispanics, and 19.5 percent of Asian-Americans). In addition, a higher proportion of Whites report use of multiple tobacco products. Nearly 16 percent of Whites report current use of two or more products compared with 8.7 percent of African-Americans, 10.9 percent of Hispanics, and 7.0 percent of Asian-Americans.

RELATIONSHIP BETWEEN CIGARETTE AND OTHER TOBACCO USE

Cigarettes are the most commonly used tobacco product among youth. Further, the majority of multiple product users report cigarette use. Therefore, it is important to examine the relationship between cigarette use and the use of other tobacco products. Data from the NYTS addressing this issue are presented in Figure 8 (detailed results are presented in Appendix Table A-4). These data show that current cigarette smokers are far more likely than nonsmokers to report using tobacco products other than cigarettes. Current use rates for smokers compared with nonsmokers range from 7 times greater for smokeless tobacco to 32 times greater for kreteks.

Figure 8: Prevalence of Use of Tobacco Products Other than Cigarettes, by Cigarette Smoking Status



Note: Upper and lower ranges represent 95 percent confidence intervals that account for the survey design weighting.

SUMMARY AND CONCLUSION

The results reported above indicate that a significant proportion of middle and high school students (24.5 percent and 47.7 percent, respectively) have experimented with a tobacco product other than cigarettes. Moreover, 9.9 percent and 20.6 percent of middle and high school students, respectively, reported that they used at least one such product within the past 30 days.

In general, males and high school students are much more likely than females and middle school students to both experiment with, and use on a regular basis, a wider range of tobacco products. The use of tobacco products other than cigarettes also tends to vary by race/ethnicity. Among middle school students, for example, African-American students are more likely to report that they are currently using a tobacco product (including cigarettes) than their White, Hispanic, and Asian-American counterparts. Among high school students, however, White students' use of tobacco products exceeds use by students from all other racial/ethnic groups by a substantial margin. The 2000 NYTS results confirm the existence of a strong relationship that we observed in the 1999 NYTS: current cigarette smokers are far more likely to report using other tobacco products than nonsmokers.

In light of the prevalence rates reported above, it is clear that, from a policy perspective, more needs to be done to curtail youth use of all tobacco products, not simply cigarettes. For instance, it is critical to enact and enforce state legislation and local ordinances that will increase excise taxes on the full spectrum of tobacco products and that will make these products less accessible to minors. Similarly, public education campaigns must focus on communicating the adverse health effects associated with cigars, chewing tobacco, pipes, and other forms of tobacco, as well as cigarettes.

REFERENCES

Centers for Disease Control and Prevention (CDC). 1999. Bidi Use among Urban Youth—Massachusetts, March–April 1999. Fact Sheet. Tobacco Information and Prevention Source. <http://www.cdc.gov/tobacco/mmwr999fs.htm>.

Gilpin, E.A., and J.P. Pierce. 1999. "Cigar Smoking in California: 1990-1996." *American Journal of Preventive Medicine* 16(3):195-201.

Iribarren, C. 2000. "Reexamining Health Effects of Cigar Smoking: Fashionable, but May Increase the Risk of Coronary Heart Disease." *European Heart Journal* 21(7):505-506.

Ringel, J.S., R.L. Pacula, and J. Wasserman. October 2000. *Legacy First Look Report 4. The Relationship between Cigarette Use and Other Tobacco Products: Results from the 1999 National Youth Tobacco Survey.* Washington, DC: American Legacy Foundation.

Satcher, D. 1999. "Cigars and Public Health." *New England Journal of Medicine* 340(23):1829-1831.

Shapiro, J.A., E.J. Jacobs, and M.J. Thun. 2000. "Cigar Smoking in Men and Risk of Death from Tobacco-related Cancers." *Journal of the National Cancer Institute* 92(4):333-337.

U.S. Department of Health and Human Services (USDHHS). 1986. *The Health Consequences of Using Smokeless Tobacco: A Report of the Advisory Committee to the Surgeon General.* Bethesda, MD: National Cancer Institute.

