



Tobacco Use Among Virginia's
Middle and High School Students

Results of the 2003 Youth Tobacco Survey
with comparisons to the 2001 survey results

**Survey and Evaluation Research Laboratory
Virginia Commonwealth University
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Executive Summary

The Virginia Youth Tobacco Survey was conducted in the fall of 2003. Public school students in grades 6 through 12 were asked about tobacco use, availability of tobacco products, environmental tobacco smoke, tobacco prevention education, tobacco advertisements, and depictions of tobacco in media. Some of the findings of this survey include:

- Students reporting having used any tobacco products fell by 21%, from 57% in 2001 to 45% in 2003. Twenty-seven percent of high school students and 10% of middle school students reported that they currently use a tobacco product. (Tobacco products are defined as cigarettes, cigars, smokeless tobacco, pipes, bidis [leaf-wrapped, flavored cigarettes from India], and kreteks [clove cigarettes]).
- Fifty percent of Virginia's high school students and 20% of middle school students reported having tried cigarettes. Twenty-one percent of high school students and 6% of middle school students report that they currently smoke cigarettes.
- Twenty-one percent of high school students and 17% of middle school students initiated tobacco use before the age of thirteen. Male students were more likely than female students to try tobacco before the age of thirteen.
- Eight percent of high school students were established smokers, having smoked over 100 cigarettes in their lifetime and on 20 or more of the past 30 days. About one percent (.9) of middle school students were noted as established smokers.
- Students who have tried smoking cigarettes, but have smoked less than 100 cigarettes in their lifetime, were considered experimenters. Thirty-two percent of high school students and 15% of middle school students were experimenters.
- Ninety-two percent of students believed that smoke from other people's cigarettes was "probably" or "definitely" harmful to them.

The survey results show that even though the number of Virginia's youth who use tobacco products is declining, there remain significant numbers of tobacco users throughout the Commonwealth. Prevention efforts are working, and need to be continued, if not increased, to urge the youth of Virginia to refrain from using tobacco products.

Introduction

The Virginia Youth Tobacco Survey (Virginia YTS) is sponsored by the Virginia Tobacco Settlement Foundation, administered by the VCU Survey and Evaluation Research Laboratory (SERL) with guidance from the Centers for Disease Control and Prevention (CDC). The Youth Tobacco Survey (YTS) was designed by the CDC as part of its Youth Tobacco Surveillance and Evaluation System. This system is designed to assist states in developing and maintaining their state-based comprehensive tobacco prevention and control programs. The Youth Tobacco Surveillance and Evaluation System include international, national, and state school-based surveys of middle and high school students.

The YTS is intended to enhance the capacity of state agencies and organizations to design, implement, and evaluate tobacco prevention and control programs. The aim of the Virginia YTS is to assess Virginia youth's tobacco use. The information obtained from the survey will provide the details which can then be used to more effectively target, plan and improve prevention and cessation programs. These data can also be compared to national data to assess where Virginia stands nationwide.

National youth data is collected utilizing the National Youth Tobacco Survey (NYTS), which was first conducted during fall 1999. The NYTS is representative of all students in the 50 states and the District of Columbia and is conducted every other year. State Youth Tobacco Surveys were first offered in 1998, when three states participated. There has been a gradual increase in state participation each year. Virginia first participated in 2001 and again in 2003. The Virginia Tobacco Settlement Foundation expects to sponsor the state survey every other year.

The prevalence of cigarette smoking nationwide among high school students increased during the 1990s, peaking during 1996–1997, then began a gradual decline¹. Published reports from other states participating in the state’s Youth Tobacco Survey have shown recent reductions in tobacco use among youth. In Virginia, the prevalence of cigarette smoking also shows a noted decline in recent years. This report provides a complete look at the results of the 2003 Youth Tobacco Survey and describes changes in prevalence since 2001.

Methodology

Data Collection

In the spring of 2003, Virginia School Division Superintendents were sent an information packet that detailed the aims and procedures of the Youth Tobacco Survey. Superintendents who agreed to participate returned a consent form giving SERL staff permission to contact the principals of the randomly selected schools. School principals were notified of the study via mail and phone. They were also given the option to decline participation. After approval was obtained from principals, participating classrooms were selected, and members of the SERL staff scheduled a date and time for survey administration. At this time, teachers were instructed to provide parental notification letters for students to be given to their parent(s) or guardian(s).

Surveys were administered by SERL staff members who had been trained in data collection procedures established by the Centers for Disease Control (CDC). In some instances,

¹ Centers for Disease Control and Prevention. CDC Surveillance Summaries, November 2, 2001. MMWR 2001;50(No. SS-4).

schools preferred to have members of their staff administer the surveys. In these cases, a SERL staff member trained the school staff in proper data collection procedures prior to administration.

To ensure confidentiality and anonymity, no identifying information was included in the survey instrument. Students were instructed not to write their name on their answer sheets, and no one, including the classroom teacher, was allowed to walk around the room during administration. When students completed the survey, they were instructed to place their answer sheets face down inside a large envelope that was collected and sealed by the administrator. To further protect anonymity, published reports of the data will not include the names of the counties, cities, school districts, schools, or students who participated.

Once the scan sheets were collected inside the envelope, they were returned to the SERL office and reviewed by staff in order to be sure all forms were filled out completely and correctly. SERL staff would attempt to more completely erase errant pencil marks or completely fill bubbles on the scan sheet prior to submission for scanning. SERL staff made no attempt to determine a response in situations where it was unclear, choosing to leave those items blank. YTS scan sheets were sent directly to the CDC's contractor for scanning. SERL received case-level data from CDC, which was then analyzed by SERL staff members.

Sampling and Weighting

The 2001 Virginia Youth Tobacco Survey (2001 Virginia YTS) was administered by the Area Health Education Centers (AHECs) and the 2003 Virginia Youth Tobacco Survey (2003 Virginia YTS) was conducted by the Survey and Evaluation Research Laboratory at Virginia Commonwealth University (VCU). Both surveys were administered according to guidance issued by the Centers for Disease Control and Prevention (CDC). The samples for each year were selected and provided by the CDC and were based off of the State Department of Education's public school enrollment data. VCU was contracted to analyze and compare the

2001 Virginia YTS and 2003 Virginia YTS data. In order to facilitate comparisons between the 2001 Virginia YTS and 2003 Virginia YTS as well as generalizations to the state's population of middle and high school students, VCU weighted both final data sets for analysis.

Essentially, two separate samples were selected, one consisting of high school students, and one comprised of middle school students. For the high school sample in the 2003 Virginia YTS, all regular schools containing grades 9, 10, 11, or 12 were included in the sampling frame. For the middle school sample in the 2003 Virginia YTS, all regular schools containing grades 6, 7, or 8 were included in the sampling frame

A two-stage cluster sample design was used to produce a representative sample of students in grades 6-8 and for those in grades 9-12.

The first-stage (school level) sampling frame consisted of all schools containing any of grades 9-12 for the High School sample and grades 6-8 for the middle school sample. Schools were selected with probability proportional to school enrollment size. The second sampling stage (class level) consisted of systematic equal probability sampling (with a random start) of classes from each school that participated in the survey. Second period classes were targeted for inclusion in the sampling frames for selected schools, but in some cases other class periods or types of classes were substituted. Substitutions occurred when schools declined to make second period classes available (e.g., because they did not want to lose SOL-related instruction time) or their second period classes would not have included all students in the sampling frame. All students in the selected classes were eligible to participate in the survey.

At the high school level, 50 schools were selected and 35 agreed to participate (70.00%). Within the selected classes at those schools there were 1,308 students, of whom 1,022 (78.13%) returned usable questionnaires. The overall response rate for high schools in the 2003 Virginia YTS is 55% ($70.00\% * 78.13\% = 54.69\%$).

At the middle school level, 48 schools were selected and 33 agreed to participate (68.75%). Within the selected classes at those schools there were 1,539 students, of whom 1,188 (77.19%) returned usable questionnaires. The overall response rate for middle schools in the 2003 Virginia YTS is 53% ($68.75\% * 77.19\% = 53.07\%$).

Overall, Virginia's response rate was 54%. This was determined based on a school-level response rate of 69% multiplied by the student-level response rate of 78%. This is below CDC's established threshold of 60%.

If the response rate for the YTS is 60% or above, CDC supports generalizing the survey data to the overall population of interest. In that case, CDC executes full population weighting of the data file including poststratification demographic weighting. If the response rate for the YTS is below 60%, CDC recommends that the data not be generalized, and does not execute the full weighting protocol for the file. CDC does, however, calculate and deliver partial weights that account for unequal chances of selection in the sampling process, as well as differential rates of response across strata or primary sampling units. CDC notes that unweighted data cannot be generalized to all students in the state; the unweighted data reflect only those students who actually answered.

Because the overall response rate on the 2003 Virginia YTS (54%) was less than 60%, CDC did not recommend generalizing the data to all middle school and high school children in Virginia. VCU considered the possibility of serious nonresponse bias in the 2003 Virginia YTS by comparing respondent characteristics to known student population enrollment data. After this comparison, VCU concluded that it did not seem irresponsible to generalize the 2003 Virginia YTS data to the population of middle school and high school students in the state.

Any formal analysis of nonresponse bias would have proceeded along indirect lines because there were no observable data about the nonresponding students or schools. The indirect evidence available included the race, grade, gender and geographical location of the students.

Race, grade and gender were the variables used in the poststratification weighting. Therefore, any biases caused by over- or under-representing particular combinations of race, grade and gender would be adjusted in poststratification weighting.

Overall, in both the middle school and high school data white students tended to be somewhat underrepresented, while students of African-American and other ethnicities were somewhat overrepresented. The poststratification weights ranged from about 0.51 (male middle schoolers of other ethnicities) to about 1.27 (male high schoolers of white ethnicity). These are not unusually extreme weighting values. In addition, the geographic spread of the responding schools and school divisions is diverse and includes significant representation from all health planning regions in the state. Given these indicators, the likelihood seemed small that the 2003 Virginia YTS, as collected, would be unrepresentative at a 56% response rate but representative at a 60% response rate. Therefore, VCU executed the poststratification weighting scheme for the purpose of generalizing the 2003 Virginia YTS to the state.

These results were assumed to extend to the 2001 Virginia YTS, but no explicit analysis regarding nonresponse bias was performed on the 2001 Virginia YTS data.

To generalize the 2001 Virginia YTS and 2003 Virginia YTS data, VCU completed the weighting scheme in each year by executing the poststratification demographic weighting. These calculations did not replicate CDC methods precisely. For example, CDC imputes all missing data items that are needed for weighting, and VCU did this only for cases that were missing the respondent's grade level. But VCU followed the general logic of the CDC methods and executed a standard poststratification demographic weighting scheme and integrated this into the sample and population weights calculated by CDC. Using this weighting variable, VCU produced weighted data tables to support generalizing the data to the study population.

The 2001 Virginia YTS data and 2003 Virginia YTS data were weighted to account for unequal chances of selection, differential non-response, and demographics (grade, race, and

gender) so as to better represent middle school and high school children in Virginia. VCU used some information from CDC as part of this process and executed additional parts of the weighting process independently, following the logic of CDC's process for fully weighting the data.

The sampling and weighting procedures for the Virginia YTS involve a clustered and stratified design. Such complex sample designs require special approaches to calculating sampling variances. Because sampling variances underlie the calculation of confidence intervals for survey statistics (such as sampling errors and tests of statistical significance), it is critical to calculate them correctly by taking into account the effects of the complex sample design.

In general, the confidence intervals on these estimates are 1.5 to 2 times as wide as confidence intervals that would be calculated by assuming this was a simple random sample (that is, by ignoring the sample design information in the file). Sampling errors for many items in the 2001 Virginia YTS and 2003 Virginia YTS are approximately +/- 1% to +/- 5%. Overall, sampling errors for items in the 2001 Virginia YTS and 2003 Virginia YTS that were reported in the VTSSF draft press release of 6/2/04 range from +/- 0.04% to +/- 19.11%, with a median sampling error value of +/- 2.10% and a mean of +/- 2.69%. A copy of this draft press release with the correct sampling errors (confidence intervals) is included in Appendix B.

Readers should keep in mind that surveys may have other errors besides sampling error. Every effort was made to minimize all sources of error in this survey, but errors other than sampling error can be difficult or impossible to measure.

Interpretation of Percentages

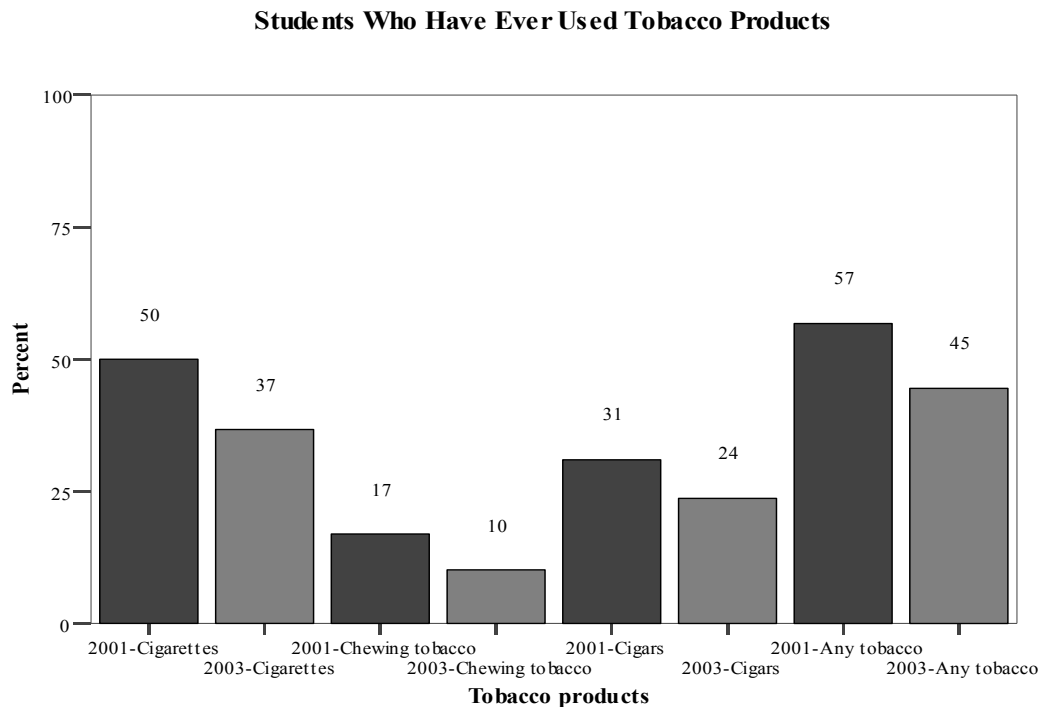
We discuss percentages in this report in two ways. In the first method, the actual percents are given – e.g., “Current tobacco use among high school students fell from 35% to

30%. In the second method, the percent change from the first year to the second is given – e.g., “Current tobacco use among high school students fell by 14%.” The percent change is determined by the formula: $(\text{Percent in year 1} - \text{Percent in year 2}) / \text{Percent in year 1}$. In this example, $35\% (\text{year 1}) - 30\% (\text{year 2}) = 5\% / 35\% (\text{year 1}) = 14\%$. Often, we combine these two methods – e.g., “Current tobacco use among high school students fell by 14% [percent change] (from 35% to 30% [actual percents]).”

Results

Virginia saw declines in the percentages of students who report having ever tried several tobacco products between 2001 and 2003 (Figure 1). Students reporting having used any tobacco products² fell by 21%, from 57% to 45%. Declines were also seen in the percentage of students who had ever tried cigarettes. Virginia students report a decrease of 26%, from 50% to 37%, compared to a 9% drop nationwide during the same timeframe. Virginia students also reported decreases in percentages of students who had ever tried smokeless or chewing tobacco (down by 41%), and cigars or cigarillos (down by 23%). The percentage of students who reported ever using bidis or kreteks declined by 36% as well.

