

2004 Tennessee Youth Tobacco Survey Summary

Tennessee Department of Health

**Office of Policy, Planning and Assessment
Surveillance, Epidemiology and Evaluation**

**Community Services Section
Tobacco Use Prevention and Control Program**

Acknowledgements

The 2004 Tennessee Youth Tobacco Survey was successful due to the strong support of the school superintendents, administrators, principals, teachers and staff of the Tennessee public school system, as well as to the efforts of Tennessee Department of Health regional Tobacco Use Prevention and Control Program coordinators, regional community services personnel and county health educators throughout the state. Much appreciation also goes out for the tremendous support from the Office of Smoking and Health at the Centers for Disease Control and Prevention in Atlanta, Georgia.

Suggested Citation:

Office of Policy, Planning and Assessment and Community Services Section (2007). *2004 Tennessee Youth Tobacco Survey Summary*. Tennessee Department of Health, Nashville, TN.

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*Regional-level data on these topics are included in the Appendix.

Key Findings

Prevalence of Tobacco Use

- Over one-third of public middle school students had ever tried a tobacco product and approximately one-fifth currently used one or more forms of tobacco.
- Boys were more likely than girls to use tobacco.
- Cigarettes were the most common form of tobacco used.
- Use of cigarettes and of cigars decreased between 1999 and 2004. However, use of smokeless tobacco did not change during this time.

Knowledge and Attitudes

- Over one-half of students overestimated the prevalence of tobacco use among their peers.
- Current smokers were more likely than never smokers to have friends who smoke cigarettes.
- Current smokers were more likely than never smokers to believe that smokers have more friends and that they look cool.
- Among students who had never smoked cigarettes, 20% were susceptible to initiating cigarette smoking.
- Approximately 80% of current smokers believed that smoking is addictive and harmful.

Access and Enforcement

- The majority of current smokers usually obtained their cigarettes by borrowing them or by giving someone else money to buy them. Only 7% usually purchased their cigarettes from a store.
- Gas stations were the most common place to purchase cigarettes.
- Approximately two-thirds of students purchasing or attempting to purchase cigarettes from a store were not asked to show proof of age.

Media and Advertising

- Approximately 80% of students said they saw actors using tobacco most or some of the time when watching television or movies.
- Approximately 60% of students had seen anti-tobacco advertisements in the past month; there was no difference in the percentage of current and never tobacco users who saw these ads.
- Gas stations were the most common place students said they saw tobacco advertisements.

Cessation

- One-half of current cigarette smokers said they wanted to stop smoking.
- Approximately three-quarters of current cigarette smokers who had tried unsuccessfully to quit in the past 12 months still believed they could quit if they wanted to.

Environmental Tobacco Exposure

- Two-thirds of students had been in the same room and/or in a car with a smoker in the past week.
- One-half of students said someone in their home smokes cigarettes; current smokers were more likely than never smokers to live with someone who smokes.

Tobacco Use and Education at School

- During the past school year, approximately 50% of students had been taught about the dangers of tobacco and 30% had practiced saying no to tobacco; there were no significant differences in the percentage of current versus never tobacco users who had participated in these activities.
- Students who had never used tobacco were more likely than current users to say that the tobacco information received in school was valuable.

Introduction

Tobacco use is the single most preventable cause of disease and death in the United States.¹ Tobacco related deaths number approximately 438,000 per year, representing 5.5 million years of potential life lost and \$167 billion in health care costs and lost productivity annually.² In addition, approximately 8.6 million persons in the United States have serious illnesses attributable to smoking.³ Smoking is associated with chronic bronchitis, emphysema, heart disease, stroke, cancer, low birthweight and sudden infant death syndrome.^{3,4} Although smoking by young people is associated with increased risk for health problems in adulthood, it also causes immediate health problems, such as shortness of breath, coughing, wheezing and poor physical fitness.⁵

Each day in the United States, approximately 4,000 youths aged 12-18 years try their first cigarette.⁶ The younger people begin smoking cigarettes, the more likely they are to become strongly addicted to nicotine.⁵ Among addictive behaviors such as the use of alcohol and other drugs, cigarette smoking and smokeless tobacco use are the most likely to become established during adolescence – nearly all first use of tobacco occurs before high school graduation.⁵ This suggests that if adolescents can keep tobacco-free, most will never start using tobacco.⁵

The 2004 Tennessee Youth Tobacco Survey was conducted by the Tennessee Department of Health's Tobacco Use Prevention and Control Program, in conjunction with the Centers for Disease Control and Prevention's Office of Smoking and Health, to provide data for planning, evaluating and improving programs to prevent and control youth tobacco use. It includes information about the prevalence of tobacco use, as well as the following topics: knowledge and attitudes about tobacco, access to tobacco and enforcement of tobacco control laws, exposure to pro- and anti-tobacco advertisements, tobacco cessation, environmental exposure to tobacco, and tobacco education in schools. The survey was completed by almost 9,500 middle school students in 110 public schools across the state. This report summarizes the results of the survey, offering the most up-to-date picture possible of tobacco use among young people in Tennessee.

Response Rates and Demographics

Response Rates

A total of 126 public middle schools in Tennessee were randomly selected to participate in the 2004 Tennessee Youth Tobacco Survey. Among these 126 selected schools, 110 agreed to take part in the survey, resulting in an 87% school response rate. A total of 11,675 students within these 110 participating schools were asked to take part in the survey, of which 9,454 actually completed the survey, resulting in an 81% student response rate. The overall response rate statewide was therefore 71%. Regional-level response rates are presented in Table 1. For a more detailed discussion of survey methodology, see Technical Notes.