APPENDIX A: USE OF OTHER TOBACCO PRODUCTS — DETAILED TABLES

Table A-1: Percentage of Youth Who Report Ever Trying Each Tobacco Product [95% Confidence Interval]

	Middle School					
	Cigarettes	Cigars	Smokeless Tobacco	Bidis	Kreteks	Pipes
Overall	**36.2** [33.8–38.8]	**19.3** [17.7–21.0]	**9.5** [8.0–11.1]	**4.4** [3.9–4.9]	**3.6** [3.1–4.1]	**6.7** [6.0–7.5]
Males	**38.3** [35.6–41.1]	**24.7** [22.5–27.1]	**14.8** [12.3 17.9]	**5.9** [5.1–6.8]	**4.6** [3.9–5.4]	**9.2** [8.1–10.4]
Females	**34.2** [31.5–37.1]	**14.1** [12.7–15.7]	**4.2** [3.6–5.0]	**3.0** [2.5–3.5]	**2.6** [2.1–3.1]	**4.3** [3.8–5.0]
Whites	**33.5** [30.7–36.3]	**18.5** [16.7–20.5]	**10.7** [8.7–13.1]	**3.5** [3.1–4.1]	**3.5** [2.9–4.1]	**6.5** [5.6–7.4]
African-Americans	**44.6** [40.2–49.2]	**22.3** [19.0–26.0]	**6.1** [4.7–7.8]	**5.7** [4.7–6.9]	**2.8** [2.2–3.6]	**4.6** [3.7–5.8]
Hispanics	**39.6** [34.5–44.9]	**22.0** [19.0–25.2]	**6.9** [5.8–8.1]	**6.2** [4.7–8.1]	**4.2** [3.2–5.5]	**9.4** [7.8–11.2]
Asian-Americans	**22.6** [18.7–27.0]	**10.3** [7.5–14.1]	**5.5** [3.6–8.4]	**5.2** [3.4–8.1]	**4.2** [2.6–6.6]	**6.3** [4.3–9.3]
	High School					
	Cigarettes	Cigars	Smokeless Tobacco	Bidis	Kreteks	Pipes
Overall	**63.9** [61.9–65.9]	**41.7** [39.8–43.5]	**18.0** [16.3–19.9]	**12.8** [11.7–14.1]	**12.1** [11.0–13.4]	**10.9** [10.2–11.8]
Males	**65.3** [63.3–67.3]	**52.2** [50.0–54.3]	**29.0** [26.1–32.0]	**15.7** [14.4–17.1]	**14.0** [12.7–15.4]	**16.7** [15.6–17.9]
Females	**62.5** [60.1–64.9]	**30.9** [29.1–32.8]	**6.8** [5.8–7.9]	**9.9** [8.8–11.1]	**10.2** [8.9–11.6]	**5.0** [4.4–5.6]
Whites	**64.1** [61.5–66.7]	**44.0** [41.8–46.4]	**21.9** [20.0–24.0]	**11.6** [10.3–13.0]	**14.4** [12.9–16.0]	**12.2** [11.3–13.1]
African-Americans	**63.3** [60.3–66.1]	**36.6** [33.0–40.3]	**8.1** [6.6–9.9]	**16.4** [14.4–18.6]	**4.6** [3.5–6.0]	**5.8** [4.6–7.3]
Hispanics	**66.1** [63.0–69.0]	**38.0** [35.2–41.0]	**9.9** [7.9–12.4]	**14.6** [12.7–16.7]	**8.6** [6.7–11.0]	**9.5** [8.3–11.0]
Asian-Americans	**52.8** [48.4–57.2]	**24.5** [21.6–27.6]	**7.6** [5.6–10.3]	**10.9** [8.6–13.7]	**7.7** [5.5–10.7]	**7.1** [5.3–9.5]

Table A-2: Percentage of Youth Who Report Current Use of Each Tobacco Product [95% Confidence Interval]