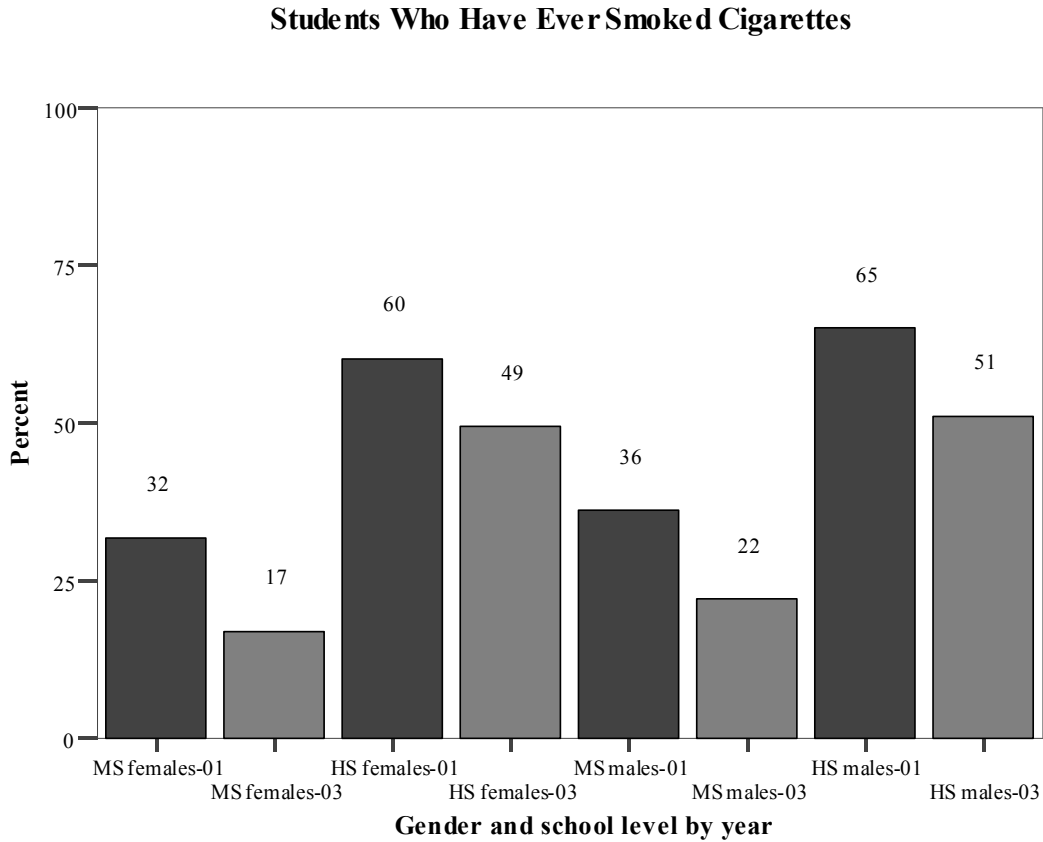
Figure 1: Ever Use of Tobacco Products by Year



² Any tobacco products are defined as any of the following: cigarettes, cigars, smokeless tobacco, pipes, bidis [leaf-wrapped, flavored cigarettes from India], and kreteks [clove cigarettes].

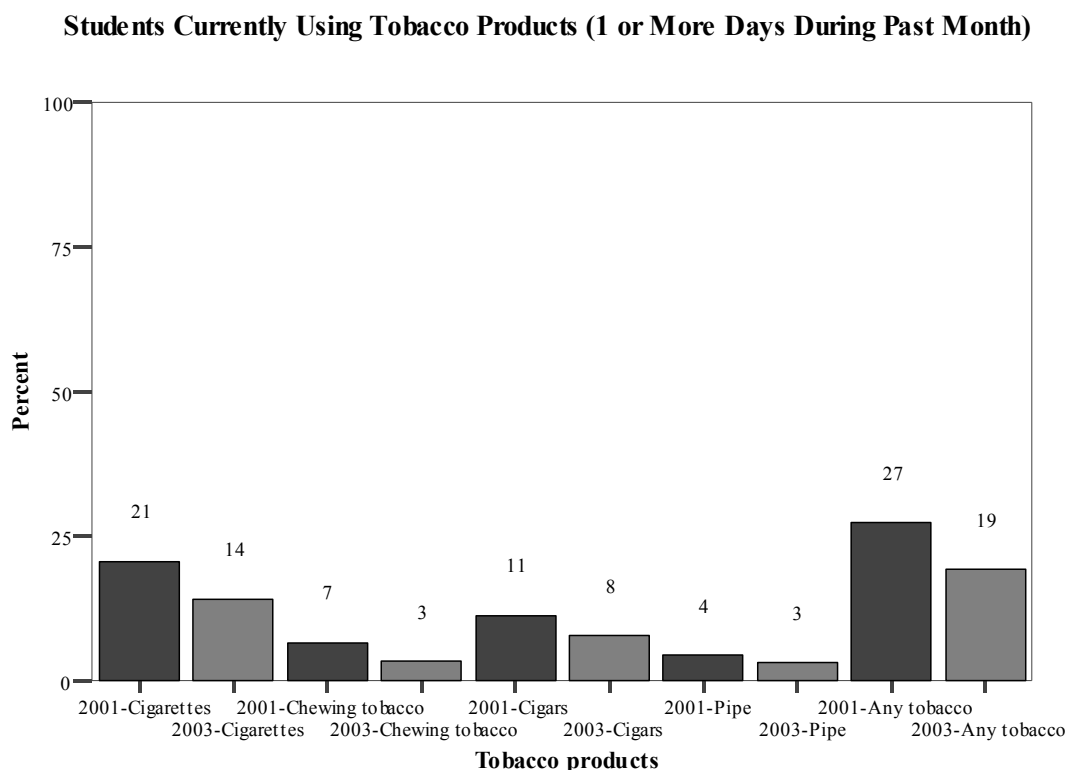
The percentage of middle school students who had ever smoked cigarettes dropped by 41% between 2001 and 2003, from 34% to 20%. High school students saw a drop of 19%, from 62% to 50%. Declines in the percentage of students who ever smoked cigarettes were also seen for each gender (Figure 2). Middle school females saw a decrease of 47%, while high school females saw a decrease of 18%. The percentage of middle school males who had ever smoked cigarettes decreased by 39%. High school males saw a decrease of 22%. Declines also occurred among black, white, and Hispanic students. White students saw the highest decrease, falling 33%, from 49% to 35%. The percentage of black students who have ever smoked cigarettes fell 25%. The smallest drop occurred among Hispanic students (14%).

Figure 2: Ever Smoked Cigarettes by Gender, Level, and Year



Students who reported using a tobacco product on one or more days during the past month were considered to be current smokers. Nineteen percent of Virginia students currently use a tobacco product, a decrease of 30% (from 27%) since 2001. Declines occurred among students who currently use smokeless or chewing tobacco, smoke cigarettes, cigars or cigarillos, and tobacco in pipes (Figure 3).

Figure 3: Current Use of Tobacco Products by Year

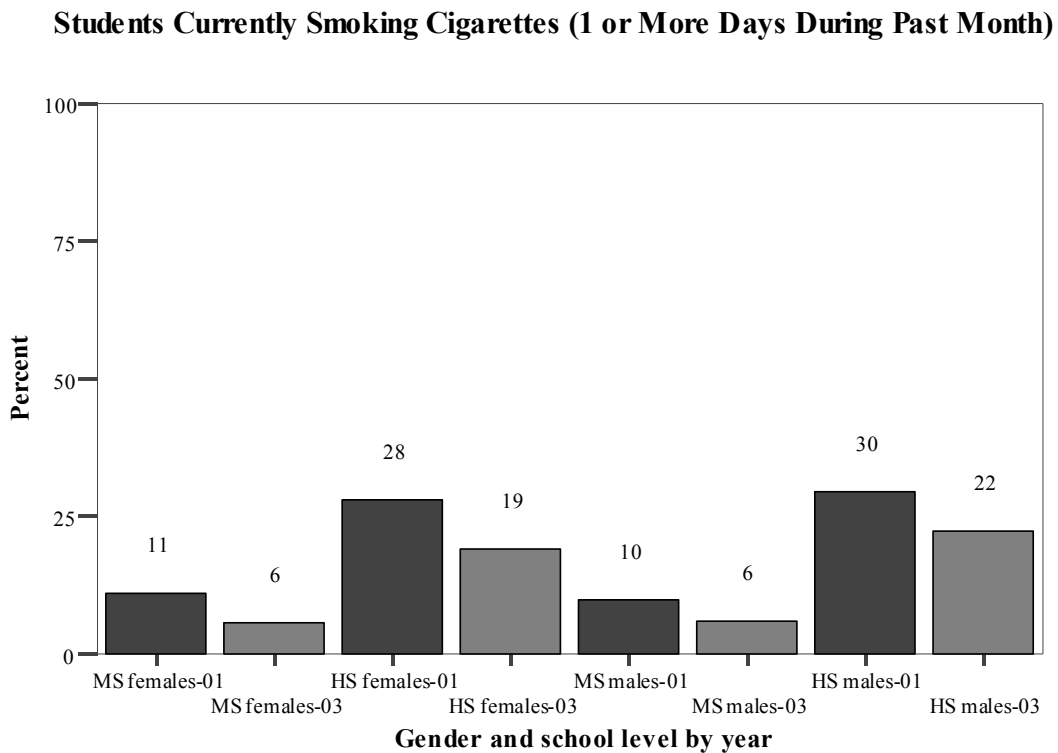


Between 2001 and 2003, the percentage of current cigarette smokers in Virginia schools dropped by 33%, from 21% to 14%, compared with a 24% drop in the national level. Large decreases were seen among Virginia middle school students. The percentage of middle school smokers fell by 45% over the two year period (from 11% to 6%), while the percentage of high school smokers fell by 28% (from 29% to 21%). Female students saw slightly larger decreases than their male counterparts. The percentage of middle school female current smokers fell by

45% (from 11% to 6%), while male middle school current smokers decreased by 40% (from 10% to 6%). The percentage of high school female smokers fell by 32% (from 28% to 19%), while high school male smokers fell by 27% (from 30% to 22%) (Figure 4).

Current smoking among Hispanic students decreased by 15% between 2001 and 2003, compared with a national decrease of 31% among Hispanic students. Nationally, black students saw no change in the percentage of current smokers (15%) during the same time period. In Virginia, black students reported decreases of 31%, from 16% to 11%, in current smoking. Nationally, the percentage of white students who currently smoke fell by 22%, while white students in Virginia saw a 32% decline, from 22% to 15%.

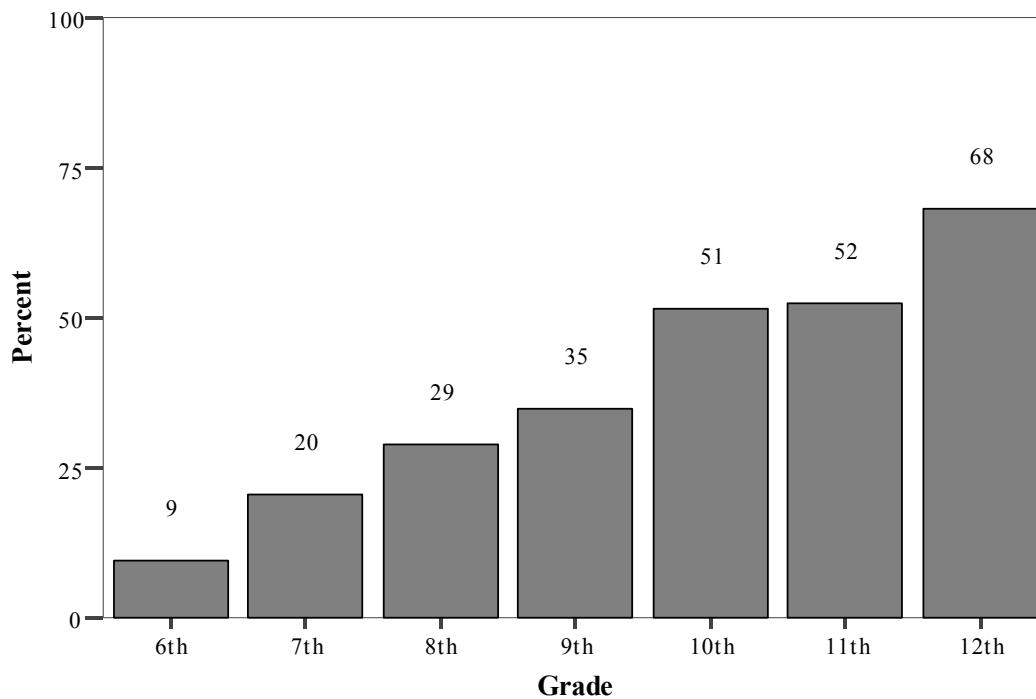
Figure 4: Current Smoking by Gender, School, and Year



The percentage of students who have ever smoked cigarettes increased gradually from 6th to 12th grade in the 2003 study (Figure 5). The largest increases occurred between 6th and 7th grades (from 9% to 20%, more than doubling), between 7th and 8th grades (from 20% to 29%, a 45% increase), and between 9th and 10th grades (from 35% to 51%; a 46% increase).

Figure 5: Ever Smoked Cigarettes by Grade for 2003

2003 - Students Who Have Ever Smoked Cigarettes

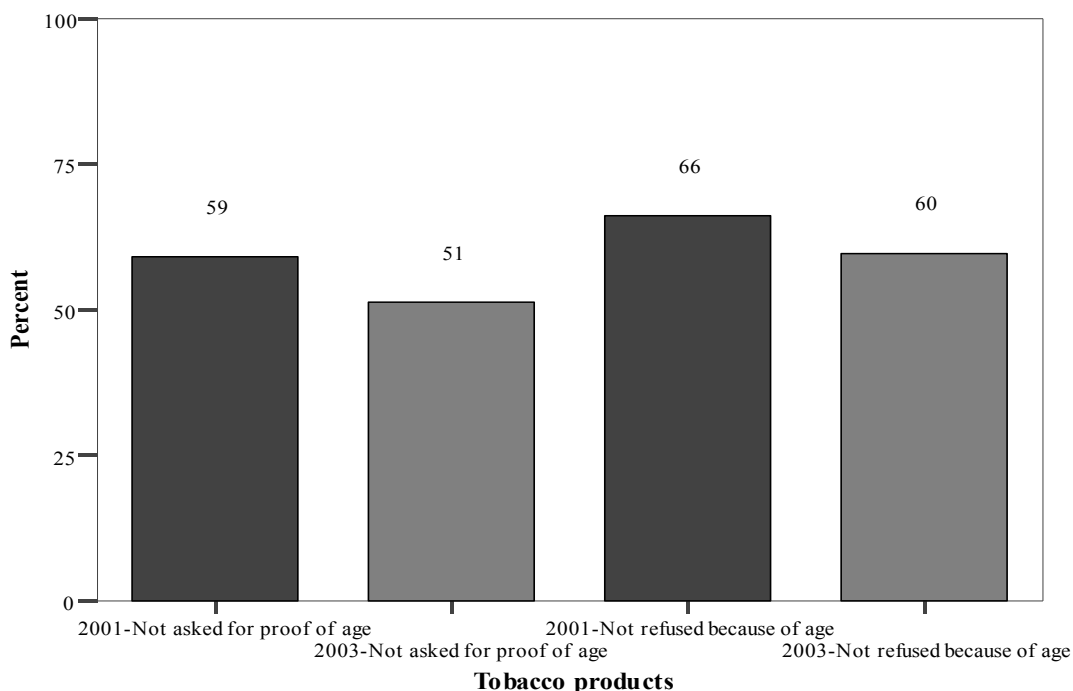


Fifty-one percent of currently smoking Virginia students who bought cigarettes in a store during the past month were not asked for proof of age (Figure 6). This was a decrease of 14% since 2001. Sixty percent of students who bought cigarettes in a store during the past month were not refused because of their age in 2003. While a high percentage, this was a decrease of 9% from 2001. Slight decreases were seen among middle school females and males and high

school males who were not refused cigarettes in a store because of their age. However, the percentage of high school females who were not refused cigarettes because of their age rose between 2001 and 2003.