Table 1. Sample sizes and response rates by region – Tennessee Youth Tobacco Survey, 2004

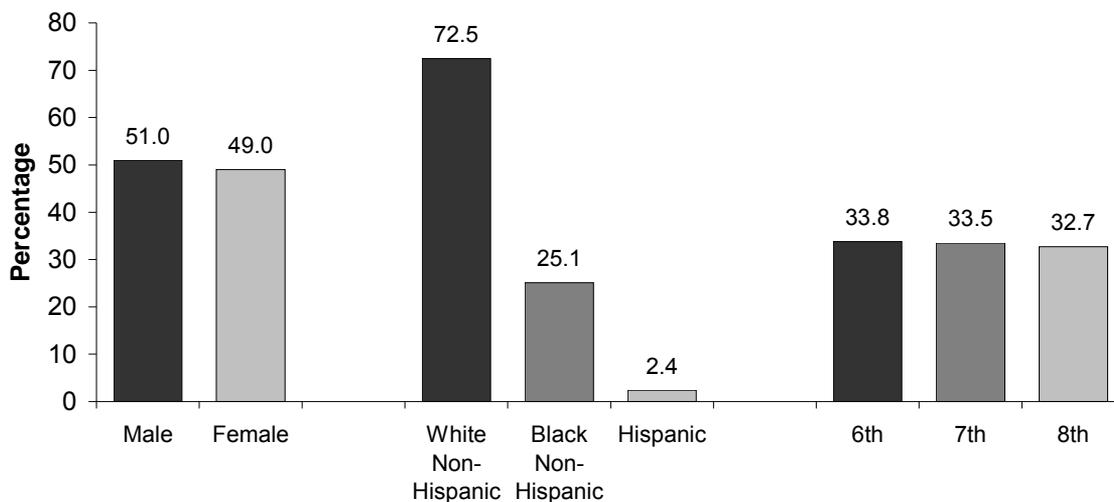
	Sample Size		Response Rate		
	Schools	Students	Schools	Students	Overall
Davidson	9	835	100%	82%	82%
East	10	975	100%	79%	79%
Hamilton	10	845	100%	84%	84%
Knox	8	629	80%	85%	68%
Madison	8	768	100%	94%	94%
Mid Cumberland	10	1,056	100%	87%	87%
Northeast	8	722	80%	83%	66%
Shelby	9	377	100%	40%	40%
South Central	8	687	80%	88%	71%
Southeast	6	499	60%	83%	50%
Sullivan	6	561	60%	87%	52%
Upper Cumberland	9	746	90%	81%	73%
West	9	754	90%	84%	76%
Urban Regions	50	4015	89%	78%	69%
Rural Regions	60	5439	86%	83%	72%
State Total	110	9,454	87%	81%	71%

Response Rates and Demographics

Demographics

Among the 9,454 public middle school students who completed the survey, 51% were male and 49% were female. The majority of students completing the survey were white non-Hispanic (73%), followed by black non-Hispanic (25%) and Hispanic (2%). A similar percentage of 6th, 7th and 8th graders participated in the survey (34%, 34% and 33%, respectively) (Figure 1).

Figure 1. Gender, Race/Ethnicity and Grade Level of Participants -- Tennessee Youth Tobacco Survey, 2004



Factors Associated with Tobacco Use among Youth

- Low socioeconomic status
- Use and approval of tobacco use by peers or siblings
- Smoking by parents or guardians
- Accessibility, availability and price of tobacco products
- A perception that tobacco use is normative
- Belief in the benefits of tobacco use
- Lack of parental support or involvement
- Low levels of academic achievement
- Low self-image or self-esteem
- Lack of skills to resist influences to tobacco use
- Lack of self-efficacy to refuse offers of tobacco



Sources:

Centers for Disease Control and Prevention. *Preventing Tobacco Use among Young People: A Report of the Surgeon General*. Atlanta, GA: U.S. Department of Health and Human Services, 1994.

Centers for Disease Control and Prevention. *Reducing Tobacco Use: A Report of the Surgeon General*. Atlanta, GA: U.S. Department of Health and Human Services, 2000.

Prevalence of Tobacco Use

Lifetime Use

Students were asked if they had *ever* tried cigarettes, cigars (including cigarillos and little cigars), smokeless tobacco (including chew, snuff and dip), bidis or kreteks. Forty percent of students reported having ever used any of these tobacco products. Cigarettes were the most prevalent form of tobacco ever used, followed by cigars, smokeless tobacco, bidis and kreteks (Figure 2). Lifetime use of tobacco by type of product, gender, race and school grade is summarized in Table 2. Regional-level data on lifetime tobacco use are summarized in Table A of the Appendix.

Male students were more likely than female students to have ever used any tobacco product. Boys were also more likely than girls to have ever used cigars, smokeless tobacco, bidis and kreteks.*

White students were more likely than black students to have ever used smokeless tobacco. Black students were more likely than white students to have ever used cigarettes or cigars. Hispanic students were more likely than white students to have ever used cigarettes. There were no statistically significant racial or ethnic differences in the percentage of students who reported having ever used any tobacco product, bidis or kreteks.

The percentage of students who reported having ever used any tobacco product increased with increasing grade level (Figure 3).

Figure 2. Middle School Students Who Ever Used Tobacco by Type of Product -- Tennessee Youth Tobacco Survey, 2004

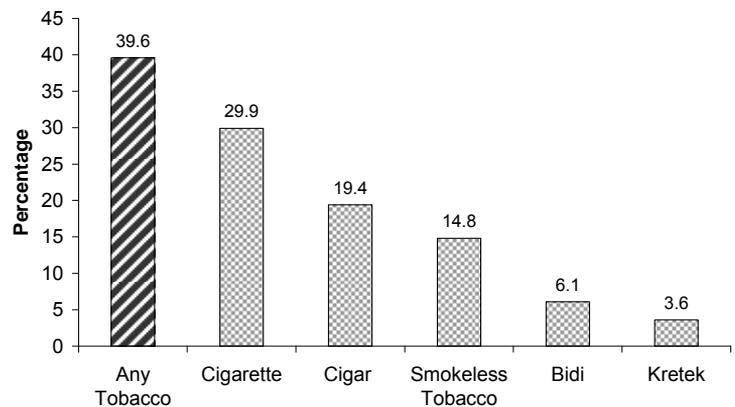
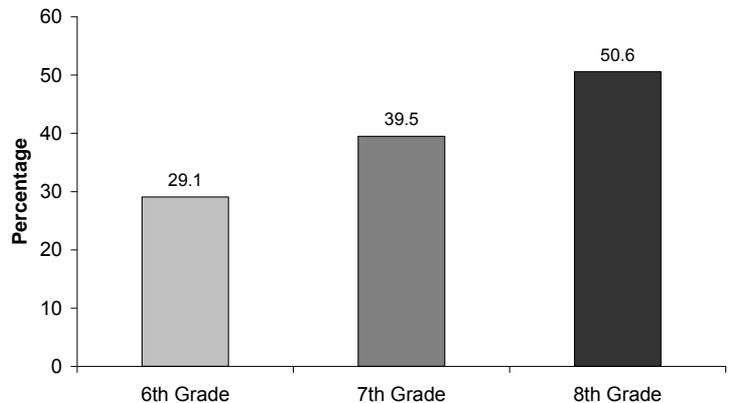