	Middle School					
	Cigarettes	**Cigars**	**Smokeless Tobacco**	**Bidis**	**Kreteks**	**Pipes**
Overall	**11.0** [9.8–12.3]	**7.1** [6.1–8.1]	**3.6** [2.8–4.6]	**2.4** [2.0–2.8]	**2.1** [1.8–2.5]	**3.0** [2.6–3.5]
Males	**11.7** [10.1–13.6]	**9.7** [8.3–11.2]	**5.7** [4.2–7.8]	**3.4** [2.9–4.0]	**2.7** [2.2–3.3]	**4.3** [3.6–5.0]
Females	**10.2** [9.0–11.6]	**4.6** [3.7–5.6]	**1.5** [1.2–1.8]	**1.4** [1.1–1.7]	**1.5** [1.2–1.8]	**1.8** [1.5–2.2]
Whites	**10.7** [9.2–12.3]	**6.0** [5.1–7.2]	**3.9** [2.8–5.4]	**1.8** [1.5–2.2]	**1.9** [1.5–2.3]	**2.6** [2.2–3.2]
African-Americans	**11.3** [9.5–13.4]	**10.2** [7.9–12.9]	**2.4** [1.8–3.3]	**3.1** [2.3–4.2]	**1.8** [1.3–2.5]	**2.3** [1.7–3.1]
Hispanics	**11.2** [9.4–13.4]	**8.4** [6.9–10.2]	**3.0** [2.3–3.8]	**3.5** [2.6–4.6]	**2.5** [1.7–3.4]	**5.3** [4.4–6.4]
Asian-Americans	**5.5** [3.5–8.6]	**5.2** [3.3–8.0]	**3.0** [1.6–5.4]	**4.2** [2.5–6.9]	**3.1** [1.8–5.4]	**3.8** [2.3–6.2]
	High School					
	Cigarettes	**Cigars**	**Smokeless Tobacco**	**Bidis**	**Kreteks**	**Pipes**
Overall	**28.0** [26.3–29.8]	**14.8** [13.7–15.8]	**6.6** [5.7–7.7]	**4.1** [3.7–4.6]	**4.2** [3.7–4.7]	**3.3** [2.9–3.7]
Males	**28.8** [26.9–30.8]	**22.0** [20.5–23.5]	**11.8** [10.1–13.7]	**5.4** [4.8–6.0]	**5.3** [4.6–6.0]	**5.2** [4.5–5.9]
Females	**27.2** [25.3–29.3]	**7.3** [6.5–8.3]	**1.4** [1.0–1.8]	**2.8** [2.4–3.3]	**3.0** [2.5–3.5]	**1.4** [1.1–1.7]
Whites	**31.7** [29.6–33.8]	**15.0** [13.9–16.3]	**8.1** [7.0–9.4]	**3.5** [3.1–4.0]	**4.5** [4.0–5.1]	**3.2** [2.7–3.7]
African-Americans	**17.2** [14.4–20.5]	**15.6** [13.0–18.6]	**2.7** [2.0–3.8]	**5.1** [4.1–6.2]	**2.3** [1.5–3.3]	**2.3** [1.6–3.3]
Hispanics	**21.4** [18.2–24.9]	**12.5** [11.0–14.2]	**3.5** [2.5–5.0]	**5.3** [4.4–6.4]	**3.5** [2.7–4.4]	**4.0** [3.2–4.9]
Asian-Americans	**20.5** [17.3–24.1]	**7.5** [5.7–9.8]	**2.3** [1.4–3.7]	**3.8** [2.4–5.8]	**3.8** [2.4–6.1]	**2.7** [1.6–4.6]

Table A-3: Current Use of Multiple Tobacco Products [95% Confidence Interval]