Figure 6: Proof of Age for Buying Cigarettes by Year

Students Who Have Bought Cigarettes in a Store During Past Month



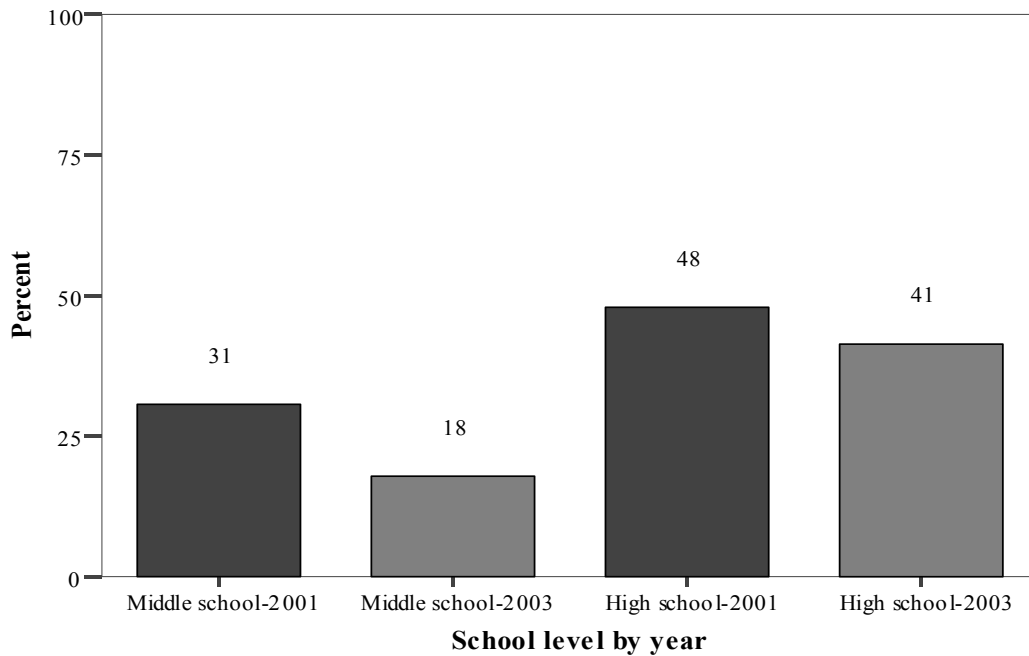
Students who had tried cigarettes, but smoked less than 100 during their lifetimes were considered “experimenters.” Those who had both smoked 100 or more during their lifetimes and smoked on 1-19 of the past 30 days were classified as “nondaily current smokers.” Students were considered at high risk of becoming established smokers if they were either experimenters or nondaily current smokers. The percentage of middle school students at a high risk of becoming established smokers declined by 42% from 2001 to 2003, from 31% to 18% (Figure 7). The percentage of high school students at high risk of becoming established smokers fell by

15%, from 48% to 41%. Declines were also seen across gender. The percentage of middle school females at high risk fell by 45%, compared with a 41% decline for middle school males. The percentage of high school females at a high risk decreased by 15%, while their male counterparts saw a decrease of 14%.

In 2003, Virginia Hispanic students (45%) were more likely than black (37%) or white (28%) students to be at a high risk of becoming established smokers. Since 2001, the percentage of Hispanic students at high risk fell 12%. The percentage of white students at high risk saw a larger decrease of 22%, and the percentage of black students at high risk fell 23%.

Figure 7: Risk of Becoming an Established Smoker by Level and Year

Students at High Risk of Becoming an Established Smoker



"At high risk"=Experimenter or Nondaily current smoker

The percentage of current middle school cigarette smokers who want to quit declined by 16% between 2001 and 2003, from 57% to 48% (Figure 8). There was no decline among high school students. Slight decreases were seen in the percentages of female middle and high school current smokers who want to quit and male high school current smokers who want to quit. However, the percentage of current male smokers in high school who want to quit increased by two percentage points between 2001 and 2003 (see Figure 9). The percentage of black current smokers in middle school who want to quit decreased 22% between 2001 and 2003. An 8% increase was seen among white high school students who want to quit.

Figure 8: Desire to Quit Cigarette Smoking by Level and Year

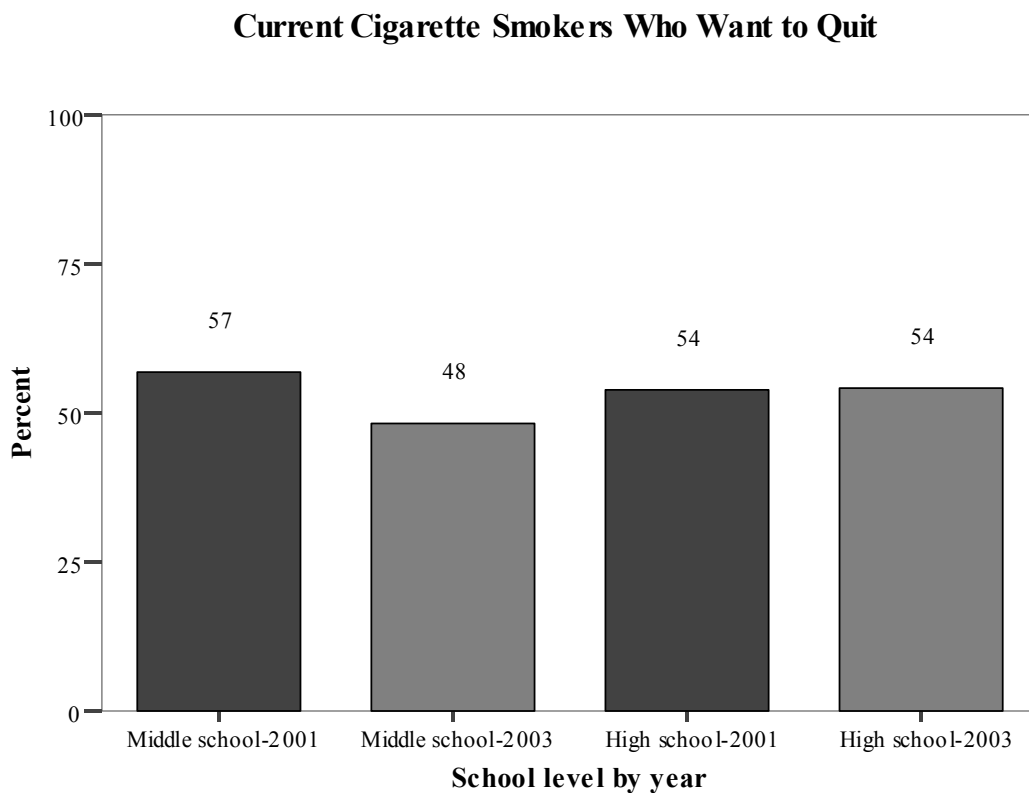
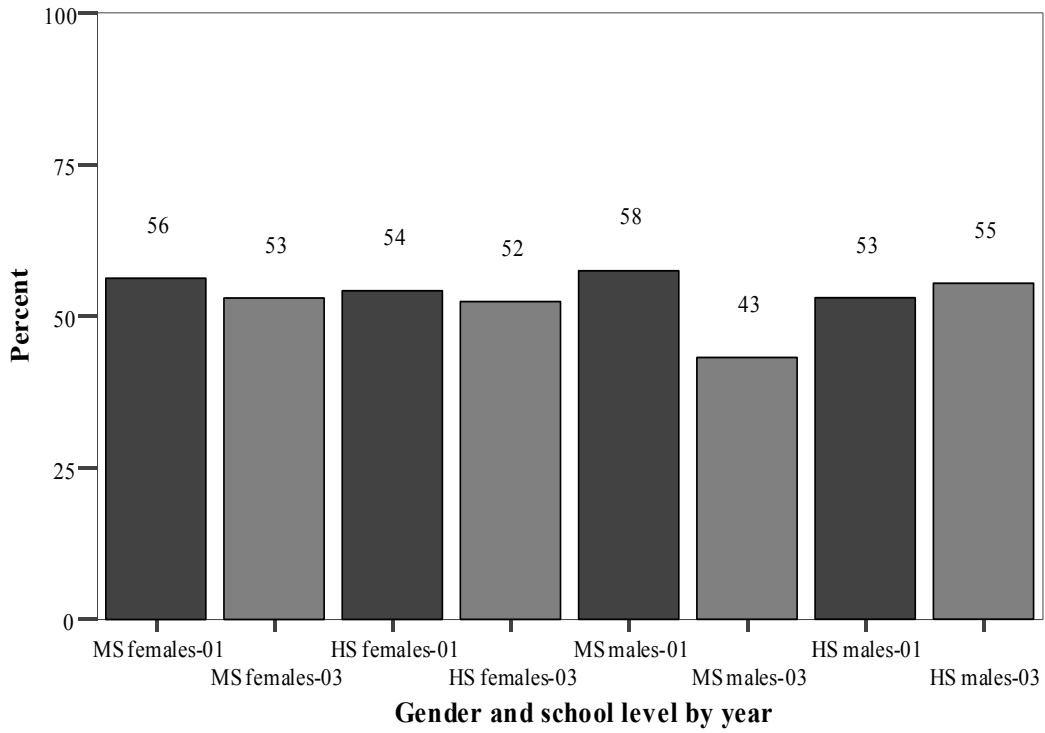


Figure 9: Desire to Quit Cigarette Smoking by Gender, Level, and Year

Current Cigarette Smokers Who Want to Quit



There was little change between 2001 and 2003 in the percentage of current smokers in middle or high school who tried to quit (Figure 10). Females in both middle school and high school were more likely than their male counterparts to have tried to quit smoking in the past year (Figure 11). The percentage of middle school females who tried to quit increased by 17%, while the percentage of high school females remained the same. The percentage of middle school males who tried to quit smoking fell by 22% while the percentage of high school males who tried to quit rose by 15%.

Figure 10: Attempt to Quit Cigarette Smoking by Level and Year

Current Cigarette Smokers Who Tried to Quit in Past Year

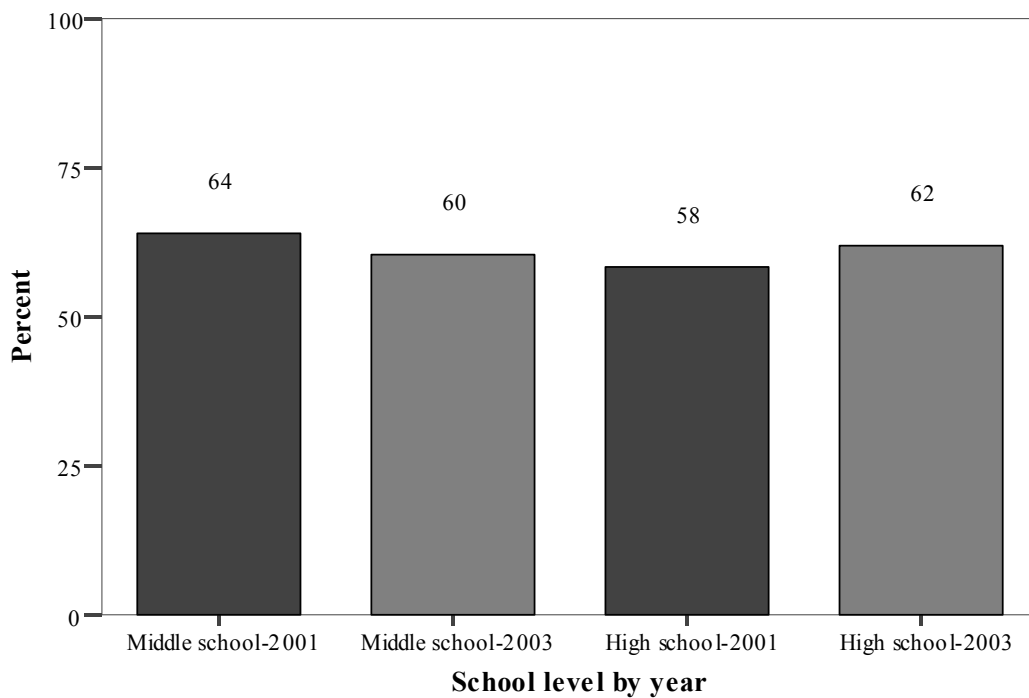
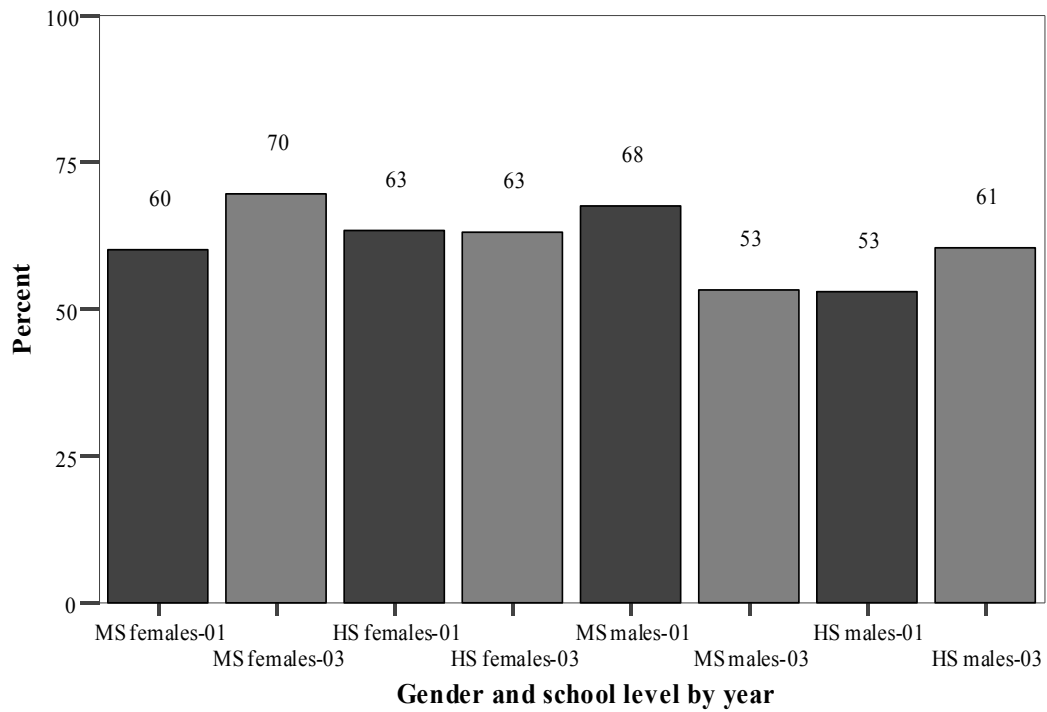


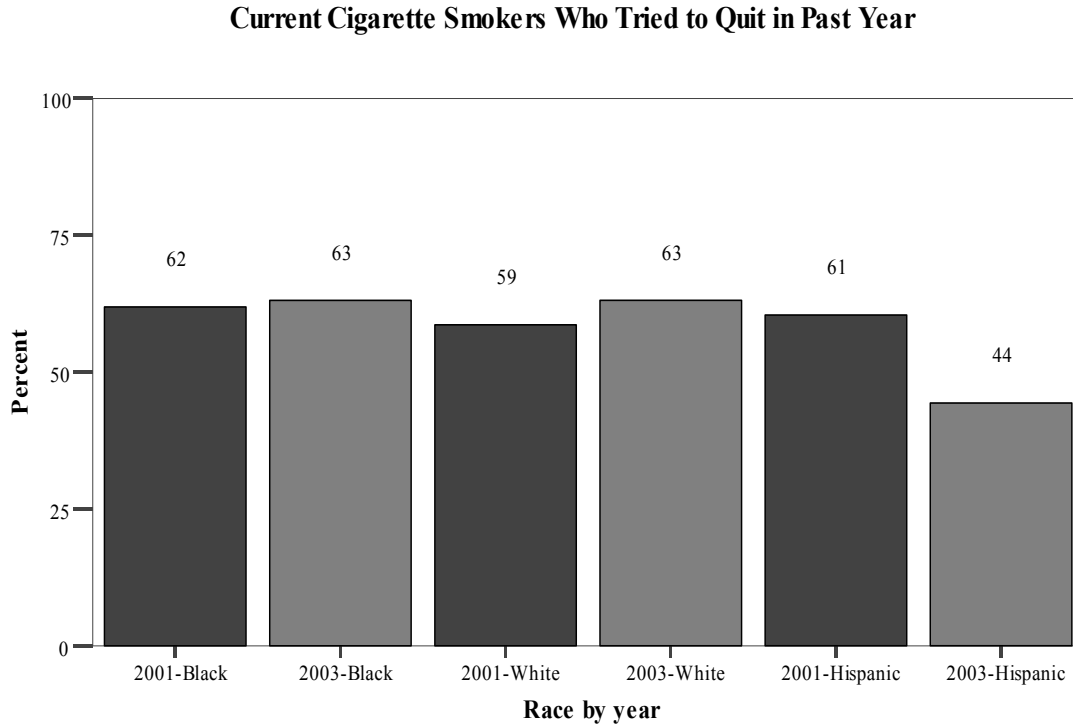
Figure 11: Attempt to Quit Cigarette Smoking by Gender, Level, and Year