Figure 3. Middle School Students Who Ever Used Tobacco by School Grade -- Tennessee Youth Tobacco Survey, 2004



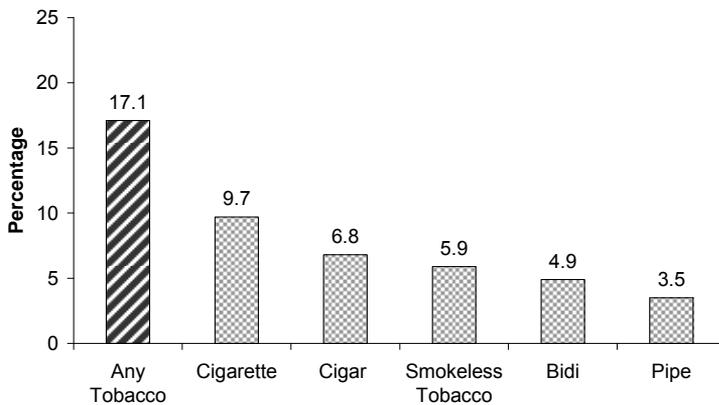
*Unless otherwise indicated, differences noted in the text and charts are statistically significant. See Technical Notes for explanation of statistical analysis methods.

Prevalence of Tobacco Use

Current Use

Students were asked if they had used cigarettes, cigars (including cigarillos and little cigars), smokeless tobacco (including chew, snuff and dip), tobacco in pipes or bidis on 1 or more of the 30 days preceding the survey (i.e., current use). Seventeen percent of students currently used one or more of these tobacco products. Cigarettes were the most prevalent form of tobacco currently used, followed by cigars, smokeless tobacco, bidis and pipes (Figure 4) – a pattern similar to that observed for lifetime tobacco use. Current use of tobacco by type of product, gender, race and school grade is summarized in Table 3. Regional-level data on current tobacco use are summarized in Table B of the Appendix.

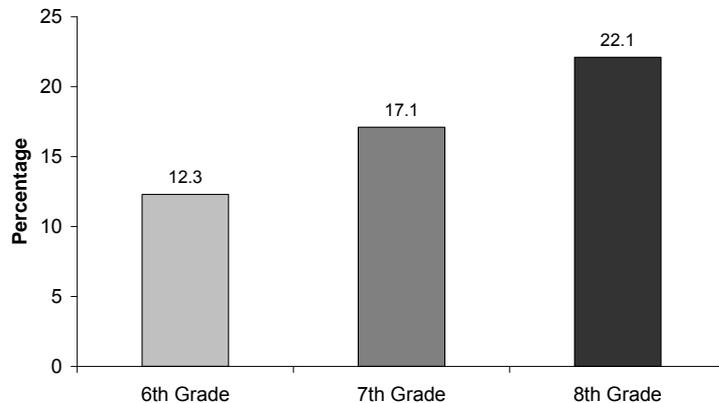
Figure 4. Middle School Students Who Were Current Tobacco Users by Type of Product -- Tennessee Youth Tobacco Survey, 2004



Male students were more likely than female students to be current tobacco users. Boys were also more likely than girls to currently use cigars, smokeless tobacco, pipes, and bidis.

White students were more likely than black students to currently use cigarettes and smokeless tobacco. Black students were more likely than white students to currently use bidis. There were no statistically significant racial or ethnic differences in the percentage of students who reported currently using any tobacco product, cigars or pipes.

Figure 5. Middle School Students Who Currently Use Tobacco by School Grade -- Tennessee Youth Tobacco Survey, 2004



The percentage of students who reported currently using any tobacco product increased with increasing grade level (Figure 5).

Prevalence of Tobacco Use

Table 2. Percentage of middle school students who ever used tobacco by type of product – Tennessee Youth Tobacco Survey, 2004

	Any	Cigarette	Cigar	Smokeless Tobacco	Bidi	Kretek
	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)
<i>Gender</i>						
Male	43.2 (± 2.6)	31.0 (± 3.0)	22.8 (± 1.9)	20.8 (± 2.0)	7.7 (± 1.6)	4.5 (± 1.0)
Female	35.4 (± 3.4)	28.5 (± 3.5)	15.7 (± 2.4)	8.7 (± 1.6)	4.3 (± 1.1)	2.5 (± 1.0)
<i>Race/Ethnicity</i>						
White	37.8 (± 3.0)	28.4 (± 3.3)	18.1 (± 1.8)	16.3 (± 1.4)	5.4 (± 1.3)	3.8 (± 1.1)
Black	43.4 (± 4.3)	32.9 (± 3.3)	23.2 (± 3.4)	10.3 (± 3.3)	7.2 (± 2.2)	2.8 (± 1.3)
Hispanic	50.2 (± 9.5)	43.0 (±10.0)	23.5 (± 7.8)	15.0 (± 5.4)	10.3 (± 4.5)	4.0 (± 2.1)
<i>Grade</i>						
6 th	29.1 (± 2.8)	19.3 (± 3.7)	12.9 (± 1.8)	10.8 (± 1.4)	5.1 (± 1.6)	2.7 (± 0.9)
7 th	39.5 (± 5.0)	28.3 (± 4.2)	20.2 (± 2.5)	15.4 (± 3.6)	6.1 (± 2.3)	4.5 (± 2.4)
8 th	50.6 (± 3.6)	42.3 (± 3.9)	25.4 (± 2.4)	18.4 (± 2.8)	7.0 (± 1.6)	3.6 (± 1.0)
State Total	39.6 (± 2.7)	29.9 (± 2.9)	19.4 (± 1.7)	14.8 (± 1.4)	6.1 (± 1.2)	3.6 (± 0.9)