	Middle School			
	No Tobacco Products	**One Tobacco Product**	**Two Tobacco Products**	**Three or More Tobacco Products**
Overall	**79.1** [75.9–82.0]	**7.1** [6.4–8.0]	**2.7** [2.3–3.2]	**2.8** [2.4–3.3]
Males	**76.0** [72.4–79.4]	**7.2** [6.3–8.2]	**3.1** [2.5–3.7]	**4.0** [3.2–5.0]
Females	**82.1** [78.9–84.9]	**7.1** [6.2–8.1]	**2.3** [1.9–2.9]	**1.6** [1.3–2.0]
Whites	**80.5** [76.5–84.0]	**7.0** [6.1–7.9]	**2.5** [2.0,3.1]	**2.9** [2.3–3.6]
African-Americans	**74.2** [69.9–78.1]	**9.0** [7.2–11.1]	**3.5** [2.5–4.9]	**1.8** [1.4–2.4]
Hispanics	**80.5** [77.7–82.9]	**6.1** [5.0–7.4]	**2.8** [2.2–3.7]	**3.7** [2.8–4.9]
Asian-Americans	**84.7** [79.4–88.8]	**2.6** [1.7–4.2]	**1.6** [0.8–3.0]	**2.5** [1.3–4.8]
	High School			
	No Tobacco Products	**One Tobacco Product**	**Two Tobacco Products**	**Three or More Tobacco Products**
Overall	**62.3** [60.1–64.5]	**17.6** [16.5–18.9]	**8.5** [7.8–9.1]	**5.4** [4.9–5.9]
Males	**57.7** [55.3–60.1]	**15.5** [14.5–16.5]	**10.9** [9.9–12.0]	**8.2** [7.3–9.2]
Females	**67.2** [64.8–69.5]	**19.9** [18.3–21.6]	**5.9** [5.3–6.6]	**2.4** [2.0–3.0]
Whites	**59.8** [57.1–62.3]	**19.5** [18.1–21.0]	**9.5** [8.6–10.3]	**6.3** [5.6–6.9]
African-Americans	**67.8** [63.6–71.7]	**14.3** [12.6–16.2]	**6.1** [4.9–7.6]	**2.6** [2.0–3.5]
Hispanics	**68.8** [65.0–72.3]	**12.7** [10.9–14.7]	**7.0** [6.1–8.1]	**3.9** [3.1–4.9]
Asian-Americans	**74.4** [70.8–77.7]	**12.5** [9.9–15.5]	**4.6** [3.2–6.6]	**2.4** [1.7–3.4]

Table A-4: Relationship between Current Cigarette Smoking Behavior and Use of Other Tobacco Products [95% Confidence Interval]

	Overall	
	Nonsmokers Who Are Current Users	**Current Cigarette Smokers Who Are Current Users**
Cigars	**4.1** [3.7–4.6]	**36.9** [35.1–38.8]
Smokeless Tobacco	**2.3** [1.9–2.8]	**15.2** [13.2–17.4]
Bidis	**0.7** [0.6–0.9]	**11.9** [10.7–13.1]
Kreteks	**0.4** [0.3–0.5]	**12.6** [11.4–14.0]
Pipes	**0.7** [0.6–0.8]	**11.6** [10.4–12.9]
	Middle School	
	Nonsmokers Who Are Current Users	**Current Cigarette Smokers Who Are Current Users**
Cigars	**2.4** [2.0–2.9]	**40.1** [36.8–43.4]
Smokeless Tobacco	**1.6** [1.1–2.1]	**17.0** [13.3–21.4]
Bidis	**0.4** [0.3–0.6]	**15.2** [13.2–17.5]
Kreteks	**0.3** [0.2–0.4]	**14.1** [12.0–16.5]
Pipes	**0.8** [0.6–1.0]	**18.5** [16.1–21.2]
	High School	
	Nonsmokers Who Are Current Users	**Current Cigarette Smokers Who Are Current Users**
Cigars	**5.9** [5.2–6.6]	**35.8** [33.8–37.7]
Smokeless Tobacco	**3.1** [2.5–3.8]	**14.5** [12.6–16.6]
Bidis	**1.0** [0.8–1.3]	**10.6** [9.4–12.0]
Kreteks	**0.5** [0.4–0.7]	**12.0** [10.7–13.5]
Pipes	**0.6** [0.4–0.8]	**9.1** [8.0–10.4]

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