Current Cigarette Smokers Who Tried to Quit in Past Year



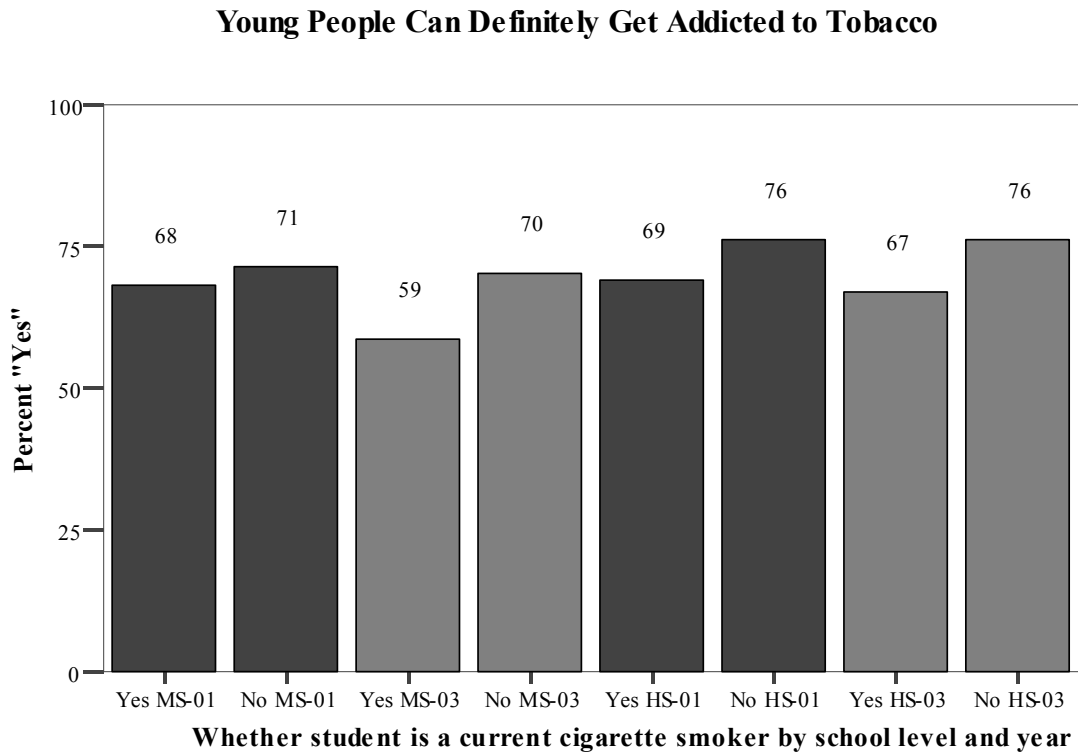
The percentage of Hispanic current smokers who tried to quit smoking cigarettes in the past year decreased 28% from 2001 to 2003 (Figure 12). The percentage of black students who tried to quit in the past year remained about the same while the number of white students who report this increased 7%.

Figure 12: Attempt to Quit Cigarette Smoking by Race/Ethnicity and Year



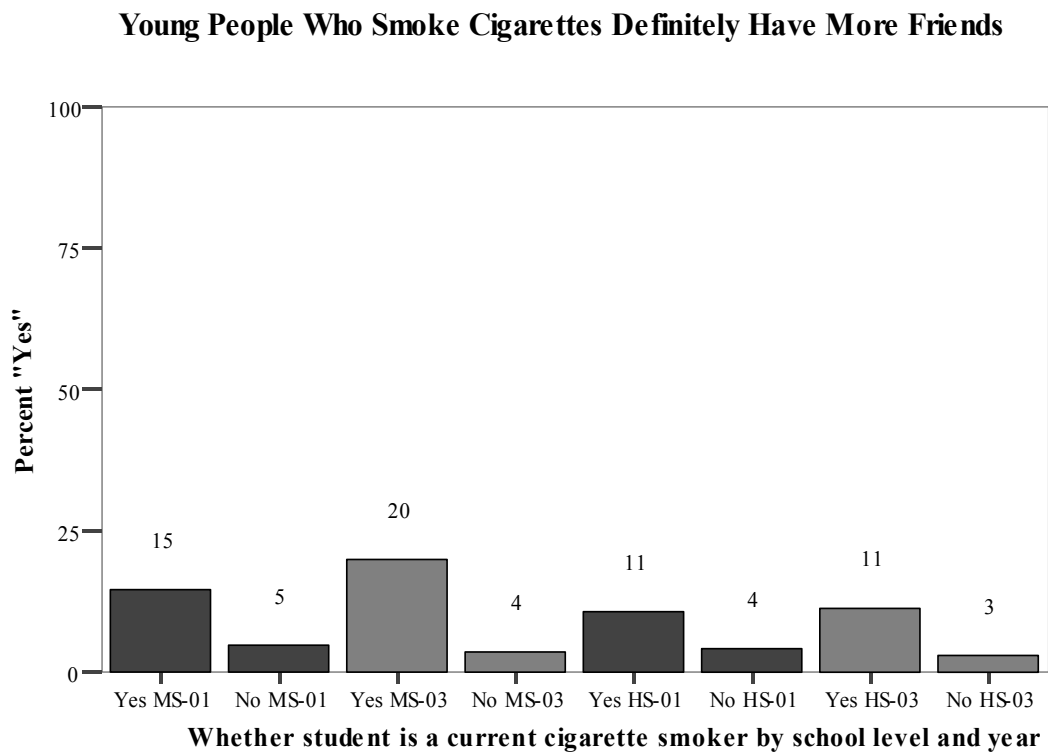
In both 2001 and 2003, non-smoking students were more likely than smoking students to believe that young people can definitely get addicted to tobacco (Figure 13). The percentage of student smokers who believed this fell between 2001 and 2003. Neither non-smoking middle school students nor non-smoking high school students changed their opinions on this issue from one year to the next.

Figure 13: Belief in Tobacco Addiction by Smoking Status, Level, and Year



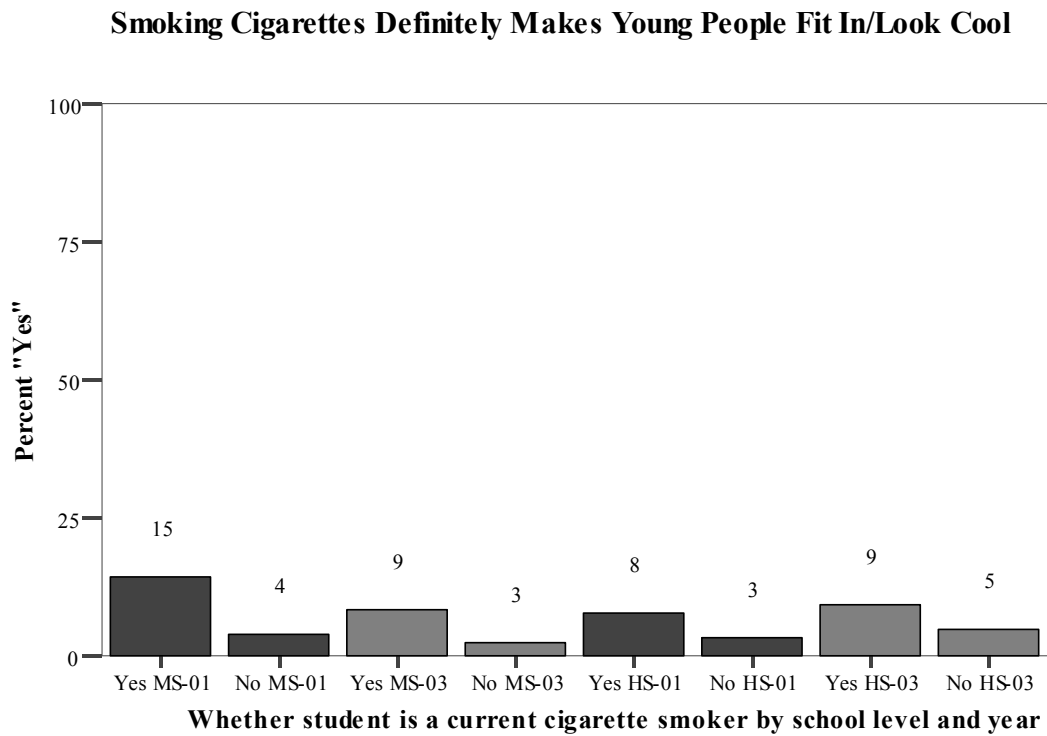
In both 2001 and 2003, current smoking students were more likely than non-smoking students to believe that young people who smoke cigarettes definitely have more friends (Figure 14). However, in both years, relatively few students believed this. Between 2001 and 2003 the percentage of middle school smokers who believed this increased, but the percentage of high school smokers remained the same.

Figure 14: Belief in Smokers Having More Friends by Smoking Status, Level, and Year



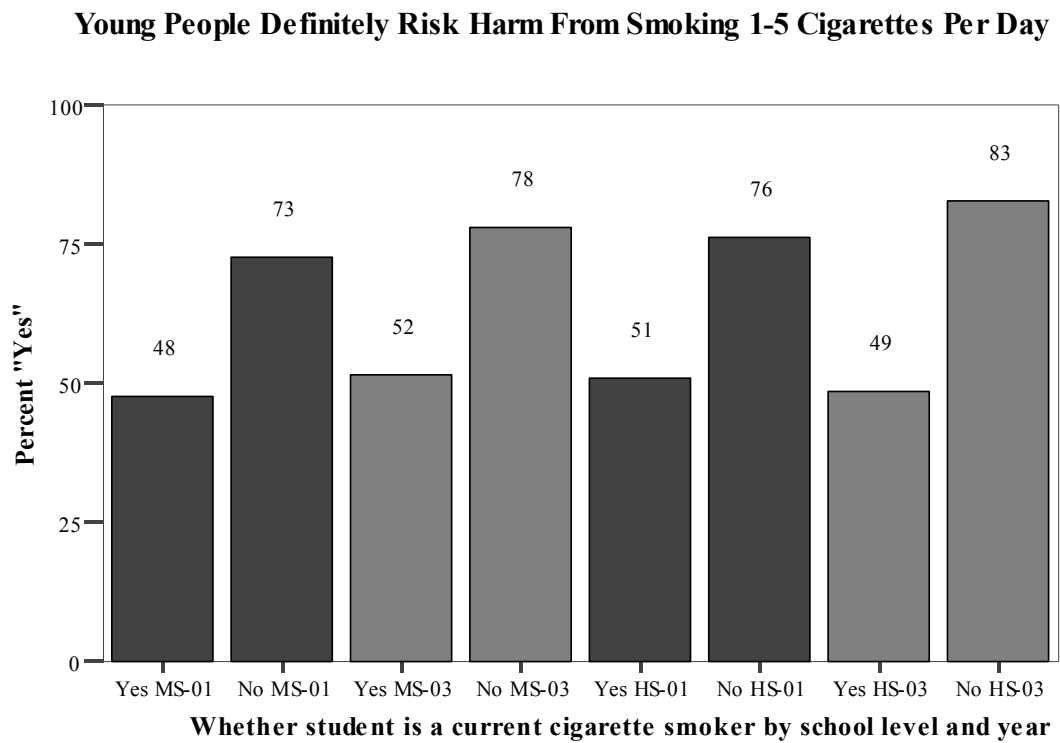
In both 2001 and 2003, currently smoking students were more likely than non-smoking students to believe that smoking cigarettes definitely makes young people fit in or look cool. However, in both years, relatively few students believed this (Figure 15). The percentage of middle school smokers who believed this decreased, but other groups remained close to their 2001 percentages.

Figure 15: Belief in Smokers Looking Cool by Smoking Status, Level, and Year



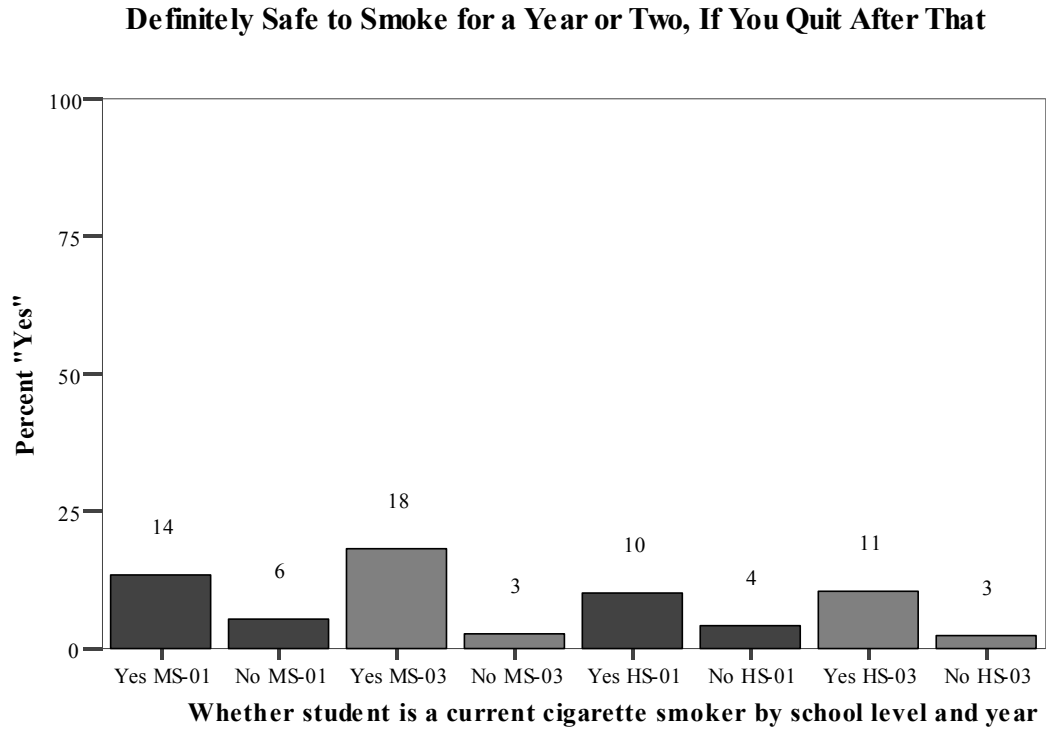
Non-smoking students were more likely than smokers to believe that young people definitely risk harm from smoking 1 to 5 cigarettes per day in both years (Figure 16). The percentage of middle school smokers, middle school non-smokers, and high school non-smokers who believed this rose slightly between 2001 and 2003, while high school smokers changed very little.

Figure 16: Belief Smoking is Harmful by Smoking Status, Level, and Year



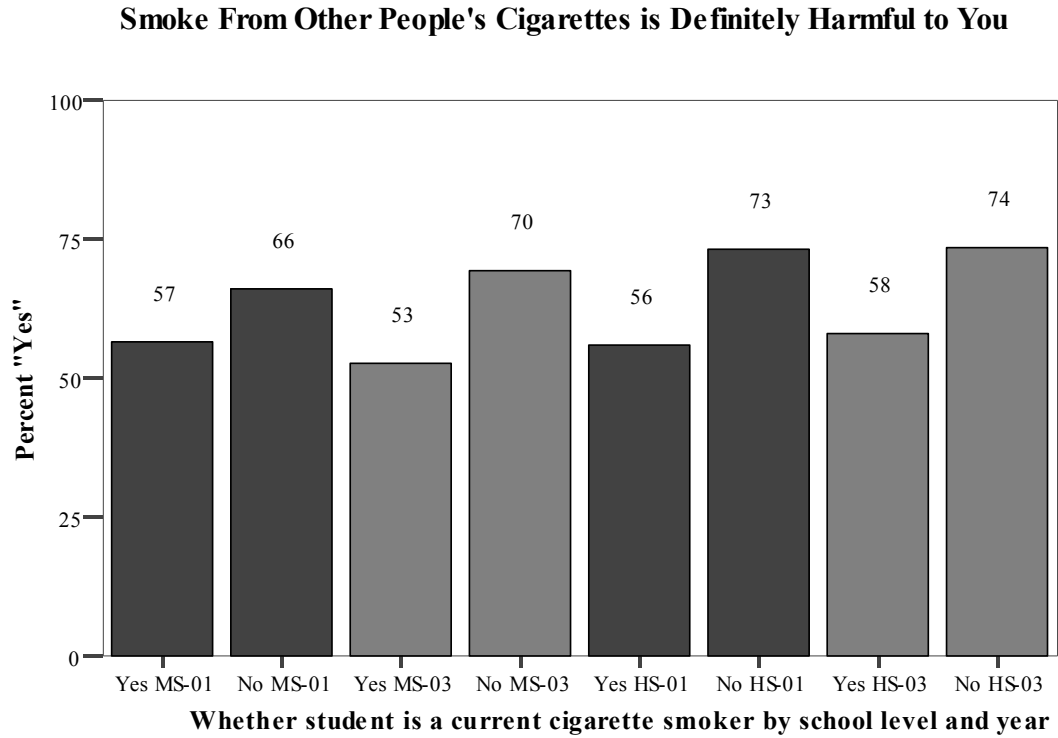
In both 2001 and 2003, current smoking students were more likely than non-smoking students to believe that smoking cigarettes for a year or two is definitely safe if you quit after that (Figure 17). However, in both years, relatively few students believed this.