Table 3. Percentage of middle school students who currently use tobacco by type of product – Tennessee Youth Tobacco Survey, 2004

	Any	Cigarette	Cigar	Smokeless Tobacco	Bidi	Pipe
	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)
<i>Gender</i>						
Male	19.9 (± 2.1)	10.0 (± 1.7)	7.8 (± 1.0)	9.3 (± 1.2)	6.4 (± 1.2)	4.7 (± 1.3)
Female	14.2 (± 2.6)	9.5 (± 2.0)	5.8 (± 1.7)	2.5 (± 0.9)	3.2 (± 0.9)	2.3 (± 0.9)
<i>Race/Ethnicity</i>						
White	16.7 (± 2.3)	10.4 (± 1.9)	5.9 (± 1.2)	6.5 (± 0.9)	4.3 (± 0.9)	3.8 (± 1.2)
Black	17.9 (± 3.1)	7.1 (± 2.0)	8.7 (± 2.5)	4.3 (± 1.7)	6.3 (± 1.2)	2.5 (± 1.0)
Hispanic	19.2 (± 8.0)	12.0 (±7.6)	10.9 (± 7.3)	4.1 (± 2.1)	6.9 (± 3.7)	4.4 (± 2.5)
<i>Grade</i>						
6 th	12.3 (± 2.3)	5.6 (± 1.5)	4.1 (± 1.2)	4.0 (± 1.2)	4.6 (± 1.1)	2.7 (± 1.1)
7 th	17.1 (± 4.0)	9.3 (± 2.5)	7.5 (± 2.6)	6.4 (± 2.0)	4.8 (± 1.8)	4.3 (± 2.5)
8 th	22.1 (± 2.9)	14.4 (± 2.9)	8.8 (± 1.8)	7.5 (± 1.6)	5.2 (± 1.3)	3.6 (± 1.0)
State Total	17.1 (± 2.1)	9.7 (± 1.6)	6.8 (± 1.2)	5.9 (± 0.8)	4.9 (± 0.8)	3.5 (± 1.0)

Prevalence of Tobacco Use

Lifetime and Current Use – 1999 vs. 2004

Between 1999 and 2004, there were statistically significant decreases in the percentage of middle school students who had ever tried cigarettes and who had ever tried cigars. Although there was also a small decrease in the percentage of students who had ever tried smokeless tobacco, this change was not statistically significant (Figure 6).[†]

Between 1999 and 2004, there were decreases in the percentage of middle school students who were current users of cigarettes and of cigars. However, only the change in current use of cigarettes was statistically significant. The percentage of students who were current users of smokeless tobacco did not change between 1999 and 2004 (Figure 7).

Figure 6. Middle School Students Who Ever Used Tobacco by Type of Product -- Tennessee Youth Tobacco Survey, 1999 and 2004

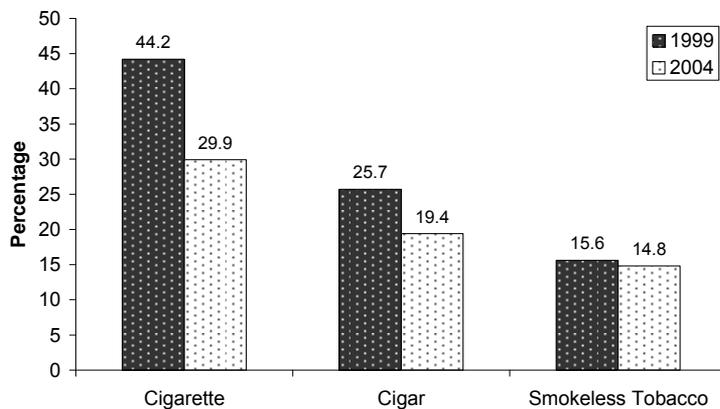
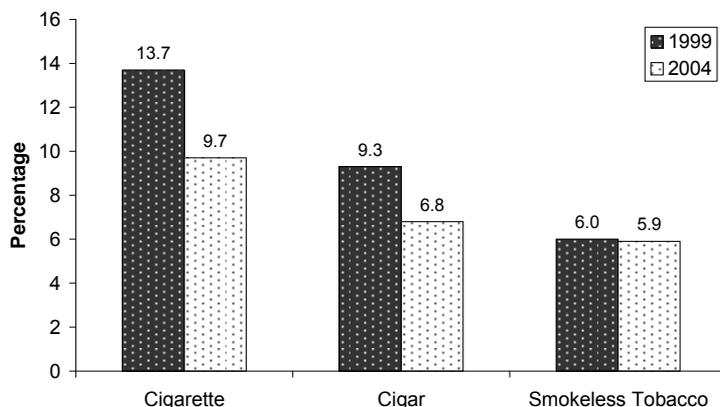


Figure 7. Middle School Students Who Were Current Tobacco Users by Type of Product -- Tennessee Youth Tobacco Survey, 1999 and 2004



How does Tennessee compare to the United States?

In 2004, the prevalence of current tobacco use in Tennessee was higher than in the United States.

A higher percentage of middle school students in Tennessee reported currently using any tobacco, cigarettes, cigars, smokeless tobacco, bidis and pipes:

	TN	US
Any Tobacco	17.1	11.8
Cigarettes	9.7	8.4
Cigars	6.8	5.2
Smokeless Tobacco	5.9	2.9
Bidis	4.9	2.3
Pipes	3.5	2.7

U.S. Data Source: Centers for Disease Control and Prevention. Tobacco Use, Access and Exposure to Tobacco in Media among Middle and High School Students – U.S., 2004. MMWR 2005; 54(12):297-301.