Figure 17: Belief in Safety of Short Smoking Period by Smoking Status, Level, and Year



In both 2001 and 2003, current smokers were less likely to believe that second-hand smoke was definitely harmful to them than current non-smokers (Figure 18). There was relatively little change across years for either group by school level.

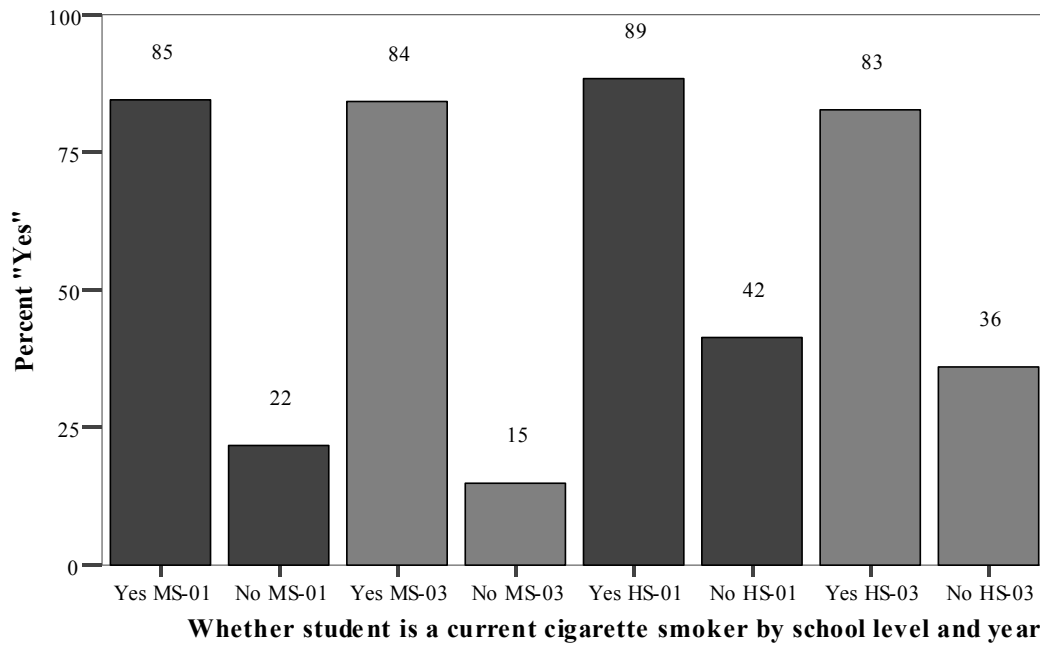
Figure 18: Belief in Environmental Smoke Harm by Smoking Status, Level, and Year



The percentage of students who reported that one or more of their closest friends smokes cigarettes decreased between 2001 and 2003 among both middle school (from 29% to 19%) and high school (from 55% to 46%) students (Figure 19). However, students who smoke were much more likely than non-smoking students to report this.

Figure 19: Friends Smoking by Smoking Status, Level, and Year

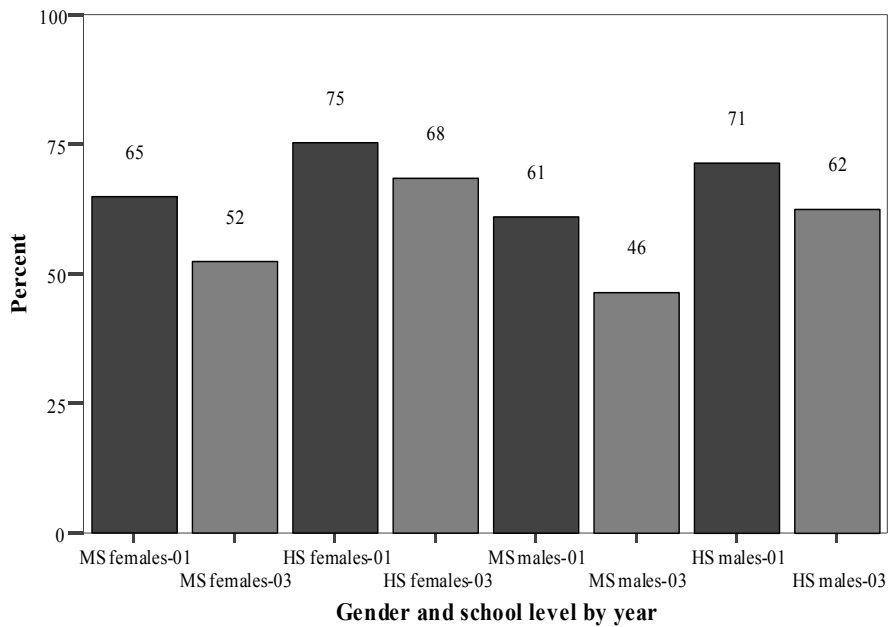
One or More of Your Four Closest Friends Smokes Cigarettes



In both 2001 and 2003, female students were more likely than male students to have been exposed to second-hand smoke in a car or room during the past week (Figure 20). The percentage of students who were exposed to second-hand smoke declined from 68% to 58%.

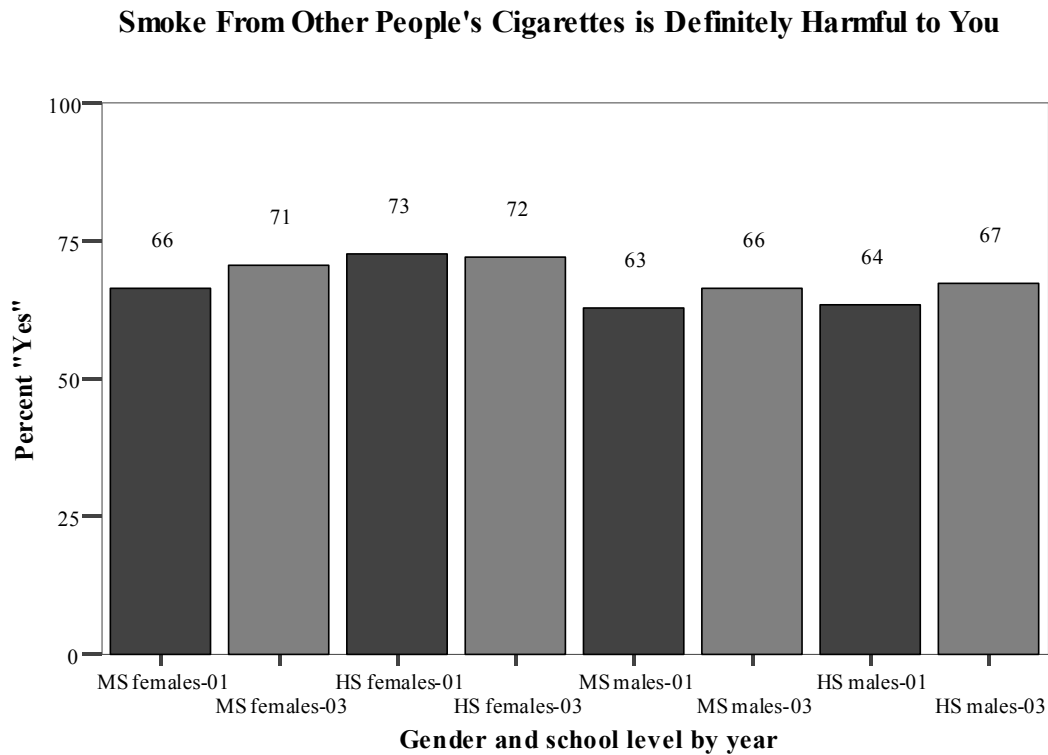
Figure 20: Exposure to Environmental Smoke by Gender, Level, and Year

Students Who Have Been Exposed to Second-Hand Smoke in a Car or Room During the Past Week



The percentage of students believing that smoke from other people's cigarettes is definitely harmful to you increased slightly from 66% to 69% (Figure 21). Slight increases of 3-5 percentage points were observed for middle school females and males and high school males.

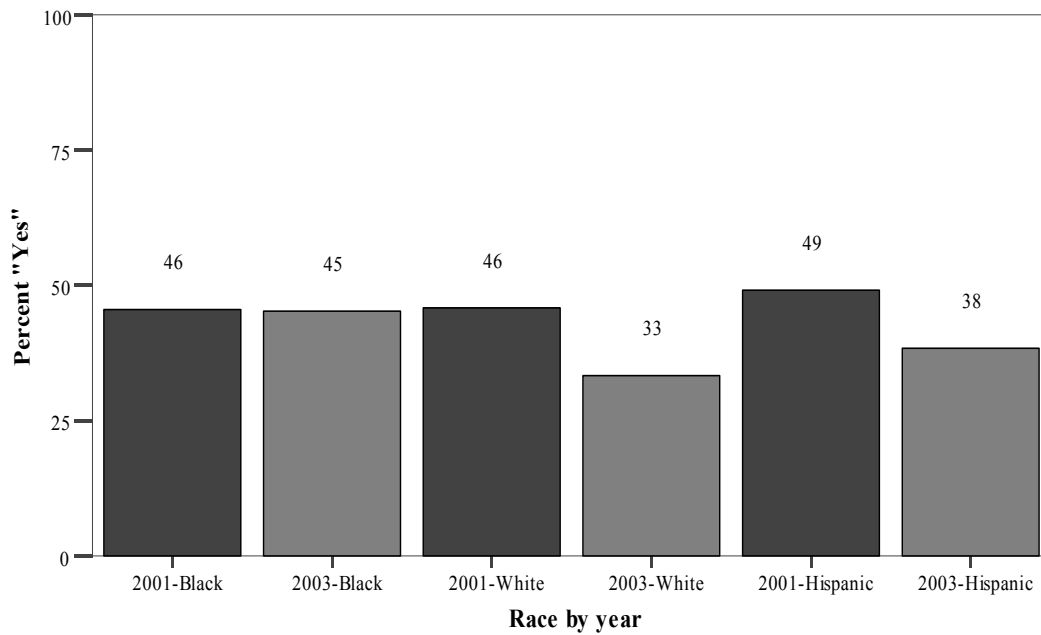
Figure 21: Belief in Environmental Smoke Harm by Gender, Level, and Year



The percentage of students who currently live with a smoker fell by 20% (from 46% to 37%) between 2001 and 2003 (Figure 22). Both females and males reported decreases in the percentage currently living with a smoker. The percentage of white students who reported living with a smoker fell 28%. The percentage of Hispanic students to report this decreased 22%. The percentage of black students currently living with a smoker remained about the same.

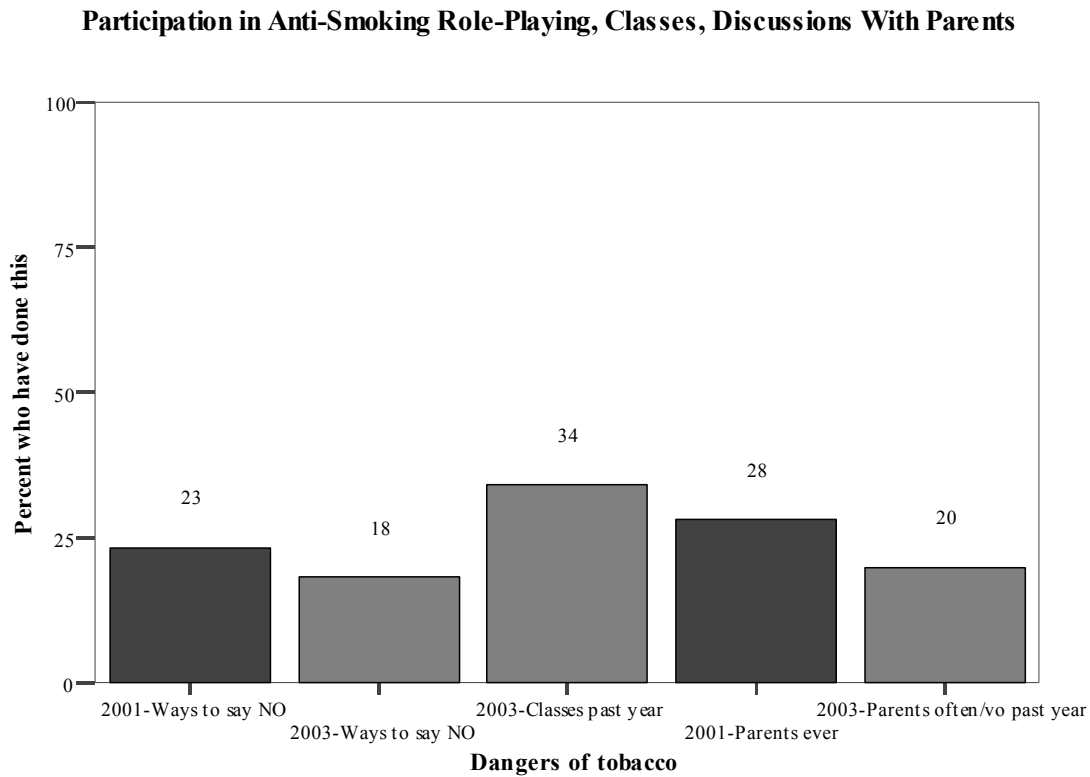
Figure 22: Living with a Smoker by Race/Ethnicity and Year

Students Who Are Now Living With a Person Who Smokes Cigarettes



The percentage of students who practiced ways to say no to tobacco declined by 22% (from 23% to 18%) between 2001 and 2003 (Figure 23). Only 34% of students in 2003 (41% of middle school students and 29% of high school students) were taught about the dangers of tobacco use in classes within the school year.³ In 2001, 28% of students reported having discussed the dangers of tobacco use with one or more parents. In 2003, only 20% reported having discussed the dangers of tobacco use with one or more parents “often or very often” during the past year.

Figure 23: Exposure to Pro-Health Messages by Year

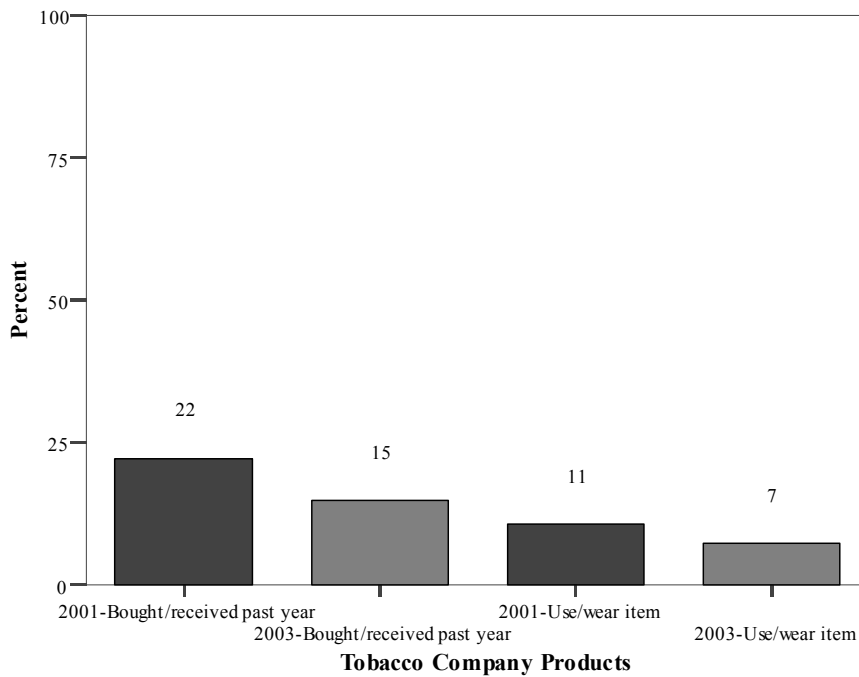


³ It should be noted that this survey was administered at the start of the school year; therefore the way the question was worded “in this school year” implies “in the past 1-2 months of instruction. The question about parental discussions stated within the past 12 months.

The percentage of students who bought or received items with tobacco company names or logos fell by 32% (from 22% to 15%) (Figure 24). Black and white students were less likely than Hispanic students to report this, and declines since 2001 among Hispanic students were smaller than in the other groups.

Figure 24: Use of Tobacco Company Items by Year

Have Received/Bought, Would Definitely Use/Wear Item With Tobacco Company Name/Logo



The percentage of middle school students who reported having smoked a whole cigarette before age thirteen declined by 33% since 2001 (from 18% to 12%) (Figure 25). The percentage of high school students who report this fell by 30% (from 23% to 16%). Male students were slightly more likely than female students to report this (Figure 26). In 2003 data, Hispanic middle and high school students were more likely to have smoked a whole cigarette before age 13 than were black and white students. Decreases were seen for all three racial/ethnic groups since 2001. The percentage of white students to report this fell 36% from 22% to 14%. The percentage of black students who had smoked a whole cigarette by age 13 fell 22%, from 18% to 14%. The percentage of Hispanic students who report this fell 19%, from 21% to 17%.

Figure 25: Initiation of Smoking Before Age 13 by Level and Year

Students Who Smoked a Whole Cigarette for First Time Before Age 13

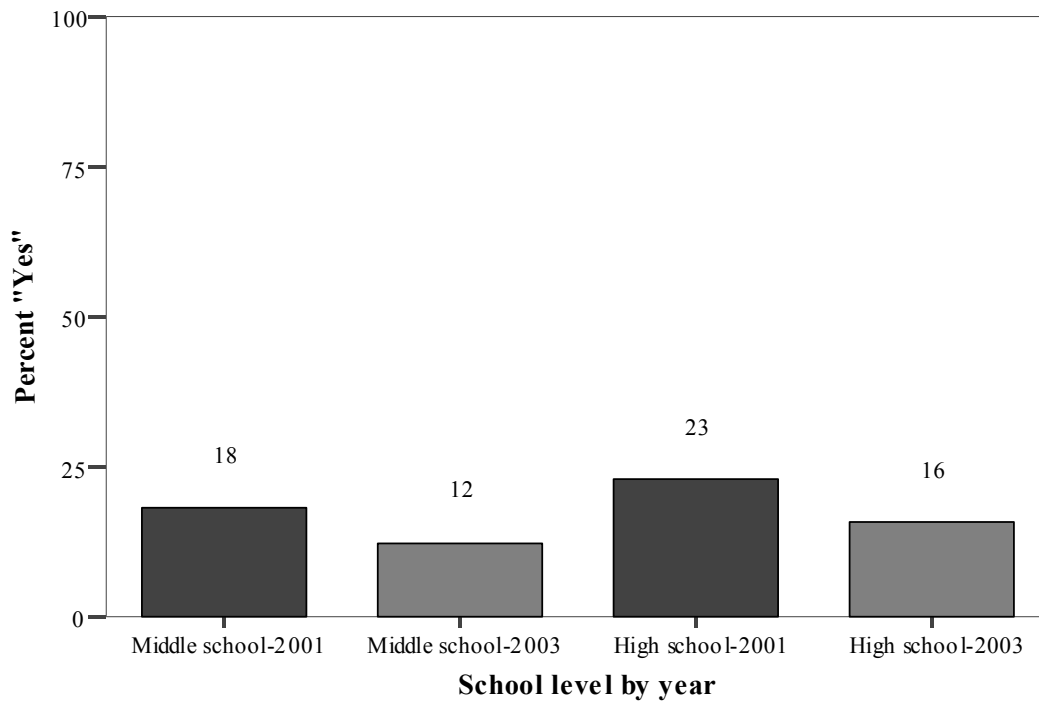
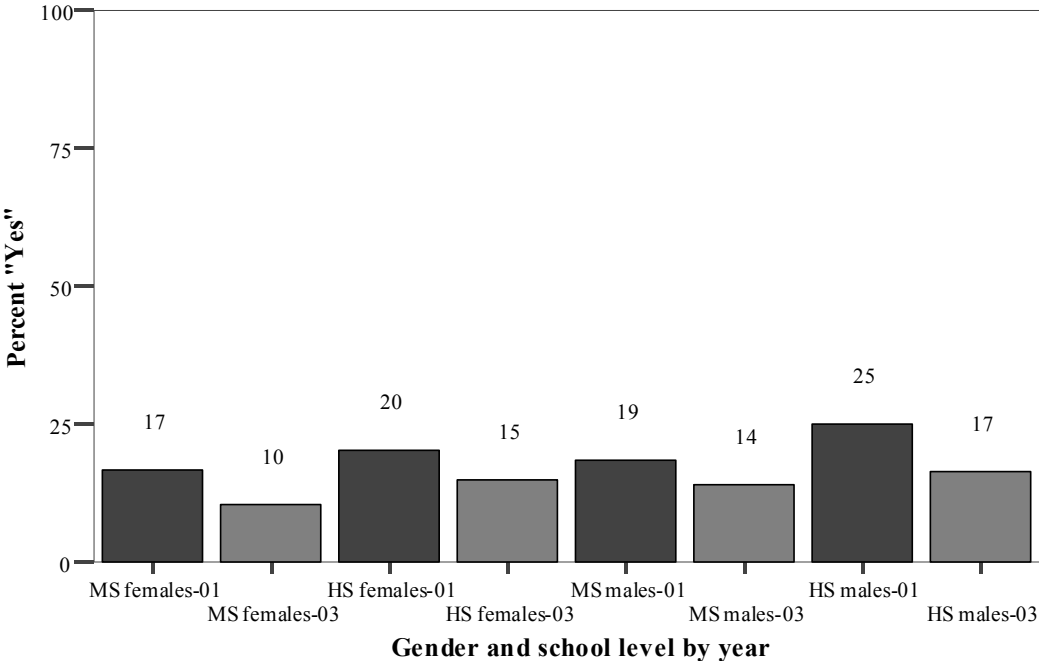


Figure 26: Initiation of Smoking Before Age 13 by Gender, Level, and Year

Students Who Smoked a Whole Cigarette for First Time Before Age 13



Appendix A

2003 Youth Tobacco Survey Questionnaire

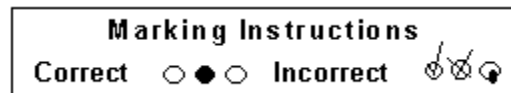
Virginia Youth Tobacco Survey 2002-2003 Questionnaire Instructions

The Virginia Tobacco Settlement Foundation is conducting this school survey. One of the many responsibilities of the Virginia Tobacco Settlement Foundation is to help schools provide students with information about behaviors that increase the risk of health problems now or in the future.

Participating in this survey is voluntary and your grade in this class will not be affected whether or not you answer the questions. However, only a limited number of students like you are participating in this survey in schools all over the state. The answers you give are very important. Please read each question carefully and answer it based on what you really know or do. This is not a test of you or this school.

Strict procedures will be maintained to protect your privacy and allow for your anonymous participation. Please do not write your name on the questionnaire or Answer Sheet. Your answers are private. Results of this survey will never be reported by name, class, or school.

Use the No. 2 pencil you have been given to fill out the answer sheet. Do not use a pen or some other pencil. Notice that for each question there are a series of circles on the Answer Sheet. For each question that you answer on the survey, choose just one answer that best fits what you know or do, then fill in the corresponding circle on the Answer Sheet. If you must change an answer, erase your old answer completely. With the exception of Question 4, only one circle should be filled in for each question on the Answer Sheet.



Please be sure to answer every question. When you are finished, look over your Answer Sheet to make sure you have not skipped any items.

It is important that you answer the survey based on what you really know or do. Do not pick a response just because you think that it is what someone wants you to say.

Thank you for participating in this survey! The information you have provided will be used to develop better health education programs for students like you all around the state.

Youth Tobacco Survey (YTS) 2002-2003 Questionnaire

THE FIRST QUESTIONS ASK FOR SOME BACKGROUND INFORMATION ABOUT YOU.

1. **How old are you?**
 - a. 11 years old or younger
 - b. 12 years old
 - c. 13 years old
 - d. 14 years old
 - e. 15 years old
 - f. 16 years old
 - g. 17 years old
 - h. 18 years old or older

2. **What is your sex?**
 - a. Female
 - b. Male

3. **What grade are you in?**
 - a. 6th
 - b. 7th
 - c. 8th
 - d. 9th
 - e. 10th
 - f. 11th
 - g. 12th
 - h. Ungraded or other grade

4. **How do you describe yourself?**
(You can CHOOSE ONE ANSWER, or MORE THAN ONE)
 - a. American Indian or Alaskan Native
 - b. Asian
 - c. Black or African American
 - d. Hispanic or Latino
 - e. Native Hawaiian or Other Pacific Islander
 - f. White

5. **Which one of these groups BEST describes you?**
(CHOOSE ONLY ONE ANSWER)
 - a. American Indian or Alaskan Native
 - b. Asian
 - c. Black or African American
 - d. Hispanic or Latino
 - e. Native Hawaiian or Other Pacific Islander
 - f. White

THE NEXT GROUP OF QUESTIONS ASK ABOUT TOBACCO USE.

Cigarette Smoking

6. **Have you ever tried cigarette smoking, even one or two puffs?**
 - a. Yes
 - b. No

7. **How old were you when you smoked a whole cigarette for the first time?**
 - a. I have never smoked a whole cigarette
 - b. 8 years old or younger
 - c. 9 or 10 years old
 - d. 11 or 12 years old
 - e. 13 or 14 years old
 - f. 15 or 16 years old
 - g. 17 years old or older

8. **About how many cigarettes have you smoked in your entire life?**
 - a. None
 - b. 1 or more puffs but never a whole cigarette
 - c. 1 cigarette
 - d. 2 to 5 cigarettes
 - e. 6 to 15 cigarettes (about 1/2 a pack total)
 - f. 16 to 25 cigarettes (about 1 pack total)
 - g. 26 to 99 cigarettes (more than 1 pack, but less than 5 packs)
 - h. 100 or more cigarettes (5 or more packs)

9. **Have you ever smoked cigarettes daily, that is, at least one cigarette every day for 30 days?**
 - a. Yes
 - b. No

10. **During the past 30 days, on how many days did you smoke cigarettes?**
 - a. 0 days
 - b. 1 or 2 days
 - c. 3 to 5 days
 - d. 6 to 9 days
 - e. 10 to 19 days
 - f. 20 to 29 days
 - g. All 30 days

11. **During the past 30 days, on the days you smoked, how many cigarettes did you smoke per day?**
 - a. I did not smoke cigarettes during the past 30 days
 - b. Less than 1 cigarette per day
 - c. 1 cigarette per day
 - d. 2 to 5 cigarettes per day
 - e. 6 to 10 cigarettes per day
 - f. 11 to 20 cigarettes per day
 - g. More than 20 cigarettes per day

- 12. During the past 30 days, what brand of cigarettes did you usually smoke?
(CHOOSE ONLY ONE ANSWER)**
- a. I did not smoke cigarettes during the past 30 days
 - b. I do not have a usual brand
 - c. Camel
 - d. Marlboro
 - e. Newport
 - f. Virginia Slims
 - g. GPC, Basic, or Doral
 - h. Some other brand
- 13. Are the cigarettes you usually smoke menthol cigarettes?**
- a. I do not smoke cigarettes
 - b. Yes
 - c. No
- 14. During the past 30 days, how did you usually get your own cigarettes?
(CHOOSE ONLY ONE ANSWER)**
- a. I did not smoke cigarettes during the past 30 days
 - b. I bought them in a store such as a convenience store, supermarket, discount store, or gas station
 - c. I bought them from a vending machine
 - d. I gave someone else money to buy them for me
 - e. I borrowed (or bummed) them from someone else
 - f. A person 18 years old or older gave them to me
 - g. I took them from a store or family member
 - h. I got them some other way
- 15. During the past 30 days, where did you buy the last pack of cigarettes you bought?
(CHOOSE ONLY ONE ANSWER)**
- a. I did not buy a pack of cigarettes during the past 30 days
 - b. A gas station
 - c. A convenience store
 - d. A grocery store
 - e. A drugstore
 - f. A vending machine
 - g. I bought them over the Internet
 - h. Other
- 16. When you bought or tried to buy cigarettes in a store during the past 30 days, were you ever asked to show proof of age?**
- a. I did not try to buy cigarettes in a store during the past 30 days
 - b. Yes, I was asked to show proof of age
 - c. No, I was not asked to show proof of age
- 17. During the past 30 days, did anyone ever refuse to sell you cigarettes because of your age?**
- a. I did not try to buy cigarettes in a store during the past 30 days
 - b. Yes, someone refused to sell me cigarettes because of my age
 - c. No, no one refused to sell me cigarettes because of my age

- 18. During the past 30 days, on how many days did you smoke cigarettes on school property?**
- a. 0 days
 - b. 1 or 2 days
 - c. 3 to 5 days
 - d. 6 to 9 days
 - e. 10 to 19 days
 - f. 20 to 29 days
 - g. All 30 days
- 19. When was the last time you smoked a cigarette, even one or two puffs?**
- a. I have never smoked even one or two puffs
 - b. Earlier today
 - c. Not today but sometime during the past 7 days
 - d. Not during the past 7 days but sometime during the past 30 days
 - e. Not during the past 30 days but sometime during the past 6 months
 - f. Not during the past 6 months but sometime during the past year
 - g. 1 to 4 years ago
 - h. 5 or more years ago
- 20. How long can you go without smoking before you feel like you need a cigarette?**
- a. I have never smoked cigarettes
 - b. I do not smoke now
 - c. Less than an hour
 - d. 1 to 3 hours
 - e. More than 3 hours but less than a day
 - f. A whole day
 - g. Several days
 - h. A week or more
- 21. Do you want to stop smoking cigarettes?**
- a. I do not smoke now
 - b. Yes
 - c. No
- 22. During the past 12 months, did you ever try to quit smoking cigarettes?**
- a. I did not smoke during the past 12 months
 - b. Yes
 - c. No
- 23. How many times during the past 12 months have you stopped smoking for one day or longer because you were trying to quit smoking?**
- a. I have not smoked in the past 12 months
 - b. I have not tried to quit
 - c. 1 time
 - d. 2 times
 - e. 3 to 5 times
 - f. 6 to 9 times
 - g. 10 or more times

24. When you last tried to quit, how long did you stay off cigarettes?

- a. I have never smoked cigarettes
- b. I have never tried to quit
- c. Less than a day
- d. 1 to 7 days
- e. More than 7 days but less than 30 days
- f. 30 days or more but less than 6 months
- g. 6 months or more but less than a year
- h. 1 year or more

Smokeless Tobacco: Chewing Tobacco, Snuff, or Dip

25. Have you ever used chewing tobacco, snuff, or dip, such as Redman, Levi Garrett, Beechnut, Skoal, Skoal Bandits, or Copenhagen?