[†]1999 Data Source: Centers for Disease Control and Prevention. *CDC Surveillance Summaries*. MMWR 2000; 49(No. SS-10).

Prevalence of Tobacco Use

Number of Cigarettes Smoked per Day

Current cigarette smokers were asked how many cigarettes they smoked per day on the days they smoked during the past 30 days. Nineteen percent of current smokers reported smoking six or more cigarettes on the days they smoked. There were no statistically significant gender or racial/ethnic differences in the number of cigarettes smoked per day.

Daily Use of Cigarettes

Daily use of cigarettes was defined as smoking at least one cigarette every day for 30 days. Among students who had ever smoked cigarettes, 18.2% reported they had smoked cigarettes daily. White students (21.2%) were more likely than black students (9.0%) to have ever smoked cigarettes daily. There was no statistically significant gender difference in daily use of cigarettes.

Age at Initiation of Tobacco Use

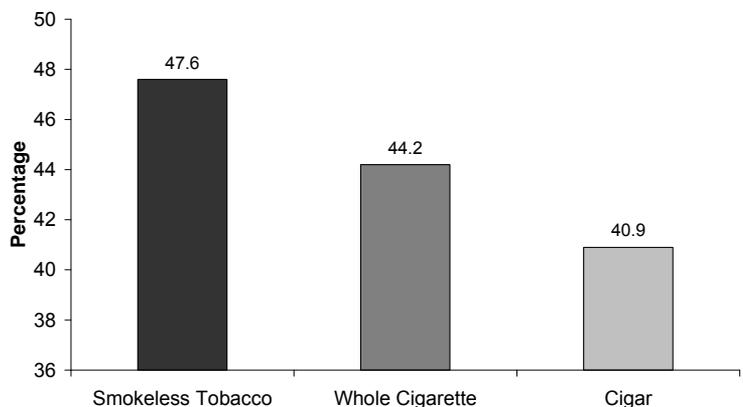
Students were asked how old they were when they a) smoked a whole cigarette for the first time, b) smoked a cigar for the first time, and c) used smokeless tobacco for the first time. Among students who had ever smoked cigarettes, 36.6% reported that they had never smoked a *whole* cigarette. Among those who had smoked a whole cigarette, 44.2% reported having done so before the age of 11 years (Figure 8).

Among students who had ever smoked cigars, 40.9% reported having smoked their first cigar before the age of 11 years (Figure 8).

Among students who had ever used smokeless tobacco products, 47.6% had first used smokeless tobacco before the age of 11 years (Figure 8).

There were no statistically significant gender or racial/ethnic differences in age at initiation of cigarette, cigar or smokeless tobacco use.

Figure 8. Ever Users Who First Used Tobacco Before 11 Years of Age by Tobacco Product -- Tennessee Youth Tobacco Survey, 2004



Prevalence of Tobacco Use

Established Use of Cigarettes

Established use of cigarettes was defined as having smoked 100 or more cigarettes in a lifetime. Among students who had ever smoked, 11.4% reported having smoked ≥ 100 cigarettes in their lifetime (Figure 9). Male students (13.6%) were more likely than female students (9.0%) to have smoked ≥ 100 cigarettes. White students (14.3%) were more likely than black (3.3%) and Hispanic (6.1%) students to have smoked ≥ 100 cigarettes.

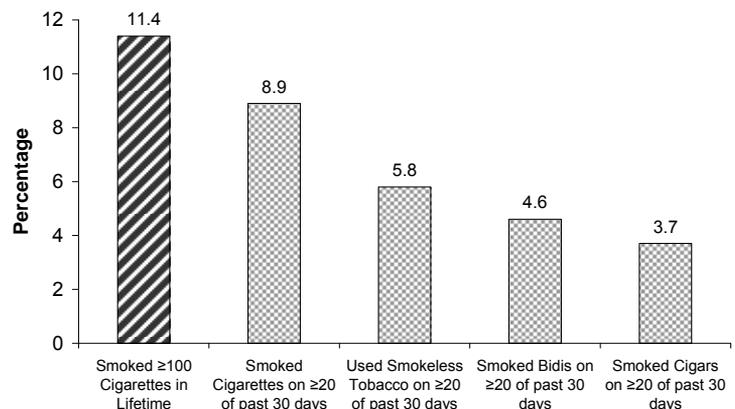
Frequent Use of Tobacco Products

Frequent use of tobacco was defined as having used a tobacco product on ≥ 20 of the 30 days preceding the survey. Among students who had ever used cigarettes, smokeless tobacco, bidis or cigars, the percentage who were frequent users of each were as follows: 8.9% for cigarettes, 5.8% for smokeless tobacco, 4.6% for bidis, and 3.7% for cigars (Figure 9).

Frequent use of smokeless tobacco and of bidis was higher among male students (7.8% and 6.1%, respectively) than among female students (1.0% and 1.9%, respectively). There were no statistically significant gender differences in frequent use of cigarettes or cigars.

Frequent use of cigarettes was higher among white students (10.4%) than among black students (3.4%). There were no statistically significant racial/ethnic differences in frequent use of smokeless tobacco, bidis or cigars.

Figure 9. Ever Users Who Frequently Used Tobacco by Type of Product -- Tennessee Youth Tobacco Survey, 2004



What are bidis and kreteks?

Bidis (pronounced “bee-dees”) are small, thin, hand-rolled cigarettes imported to the United States primarily from Southeast Asia. They consist of tobacco wrapped in leaves and may be secured with a colorful string at one or both ends. Bidis can be flavored (e.g. chocolate, cherry and mango) or unflavored. They have higher concentrations of nicotine, tar and carbon monoxide than conventional cigarettes sold in the United States.

Kreteks (pronounced “cree-techs”) are sometimes referred to as clove cigarettes. Imported from Indonesia, kreteks typically contain a mixture of tobacco, cloves and other additives. As with bidis, kreteks deliver more nicotine, carbon monoxide and tar than conventional cigarettes.

Source: Centers for Disease Control and Prevention. *Bidis and Kreteks Fact Sheet*. Accessed 1 May 2007 at www.cdc.gov/tobacco.

Prevalence of Tobacco Use

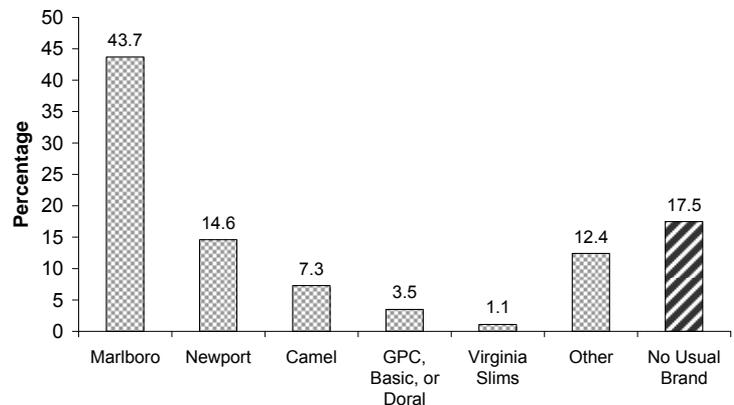
Brand of Cigarettes Usually Smoked

Current cigarette smokers were asked which brand of cigarettes they usually smoked during the past 30 days. The most common brand of cigarettes smoked was Marlboro (43.7%), followed by Newport (14.6%), Camel (7.3%), GPC/Basic/Doral (3.5%), and Virginia Slims (1.1%). Twelve percent of current smokers reported their usual brand as “other” and 17.5% reported that they did not have a usual brand (Figure 10).

Marlboro was the most common brand of cigarettes smoked by both male (43.2%) and female (44.1%) students.

White students (49.7%) were more likely than black students (19.8%) to smoke Marlboro cigarettes. Black students (37.0%) were more likely than white students (8.5%) to smoke Newport cigarettes.

Figure 10. Usual Brand of Cigarette Smoked by Current Smokers -- Tennessee Youth Tobacco Survey, 2004



Tobacco Advertising and Brand Choice among Adolescents

The 1998 Master Settlement Agreement between states and tobacco companies included provisions to prevent tobacco marketing from reaching young people, such as bans on cartoon characters and on outdoor advertising and restrictions on brand-name sponsorship of events with significant youth audiences. However, despite these provisions, pro-tobacco messages continue to reach minors as tobacco companies shift their marketing strategies away from restricted media into a mix of activities that are permissible. For example, following the settlement, tobacco companies increased total advertising spending, magazine advertisements, consumer sales promotions and point-of-purchase displays.

With the exception of the automobile industry, tobacco companies market their products more heavily than any other U.S. manufacturer. The tobacco industry has argued that the main purpose of this advertising is to maintain brand loyalty and to capture a greater market share of current smokers. However, in order to be successful, a product must not only retain consumers, but also gain new consumers over time. This is especially important for the tobacco industry given that each day 3,500 Americans quit smoking and 1,200 die of smoking-related illnesses. The fact that nearly all first use of tobacco occurs before high school graduation suggests where the industry's new consumers come from.

Brand choices are usually made early during the life of a smoker and there is a high concordance between the brand first smoked and the brand eventually selected as the usual brand. It is therefore to the advantage of a tobacco company if the first brand smoked by a child is one of their brands. In 2001, the major cigarette companies spent \$11.2 billion on marketing – approximately \$30.7 million dollars every day – with retail store marketing accounting for the largest increases in spending. Studies show that 75% of teens shop at convenience stores at least once a week and that they are more likely than adults to be influenced by convenience store promotions. Other studies have found that the most popular cigarettes among kids are those that are most heavily advertised – 87% of youth smokers smoke the three most heavily advertised brands of cigarettes (Marlboro, Newport and Camel).

Sources:

Lee RG, Taylor VA and McGetrick R. Toward Reducing Youth Exposure to Tobacco Messages: Examining the Breadth of Brand and Nonbrand Communications. *Journal of Health Communication* 2004; 9(5): 461-479.

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Campaign for Tobacco-Free Kids. *Special Report: Big Tobacco Still Addicting Kids*. Accessed 1 May 2007 at <http://tobaccofreekids.org/>.

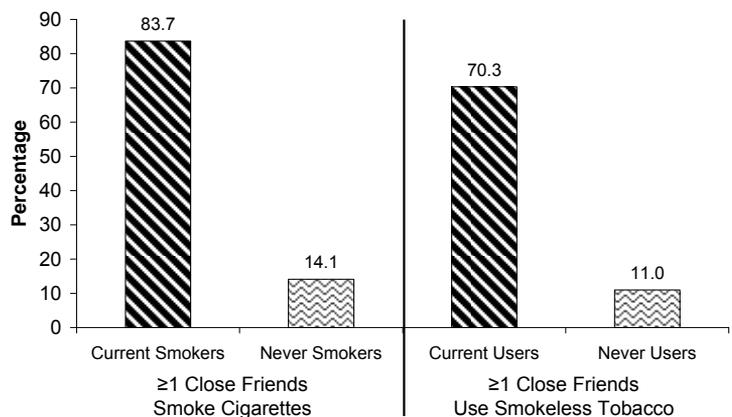
Knowledge and Attitudes

Peer Tobacco Use

When students were asked how many of their four closest friends smoke cigarettes, 26.7% reported that one or more of their closest friends smoke cigarettes. Current cigarette smokers were five times more likely than students who had never smoked cigarettes to report that one or more of their closest friends smoke cigarettes (Figure 11). Regional-level data on peer cigarette use are presented in Table C of the Appendix.

Students were also asked how many of their four closest friends use smokeless tobacco. In response, 16.9% reported that one or more of their closest friends use smokeless tobacco. Current smokeless tobacco users were over five times more likely than students who had never used smokeless tobacco to report that one or more of their closest friends use smokeless tobacco (Figure 11).