- a. Yes
- b. No

26. How old were you when you used chewing tobacco, snuff, or dip for the first time?

- a. I have never used chewing tobacco, snuff, or dip
- b. 8 years old or younger
- c. 9 or 10 years old
- d. 11 or 12 years old
- e. 13 or 14 years old
- f. 15 or 16 years old
- g. 17 years old or older

27. During the past 30 days, on how many days did you use chewing tobacco, snuff, or dip?

- a. 0 days
- b. 1 or 2 days
- c. 3 to 5 days
- d. 6 to 9 days
- e. 10 to 19 days
- f. 20 to 29 days
- g. All 30 days

28. During the past 30 days, on how many days did you use chewing tobacco, snuff, or dip on school property?

- a. 0 days
- b. 1 or 2 days
- c. 3 to 5 days
- d. 6 to 9 days
- e. 10 to 19 days
- f. 20 to 29 days
- g. All 30 days

29. During the past 30 days, how did you usually get your own chewing tobacco, snuff, or dip?

(CHOOSE ONLY ONE ANSWER)

- a. I did not use chewing tobacco, snuff, or dip during the past 30 days
- b. I bought them in a store such as a convenience store, supermarket, discount store, or gas station
- c. I gave someone else money to buy them for me
- d. I borrowed (or bummed) them from someone else
- e. A person 18 years old or older gave them to me
- f. I took them from a store or family member
- g. I got them some other way

Cigars

30. **Have you ever tried smoking cigars, cigarillos, or little cigars, even one or two puffs?**
a. Yes
b. No
31. **How old were you when you smoked a cigar, cigarillo, or little cigar for the first time?**
a. I have never smoked a cigar, cigarillo or little cigar
b. 8 years old or younger
c. 9 or 10 years old
d. 11 or 12 years old
e. 13 or 14 years old
f. 15 or 16 years old
g. 17 years old or older
32. **During the past 30 days, on how many days did you smoke cigars, cigarillos, or little cigars?**
a. 0 days
b. 1 or 2 days
c. 3 to 5 days
d. 6 to 9 days
e. 10 to 19 days
f. 20 to 29 days
g. All 30 days
33. **During the past 30 days, how did you usually get your own cigars, cigarillos, or little cigars?**
(CHOOSE ONLY ONE ANSWER)
a. I did not smoke cigars, cigarillos, or little cigars during the past 30 days
b. I bought them in a store such as a convenience store, supermarket, discount store, or gas station
c. I gave someone else money to buy them for me
d. I borrowed (or bummed) them from someone else
e. A person 18 years old or older gave them to me
f. I took them from a store or family member
g. I got them some other way

Pipe

34. **During the past 30 days, on how many days did you smoke tobacco in a pipe?**
a. 0 days
b. 1 or 2 days
c. 3 to 5 days
d. 6 to 9 days
e. 10 to 19 days
f. 20 to 29 days
g. All 30 days

THE NEXT QUESTIONS ARE ABOUT BIDIS (OR “BEEDIES”) AND KRETEKS (ALSO CALLED “CLOVE CIGARETTES”). BIDIS ARE SMALL BROWN CIGARETTES FROM INDIA CONSISTING OF TOBACCO WRAPPED IN A LEAF TIED WITH A THREAD. KRETEKS ARE CIGARETTES CONTAINING TOBACCO AND CLOVE EXTRACT.

Bidis and Kreteks

- 35. Have you ever tried smoking any of the following:**
- a. Bidis
 - b. Kreteks
 - c. I have tried both bidis and kreteks
 - d. I have never smoked bidis or kreteks
- 36. During the past 30 days, on how many days did you smoke bidis or kreteks?**
- a. 0 days
 - b. 1 or 2 days
 - c. 3 to 5 days
 - d. 6 to 9 days
 - e. 10 to 19 days
 - f. 20 to 29 days
 - g. All 30 days

THE NEXT QUESTIONS ASK FOR YOUR THOUGHTS ABOUT TOBACCO.

- 37. Do you think that you will try a cigarette soon?**
- a. I have already tried smoking cigarettes
 - b. Yes
 - c. No
- 38. Do you think you will smoke a cigarette at anytime during the next year?**
- a. Definitely yes
 - b. Probably yes
 - c. Probably not
 - d. Definitely not
- 39. Do you think you will be smoking cigarettes 5 years from now?**
- a. I definitely will
 - b. I probably will
 - c. I probably will not
 - d. I definitely will not
- 40. If one of your best friends offered you a cigarette, would you smoke it?**
- a. Definitely yes
 - b. Probably yes
 - c. Probably not
 - d. Definitely not
- 41. In the past 12 months, how often have your parents or guardians discussed the dangers of tobacco use with you?**
- a. Never
 - b. Rarely
 - c. Sometimes
 - d. Often
 - e. Very often
- 42. Do you think people can get addicted to using tobacco just like they can get addicted to using cocaine or heroin?**
- a. Definitely yes

- b. Probably yes
 - c. Probably not
 - d. Definitely not
- 43. Do you think young people who smoke cigarettes have more friends?**
- a. Definitely yes
 - b. Probably yes
 - c. Probably not
 - d. Definitely not
- 44. Do you think smoking cigarettes makes young people fit in or look cool?**
- a. Definitely yes
 - b. Probably yes
 - c. Probably not
 - d. Definitely not
- 45. Do you think young people risk harming themselves if they smoke from 1 - 5 cigarettes per day?**
- a. Definitely yes
 - b. Probably yes
 - c. Probably not
 - d. Definitely not
- 46. Do you think it is safe to smoke for only a year or two, as long as you quit after that?**
- a. Definitely yes
 - b. Probably yes
 - c. Probably not
 - d. Definitely not
- 47. Do you think you would be able to quit smoking cigarettes now if you wanted to?**
- a. I do not smoke now
 - b. Yes
 - c. No
- 48. Have you ever participated in a program to help you quit using tobacco?**
- a. I have never used tobacco
 - b. Yes
 - c. No
- 49. During this school year, were you taught in any of your classes about the dangers of tobacco use?**
- a. Yes
 - b. No
 - c. Not sure
- 50. During this school year, did you practice ways to say NO to tobacco in any of your classes (for example by role-playing)?**
- a. Yes
 - b. No
 - c. Not sure

THE NEXT QUESTIONS ASK ABOUT EVENTS YOU MAY HAVE ATTENDED OR WHAT YOU HAVE SEEN ON TV, AT THE MOVIES, OR ON THE INTERNET.

51. **During the past 12 months, have you participated in any community activities to discourage people your age from using cigarettes, chewing tobacco, snuff, dip, or cigars?**
- a. Yes
 - b. No
 - c. I did not know about any activities
52. **During the past 30 days, have you seen or heard commercials on TV, the Internet, or on the radio about the dangers of cigarette smoking?**
- a. Not in the past 30 days
 - b. 1-3 times in the past 30 days
 - c. 1-3 times per week
 - d. Daily or almost daily
 - e. More than once a day
53. **When you watch TV or go to movies, how often do you see actors using tobacco?**
- a. I don't watch TV or go to movies
 - b. Most of the time
 - c. Some of the time
 - d. Hardly ever
 - e. Never
54. **When you watch TV, how often do you see athletes using tobacco?**
- a. I don't watch TV
 - b. Most of the time
 - c. Some of the time
 - d. Hardly ever
 - e. Never
55. **When you are using the Internet, how often do you see ads for tobacco products?**
- a. I don't use the Internet
 - b. Most of the time
 - c. Some of the time
 - d. Hardly ever
 - e. Never

SOME TOBACCO COMPANIES MAKE ITEMS LIKE SPORTS GEAR, T-SHIRTS, LIGHTERS, HATS, JACKETS, AND SUNGLASSES THAT PEOPLE CAN BUY OR RECEIVE FREE.

56. **During the past 12 months, did you buy or receive anything that has a tobacco company name or picture on it?**
- a. Yes
 - b. No
57. **Would you ever use or wear something that has a tobacco company name or picture on it such as a lighter, t-shirt, hat, or sunglasses?**
- a. Definitely yes
 - b. Probably yes
 - c. Probably not
 - d. Definitely not

THE NEXT QUESTIONS ASK ABOUT YOUR EXPOSURE TO TOBACCO USE.

- 58. During the past 7 days, on how many days were you in the same room with someone who was smoking cigarettes?**
- a. 0 days
 - b. 1 or 2 days
 - c. 3 or 4 days
 - d. 5 or 6 days
 - e. 7 days
- 59. During the past 7 days, on how many days did you ride in a car with someone who was smoking cigarettes?**
- a. 0 days
 - b. 1 or 2 days
 - c. 3 or 4 days
 - d. 5 or 6 days
 - e. 7 days
- 60. Do you think the smoke from other people's cigarettes is harmful to you?**
- a. Definitely yes
 - b. Probably yes
 - c. Probably not
 - d. Definitely not
- 61. Does anyone who lives with you now smoke cigarettes?**
- a. Yes
 - b. No
- 62. Does anyone who lives with you now use chewing tobacco, snuff, or dip?**
- a. Yes
 - b. No
- 63. How many of your four closest friends smoke cigarettes?**
- a. None
 - b. One
 - c. Two
 - d. Three
 - e. Four
 - f. Not sure
- 64. How many of your four closest friends use chewing tobacco, snuff, or dip?**
- a. None
 - b. One
 - c. Two
 - d. Three
 - e. Four
 - f. Not sure

Thank You!

Appendix B

June, 2004, Draft Press Release with Sampling Errors

VTSF

VIRGINIA TOBACCO
SETTLEMENT FOUNDATION

Virginia Youth Tobacco Survey (YTS) 2001/2003 Comparisons

(with robust confidence interval estimates and variable names noted in the text)

Public school students in grades 6 through 12 were asked about tobacco use, availability of tobacco products, environmental tobacco smoke, tobacco prevention education, tobacco advertisements, and depictions of tobacco in media. The same methodologies were used and the CDC pulled samples for both years. The 2001 survey was administered by the Area Health Education Centers (AHEC), and the 2003 survey was administered by Virginia Commonwealth University (VCU). Both sets of data were weighted and analyzed by VCU.

2001 FINDINGS	2003 FINDINGS	
Twenty-nine percent (+/- 2.13%) of high school students and eleven percent (+/- 2.18%) of middle school students report that they currently smoke cigarettes . Being a current smoker is defined as smoking on one or more days in the past month. (CURCIG)	Twenty-one percent (+/- 3.57%) of high school students and six percent (+/- 1.95%) of middle school students report that they currently smoke cigarettes . Being a current smoker is defined as smoking on one or more days in the past month. (CURCIG)	28% HS decrease 45% MS decrease
Thirty-six percent (+/- 2.39%) of high school students and seventeen percent (+/- 2.35%) of middle school students reported that they currently use a tobacco product . Males at both levels were more likely than females to currently use a tobacco product. (CURTOBAC)	Twenty-seven percent (+/- 4.17%) of high school students and ten percent (+/- 1.81%) of middle school students reported that they currently use a tobacco product. Males at both levels were more likely than females to currently use a tobacco product. (CURTOBAC)	25% HS decrease 41% MS decrease 30% overall decrease
High school students (20%) (+/- 1.80%) were more likely than middle school students (6%) (+/- 1.29%) to report that they smoked cigarettes daily. Fourteen percent (+/- 1.61%) of high school students reported being frequent smokers, having smoked on 20 or more of the past 30 days. (CR9, FRECIG)	High school students (17%) (+/- 3.89%) were more likely than middle school students (4%) (+/- 1.99%) to report that they had ever smoked cigarettes daily. Nine percent (+/- 3.29%) of high school students reported currently being frequent smokers, having smoked on 20 or more of the past 30 days. (CR9, FRECIG)	36% HS decrease of frequent smoker
Sixty-two percent (+/- 2.70%) of Virginia's high school students and thirty-four percent (+/- 3.89%) of middle school students reported having tried cigarettes. (CR6)	Fifty percent (+/- 6.15%) of Virginia's high school students and twenty percent (+/- 5.02%) of middle school students reported having tried cigarettes. (CR6)	19% HS decrease 41% MS decrease
Male middle school students were more likely to have tried cigarettes (36%) (+/- 4.30%) than their female counterparts (32%) (+/- 4.41%). The percentage of high school males (65%) (+/- 3.58%) who report having tried cigarettes was also larger than that of high school females (60%) (+/- 2.66%). (CR6 by CR2)	Male middle school students were more likely to have tried cigarettes (22%) (+/- 5.50%) than their female counterparts (17%) (+/- 5.27%). The percentage of high school males (51%) (+/- 7.44%) and females (49%) (+/- 6.36%) who report having tried cigarettes was about the same. (CR6 by CR2)	39% MMS decrease 47% FMS decrease 22% MHS decrease 18% FHS decrease
Males in both high school and middle school were more likely than females to have tried chewing tobacco, snuff, dip, cigars, cigarillos, little cigars, bidis, and kreteks	Males in both high school and middle school were more likely than females to have tried chewing tobacco, snuff, dip, cigars, cigarillos, or little cigars, bidis, and kreteks.	

2001 FINDINGS	2003 FINDINGS	
Male high school (32%) (+/- 3.64%) and middle school (18%) (+/- 2.44%) students were more likely to have ever used chewing tobacco, snuff, or dip than female high school (9%) (+/- 1.63%) and middle school (6%) (+/- 1.21%) students. (CR25 by CR2)	Male high school (17%) (+/- 4.31%) and middle school (11%) (+/- 2.97%) students were more likely to have ever used chewing tobacco, snuff, or dip than female high school (8%) (+/- 1.60%) and middle school (4%) (+/- 1.60%) students. (CR25 by CR2)	47% MHS decrease 39% MMS decrease
Twelve percent (+/- 1.46%) of high school students were established smokers, having smoked over 100 cigarettes in their lifetime and on 20 or more of the past 30 days. About two percent (+/- 0.81%) of middle school students were established smokers. (ESTAB)	Eight percent (+/- 3.07%) of high school students were established smokers, having smoked over 100 cigarettes in their lifetime and on 20 or more of the past 30 days. About one percent (.9) (+/- 0.47%) of middle school students were noted as established smokers. (ESTAB)	
Students who have tried smoking cigarettes, but have smoked less than 100 cigarettes in their lifetime, were considered experimenters. Forty percent (+/- 1.96%) of high school students and twenty-six percent (+/- 2.88%) of middle school students were experimenters. (EXPER)	Students who have tried smoking cigarettes, but have smoked less than 100 cigarettes in their lifetime, were considered experimenters. Thirty-two (+/- 5.92%) percent of high school students and fifteen percent (+/- 4.14%) of middle school students were experimenters. (EXPER)	20% HS decrease 42% MS decrease
Forty-seven percent (+/- 2.11%) of high school students and thirty percent (+/- 3.37%) of middle school students were at high risk for becoming established smokers (either experimenters or non-daily current smokers). A somewhat higher percent of middle school males (32%) were at high risk for becoming established smokers than middle school females (29%). The same held true with high school males (48%) and females (46%). (RISK)	Forty-one percent (+/- 5.09%) of high school students and eighteen percent (+/- 5.00%) of middle school students were at high risk for becoming established smokers (either experimenters or non-daily current smokers). A somewhat higher percent of males were at high risk for becoming established smokers than females, but the difference was not great. Middle school males (19%) vs. middle school females (16%), and for high school students (42% males vs. 40% females). (RISK)	
Virginia students reported getting cigarettes in a variety of ways. Twenty-six percent of students (+/- 2.8%) report that they “gave someone else money to buy them for me.” The same percentage (+/- 2.3%) reported that they “borrowed or bummed them from someone else.” (CR14 by YEARNUM)	Virginia students reported getting cigarettes in a variety of ways. Twenty-three percent of students (+/- 6.2%) report that they “borrowed or bummed them from someone else.” Slightly fewer (+/- 6.2%) noted that they “gave someone else money to buy them for me.” (CR14 by YEARNUM)	
Sixteen percent (+/- 2.2%) (6% of middle school [+/- 2.0%] and 20 % of high school students [+/- 3.0%]) reported buying cigarettes in a store. Sixty-nine percent of middle school students and sixty-one percent of high school students who bought cigarettes in a store were not asked to show proof of age (data too sparse to support robust confidence interval estimates). (CR14 by SCHBOTH)	Seventeen percent (+/- 8.4%) (9% of middle school [+/- 5.1%] and 19.5% of high school students [+/- 1.1%]) of the students who smoked cigarettes in the past month reported buying them in a store. Of the students who bought cigarettes in a store, sixty-eight percent of middle school students and fifty percent of the high school students were not asked to show proof of age (data too sparse to support robust confidence interval estimates). (CR14 by SCHBOTH)	
Forty-six percent (+/- 1.8%) of students lived with someone who smokes cigarettes. Sixty-eight percent (+/- 1.6%) were exposed to second-hand smoke in a car or room during the past week. (CR61, EXPOSURE)	Thirty-seven percent (+/- 3.7%) of students lived with someone who smokes cigarettes. Fifty-eight percent (+/- 2.8%) were exposed to second-hand smoke in a car or room during the past week. There was a steady increase as the youth aged, with less than half (46%) of the 6 th graders reporting being exposed to second-hand smoke, as compared to 72% of the 12 th graders. (CR61, EXPOSURE)	