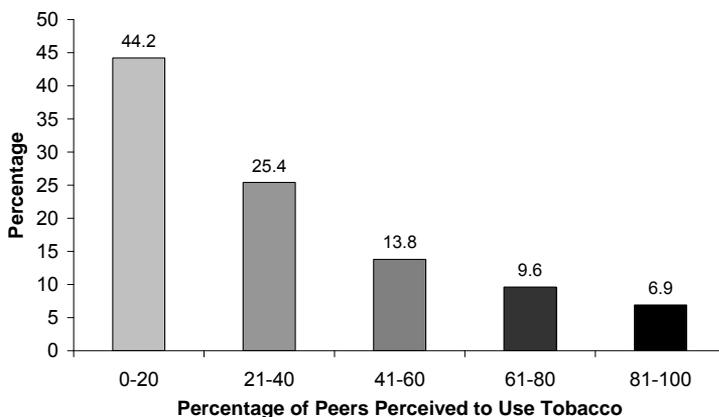
Figure 11. Middle School Students With Peers Who Use Tobacco Products - Tennessee Youth Tobacco Survey, 2004



Perception of Peer Tobacco Use

Perception of peer tobacco use was determined by asking the following question: Out of 100 students in your school, how many do you think use tobacco products? Students overestimated peer tobacco use. Although only 17.1% of students reported that they currently use tobacco, over one-half of students believed that greater than 20% of their peers use tobacco (Figure 12).

Figure 12. Perception of Peer Tobacco Use Among Middle School Students -- Tennessee Youth Tobacco Survey, 2004



Overestimation of peer tobacco use was greater among current tobacco users than among students who had never used tobacco. Seventy-eight percent of current users believed that greater than 20% of their peers use tobacco, compared to 46.5% of never users.

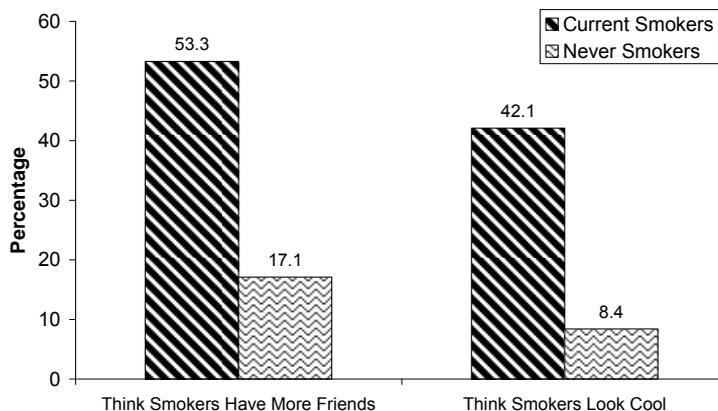
Knowledge and Attitudes

Cigarette Use and Perceived Social Status

Students were asked if they thought young people who smoke cigarettes have more friends. In response, 24.1% reported that they think smokers have more friends. Current cigarette smokers were two times more likely than students who had never smoked cigarettes to think that smokers have more friends (Figure 13). Regional-level data on cigarette use and perceived social status are presented in Table C of the Appendix.

Students were also asked if they thought smoking cigarettes makes young people look cool or fit in. Fifteen percent of students believed that smoking makes young people look cool. Current cigarette smokers were four times more likely than students who had never smoked cigarettes to think that smoking makes young people look cool (Figure 13).

Figure 13. Social Perceptions of Cigarette Use Among Middle School Students – Tennessee Youth Tobacco Survey, 2004



Peer Influence and Adolescent Smoking

Social learning theory hypothesizes that a person is more likely to engage in a given behavior if he/she is exposed to examples of that behavior and if the behavior is reinforced by people he/she admires. According to this theory, peer influence on adolescent smoking can be exerted through: 1) exposure to other students and acquaintances who smoke, 2) perceptions of relatively high levels of smoking among fellow students, and 3) contacts or identification with smaller groups of friends and peers who smoke.

In a study of the social context of smoking behavior among 7th and 8th graders, Ellickson *et al.* found that what the larger peer group is *perceived* to be doing (i.e. perceived school-level smoking prevalence) has a greater influence on individual smoking behavior than what the group is *actually* doing (i.e. actual school-level smoking prevalence). Ellickson *et al.* also found that adolescents are more strongly influenced by the smaller group of peers with whom they choose to spend time than by the larger group of peers at their school. The results of the study support efforts to prevent smoking by reducing perceptions of peer smoking and helping students resist peer influences to smoke.

Source: Ellickson PL, *et al.* Social Context and Adolescent Health Behavior: Does School-Level Smoking Prevalence Affect Students' Subsequent Smoking Behavior? *Journal of Health and Social Behavior* 2003; 44(4): 525-535.

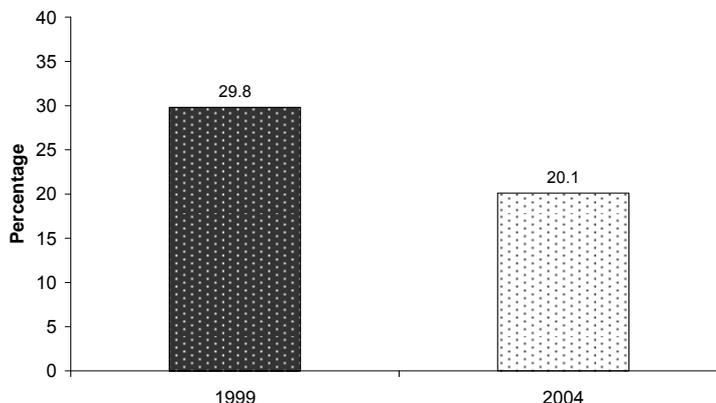
Knowledge and Attitudes

Smoking Intentions and Susceptibility

Three questions were used to assess the smoking intentions of students: Do you think you will try a cigarette soon? Do you think you will smoke a cigarette anytime during the next year? If one of your best friends offered you a cigarette, would you smoke it? Among students who had never tried smoking cigarettes, 95.9% reported that they would *not* try a cigarette soon, 87.1% reported that they would *definitely not* smoke a cigarette in the next year and 86.4% reported that they would *definitely not* smoke if a best friend offered them a cigarette. There were no statistically significant gender or racial/ethnic differences in smoking intentions.