2001 FINDINGS	2003 FINDINGS	
Ninety percent (+/- 1.2%) of high school students and eighty-eight percent (+/- 1.6%) of middle school students believed that smoke from other people's cigarettes was "probably" or "definitely" harmful to them. (CR60)	Ninety-two percent (+/- 1.1%) of students believed that smoke from other people's cigarettes was "probably" or "definitely" harmful to them. There was not much variance in the responses of middle and high school students. (CR60)	
Seventy-seven percent of students (+/- 1.1%) had seen or heard one or more commercials on TV, the internet, or on radio in the past 30 days about the dangers of cigarette smoking. (ADS2001)	Eighty-five percent of students (+/- 2.2%) had seen or heard one or more commercials on TV, the internet, or on radio in the past 30 days about the dangers of cigarette smoking. (ADS2003)	
During the past 12 months, 22% of students (+/- 1.4%) bought or received something that had a tobacco company name on it. Thirty-one percent (+/- 1.9%) said they would definitely or probably wear something that has a tobacco company name or picture on it (e.g., lighter, t-shirt, hat, sunglasses). Eighty-three percent of students (+/- 1.3%) reported seeing tobacco use in movies some or most of the time. (BUY2001, CR57 by YEARNUM, ACT2001)	During the past 12 months, 15% of students (+/- 1.9%) bought or received something that had a tobacco company name on it. Forty-six percent (+/- 3.1%) said that they would definitely not use or wear something that has a tobacco company name or picture on it (e.g., lighter, t-shirt, hat, sunglasses). (BUY2003, CR57 by YEARNUM)	
Male high school students had more positive images of smoking than females. They were more likely than females (14% [+/- 1.7%], compared to 6% [+/- 1.2%]) to believe that people could "probably not" or "definitely not" get addicted to tobacco. High school male students (7% [+/- 1.6%]) were more likely than females (3% [+/- 0.8%]) to think smoking cigarettes "definitely" makes young people look cool or fit in. (CR42 by CR2, CR44 by CR2)	Male high school students had more positive images of smoking than females. They were more likely than females (13% [+/- 3.6%], compared to 7% [+/- 1.5%]) to believe that people could "probably not" or "definitely not" get addicted to tobacco. High school male students (9% [+/- 3.2%]) were more likely than females (3% [+/- 1.9%]) to think smoking cigarettes "definitely" makes young people look cool or fit in. (CR42 by CR2, CR44 by CR2)	
Seventy-nine percent of high school males (+/- 1.7%) and 88% of high school females (+/- 1.6%) "probably" and "definitely" do not feel that it is safe to smoke for only a year or two. (CR46 by CR2 and SCHBOTH)	Eighty percent of high school males (+/- 2.4%) and 91% of high school females (+/- 2.3%) "probably" and "definitely" do not feel that it is safe to smoke for only a year or two. (CR46 by CR2 and SCHBOTH)	
Twenty-eight percent of high school students (+/- 2.2%) and twenty-five percent of middle school students (+/- 2.7%) initiated tobacco use before the age of thirteen. Male students were more likely than female students to do this. (ALLAGE by SCHBOTH)	Twenty-one percent of high school students (+/- 5.0%) and seventeen percent of middle school students (+/- 3.1%) initiated tobacco use before the age of thirteen. Male students were more likely than female students to try tobacco before the age of thirteen. (ALLAGE by SCHBOTH)	
In looking at differences based on race, white students are more likely to be established smokers than black or Hispanic students; however Hispanic students (51% [+/- 7.1%]) were at the highest risk of becoming an established smoker.	In looking at differences based on race, white students are more likely to be established smokers than black or Hispanic students; however Hispanic students (45% [+/- 14.2%]) were at the highest risk of becoming an established smoker.	

Appendix C

Technical Report on Methodology

Youth Tobacco Survey, 2003

Technical Report

Methodology

Survey Administration and Quality Control. Following receipt of the list of randomly selected schools from the CDC, an Access database was constructed that included and linked all contact information for the selected schools at the division and school level. The information included in this database was downloaded from Virginia's Department of Education (VDOE) website and/or obtained directly from VDOE. This database was updated with additional information that came directly from a division's superintendent's office or from the selected schools. This database was then utilized for all subsequent phone, e-mail or mailings to the superintendents or school principals. It was also utilized to track communications with both division superintendents and schools. Reports were generated at least weekly detailing the status of all schools.

Contact began at the division level. All superintendents from districts of schools selected were notified by phone that they would be receiving a packet in the mail describing the Youth Tobacco Survey (YTS) project. This packet of information included several items: a copy of the YTS, a cover letter addressed to the superintendent detailing the study, letters of endorsement from officials in state government, a copy of the parental notification form, a FAQ sheet, and a form that the division could send back that indicated whether or not they would be willing to participate as well as a self-addressed, stamped envelope that they could use to return the form. After discovering that superintendents did not necessarily receive packets that were sent by regular U.S. Mail, we began to send packets by Federal Express. We found that we had fewer instances of superintendents who reported not receiving the packets when we implemented this procedure. If we did not receive the completed form indicating agreement to participate, we followed up with a phone call within 1-2 weeks.

After receiving consent at the division level to include a school(s) in the study, a phone call was placed to the school principal to notify them of their inclusion in the study and to let them know that they would be receiving a packet regarding the YTS in the next couple of days. (Note: in some cases a school division would elect to appoint a coordinator within the school system to handle coordination with their schools. In these cases we had very little contact with the schools until it was time to confirm administration). School packets included the same information and form as the district level packets, as well as a form requesting that they provide a list all of their 2nd period classes. Packets were again mailed via FedEx, and if we did not receive confirmation of participation within a week we followed up with a phone call to the school principal. Most principals provided the name of a school coordinator, who then provided the list of classes. If a school was not able to use 2nd period classes, they could provide us with some other class list that would include each eligible student once and only once. For example, in some schools all children are required to take Physical Education (PE). In those schools we could select from PE classes, and eliminate the need to take class time from core classes or classes that were focusing on the state Standards of Learning (SOL) exams. Once a class list was received, eligible classes were numbered and randomly selected using a list of numbers provided from the CDC that was based on the size of the school. It was expected that we would select an average of 2 classes per school for this study.

Designated school coordinators were advised of the classes that were selected at their school and were asked to select a date and time for administration. Once a date and time were selected, the school coordinator was e-mailed a confirmation of the date(s), times and classes included in the survey effort, as well as a reminder of the school's responsibilities prior to survey administration. This e-mail included an electronic copy of the parental notification letter and a one page fact sheet about the Youth Tobacco Survey. The letter notified the parents of the survey and provided a brief description of the survey instrument and its intended use. The letter explained that participation of their student was voluntary and that no action would be taken against the school, the parent, or the child, if the child chose not take part. The letter also explained how each child's anonymity would be protected and that no name or other identifying information would be placed on the survey instrument. Parents could also complete the bottom portion of the form and return it to school if they did not want their child to participate. These letters were to be sent home with students before the survey administration date. In addition to the letter, a one page fact sheet about the study was also sent home to parents.

Once a school had selected a date and time, the scheduling coordinator would notify survey administrators, who would sign up as they were available. Survey packets to be taken to the schools were assembled and checked for accuracy. Two days prior to administration the school coordinator was contacted to verify time of arrival and to ensure that the parental notification letters were sent out to parents of the students in the selected classrooms. In some cases this had not yet been done and administration was rescheduled. As a measure of quality assurance, packets were rechecked by the survey administrator prior to leaving for administration.

Prior to the hiring and training of survey administrators, a CDC representative came to Richmond to train senior project staff on survey administration. She provided training materials that staff could then use to train survey administrators. Survey administrators were recruited at the University's employment website, seeking upper-level undergraduates or graduate students with experience in an educational setting. After applications were accepted, screened, and interviews were held, selected administrators participated in a comprehensive training session. This training session included an overview of the Youth Tobacco Survey project, the importance of confidentiality, the specifics on how to document school and class participation, protocol on the presentation and administration of the YTS to the students, materials needed for survey administration, and instructions on how to complete all related forms.

The survey was administered from September through November of 2003. These dates were selected in order to accommodate as many schools as possible, and to avoid dates for SOL or other standardized testing. Before administering the survey, all students who had returned the opt-out form from their parents and all students who declined to participate were removed from the survey administration area. Administrators provided students with a survey, an answer sheet and a No. 2 pencil. All administrators read a prepared script aloud which included information about survey, instructions on how to correctly complete the survey, and a sentence that stated that the student could skip any questions that they did not want to answer. Students were instructed not to place their name anywhere on the survey or answer sheet., and no other information was placed on the survey that could link it to an individual. After completing the survey, students brought the answer sheet up and placed it themselves in an envelope. This procedure was designed to ensure the anonymity of all participants. When all students have returned their answer sheets, the administrator recorded on the Classroom-Level Form the number of participating students. Administrators were instructed to wait until the students had left the room and then count the answer sheets, after which they completed a Header Sheet for

each selected class. Administrators verified total enrollment for the classroom with the teacher. If this number varied from the enrollment number given to us by the school coordinator, the administrator would find out the reason for the difference and record this information on the form.

Header sheets and all completed surveys were returned to the Survey and Evaluation Research Laboratory for processing and submission to the CDC. All surveys were reviewed by staff in order to assure that all forms were filled out completely and correctly. SERL staff would attempt to more completely erase errant pencil marks or completely fill bubbles on the scan sheet prior to submission for scanning. SERL staff made no attempt to determine a response in the situations where it was unclear, choosing to leave items blank. YTS scan sheets were sent directly to the CDC's contractor for scanning. SERL received case level data from CDC, which was analyzed by SERL staff members.

Sampling and Weighting

Both surveys were administered according to guidance issued by the Centers for Disease Control and Prevention (CDC). The samples for each year were selected and provided by the CDC and were based off of the State Department of Education's public school enrollment data. VCU was contracted to analyze and compare the 2001 Virginia YTS and 2003 Virginia YTS data. In order to facilitate comparisons between the 2001 Virginia YTS and 2003 Virginia YTS as well as generalizations to the state's population of middle and high school students, VCU weighted both final data sets for analysis.

Essentially, two separate samples were selected, one consisting of high school students, and one comprised of middle school students. For the high school sample in the 2003 Virginia YTS, all regular schools containing grades 9, 10, 11, or 12 were included in the sampling frame. For the middle school sample in the 2003 Virginia YTS, all regular schools containing grades 6, 7, or 8 were included in the sampling frame

A two-stage cluster sample design was used to produce a representative sample of students in grades 6-8 and for those in grades 9-12.

The first-stage (school level) sampling frame consisted of all schools containing any of grades 9-12 for the High School sample and grades 6-8 for the middle school sample. Schools were selected with probability proportional to school enrollment size. The second sampling stage (class level) consisted of systematic equal probability sampling (with a random start) of classes from each school that participated in the survey. Second period classes were targeted for inclusion in the sampling frames for selected schools, but in some cases other class periods or types of classes were substituted. Substitutions occurred when schools declined to make second period classes available (e.g., because they did not want to lose SOL-related instruction time) or their second period classes would not have included all students in the sampling frame. All students in the selected classes were eligible to participate in the survey.

At the high school level, 50 schools were selected and 35 agreed to participate (70.00%). Within the selected classes at those schools there were 1,308 students, of whom 1,022 (78.13%) returned usable questionnaires. The overall response rate for high schools in the 2003 Virginia YTS is 55% ($70.00\% * 78.13\% = 54.69\%$).

At the middle school level, 48 schools were selected and 33 agreed to participate (68.75%). Within the selected classes at those schools there were 1,539 students, of whom 1,188 (77.19%) returned usable questionnaires. The overall response rate for middle schools in the 2003 Virginia YTS is 53% ($68.75\% * 77.19\% = 53.07\%$).

Overall, Virginia's response rate was 54%. This was determined based on a school-level response rate of 69% multiplied by the student-level response rate of 78%. This is below CDC's established threshold of 60%.

If the response rate for the YTS is 60% or above, CDC supports generalizing the survey data to the overall population of interest. In that case, CDC executes full population weighting of the data file including poststratification demographic weighting. If the response rate for the YTS is below 60%, CDC recommends that the data not be generalized, and does not execute the full weighting protocol for the file. CDC does, however, calculate and deliver partial weights that account for unequal chances of selection in the sampling process, as well as differential rates of response across strata or primary sampling units. CDC notes that unweighted data cannot be generalized to all students in the state; the unweighted data reflect only those students who actually answered.

In VCU's opinion, CDC's identification of a 60% response rate as the threshold for allowing generalization of the data without significant nonresponse bias is ultimately a somewhat arbitrary decision that represents administrative convenience. Nonresponse bias is the product of two terms: the rate of nonresponse, and the amount of difference between responders and nonresponders. If a survey has a very low response rate but there are no differences between responders and nonresponders, there is no nonresponse bias. Similarly, a survey with a very high response rate could still be biased if nonresponders differ in the extreme from responders. Therefore, response rates by themselves do not measure data quality or data representativeness.

Because the overall response rate on the 2003 Virginia YTS (54%) was less than 60%, CDC did not recommend generalizing the data to all middle school and high school children in Virginia. VCU considered the possibility of serious nonresponse bias in the 2003 Virginia YTS by comparing respondent characteristics to known student population enrollment data. After this comparison, VCU concluded that it did not seem irresponsible to generalize the 2003 Virginia YTS data to the population of middle school and high school students in the state.

Any formal analysis of nonresponse bias would have proceeded along indirect lines because there were no observable data about the nonresponding students or schools. The indirect evidence available included the race, grade, gender and geographical location of the students. Race, grade and gender were the variables used in the poststratification weighting. Therefore, any biases caused by over- or under-representing particular combinations of race, grade and gender would be adjusted in poststratification weighting.

Overall, in both the middle school and high school data white students tended to be somewhat underrepresented, while students of African-American and other ethnicities were somewhat overrepresented. The poststratification weights ranged from about 0.51 (male middle schoolers of other ethnicities) to about 1.27 (male high schoolers of white ethnicity). These are not unusually extreme weighting values. In addition, the geographic spread of the responding schools and school divisions is diverse and includes significant representation from all health planning regions in the state. Given these indicators, the likelihood seemed small that the 2003

Virginia YTS, as collected, would be unrepresentative at a 56% response rate but representative at a 60% response rate. Therefore, VCU executed the poststratification weighting scheme for the purpose of generalizing the 2003 Virginia YTS to the state.

These results were assumed to extend to the 2001 Virginia YTS, but no explicit analysis regarding nonresponse bias was performed on the 2001 Virginia YTS data.

To generalize the 2001 Virginia YTS and 2003 Virginia YTS data, VCU completed the weighting scheme in each year by executing the poststratification demographic weighting. These calculations did not replicate CDC methods precisely. For example, CDC imputes all missing data items that are needed for weighting, and VCU did this only for cases that were missing the respondent's grade level. But VCU followed the general logic of the CDC methods and executed a standard poststratification demographic weighting scheme and integrated this into the sample and population weights calculated by CDC. Using this weighting variable, VCU produced weighted data tables to support generalizing the data to the study population.

The 2001 Virginia YTS data and 2003 Virginia YTS data were weighted to account for unequal chances of selection, differential non-response, and demographics (grade, race, and gender) so as to better represent middle school and high school children in Virginia. VCU used some information from CDC as part of this process and executed additional parts of the weighting process independently, following the logic of CDC's process for fully weighting the data.

The sampling and weighting procedures for the Virginia YTS involve a clustered and stratified design. Such complex sample designs require special approaches to calculating sampling variances. Because sampling variances underlie the calculation of confidence intervals for survey statistics (such as sampling errors and tests of statistical significance), it is critical to calculate them correctly by taking into account the effects of the complex sample design.

In general, the confidence intervals on these estimates are 1.5 to 2 times as wide as confidence intervals that would be calculated by assuming this was a simple random sample (that is, by ignoring the sample design information in the file). Sampling errors for many items in the 2001 Virginia YTS and 2003 Virginia YTS are approximately +/- 1% to +/- 5%. Overall, sampling errors for items in the 2001 Virginia YTS and 2003 Virginia YTS that were reported in the VTSF draft press release of 6/2/04 range from +/- 0.04% to +/- 19.11%, with a median sampling error value of +/- 2.10% and a mean of +/- 2.69%. A copy of this draft press release with the correct sampling errors (confidence intervals) is included in Appendix B.

Readers should keep in mind that surveys may have other errors besides sampling error. Every effort was made to minimize all sources of error in this survey, but errors other than sampling error can be difficult or impossible to measure.

Appendix D

Data Tables