Students were classified as *not* being susceptible to initiating cigarette smoking if they reported that they a) would not try a cigarette soon, *and* b) would definitely not smoke a cigarette in the next year, *and* c) would definitely not smoke if a best friend offered them a cigarette. All other students were classified as susceptible. Among students who had never tried smoking cigarettes, 20.1% were classified as susceptible to initiating cigarette smoking. A higher percentage of male students (22.2%) than female students (18.1%) were susceptible. There were no statistically significant racial/ethnic differences in susceptibility to initiating cigarette smoking. The percentage of students who were susceptible decreased between 1999 and 2004 (Figure 14). Regional-level data on smoking susceptibility are presented in Table C of the Appendix.

Figure 14. Middle School Students Susceptible to Initiating Cigarette Smoking -- Tennessee Youth Tobacco Survey, 1999 and 2004



Perception of Health Risks and Adolescent Smoking

The primary focus of many smoking prevention programs has been educating adolescents about the long-term health consequences of smoking. Yet even though young people are now generally well informed about the health risks of smoking, many still make the decision to take up this practice. Several explanations have been proposed for this seeming contradiction:

- While adolescents may acknowledge smoking risks *in general*, they may be less likely to admit that they are *personally* at risk. This phenomenon is sometimes referred to as optimistic bias.
- Adolescents may not fully appreciate the addictive nature of smoking and may believe they will be able to quit anytime they wish before suffering any negative health consequences.
- Perceived benefits of smoking (looking cool, being more popular, looking more grownup, or feeling relaxed) may outweigh perceived health risks.

Sources:

Arnett JJ. Optimistic Bias in Adolescent and Adult Smokers and Nonsmokers. *Addictive Behaviors* 2000; 25(4): 625-632.

Romer D and Jamieson P. Do Adolescents Appreciate the Risks of Smoking? Evidence from a National Survey. *Journal of Adolescent Health* 2001; 29(1):12-21.

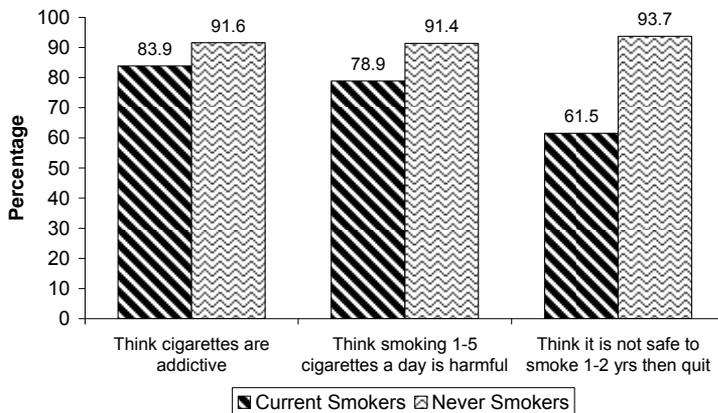
Halpern-Felsher BL, et al. Perceived Risks and Benefits of Smoking: Differences among Adolescents with Different Smoking Experiences and Intentions. *Preventive Medicine* 2004; 39(3):559-567.

Knowledge and Attitudes

Health Consequences of Tobacco Use

Students were asked the following questions about the addictiveness and harmfulness of tobacco: Do you think people can get addicted to using tobacco just like they can get addicted to using cocaine or heroin? Do you think young people risk harming themselves if they smoke from 1-5 cigarettes per day? Do you think it is safe to smoke for only a year or two, as long as you quit after that? Eighty-nine percent of students said that using tobacco is addictive, 88.6% said that smoking 1-5 cigarettes a day is harmful and 87.7% said that it is not safe to smoke 1-2 years and then quit.

Figure 15. Perception of Health Consequences of Smoking Among Middle School Students -- Tennessee Youth Tobacco Survey, 2004



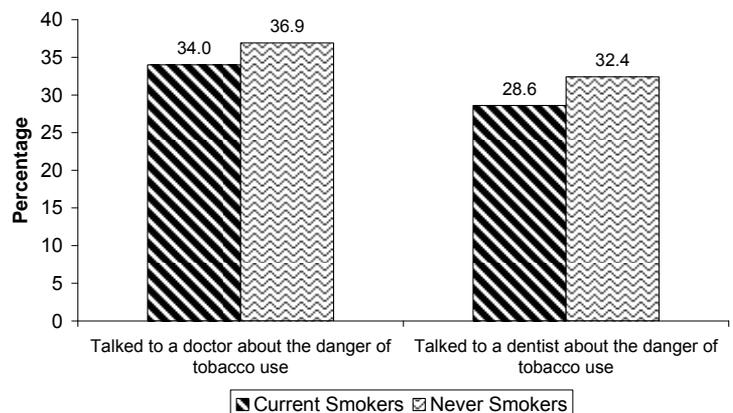
Students who had never smoked cigarettes were more likely than students who currently smoked cigarettes to think that tobacco is addictive, that smoking 1-5 cigarettes a day is harmful, and that it is not safe to smoke 1-2 years and then quit (Figure 15).

Doctor or Dentist Discussed Dangers of Tobacco Use

Students were asked if a doctor or dentist had talked to them about the dangers of tobacco use. In response, 38.3% of students reported that a doctor or someone in a doctor's office had talked to them about the dangers of tobacco, and 32.5% reported that a dentist or someone in a dentist's office had talked to them about the dangers of tobacco.

Although a slightly higher percentage of students who had never smoked cigarettes reported having had a doctor or dentist talk to them about the dangers of tobacco compared to current smokers, the differences between never and current smokers were not statistically significant (Figure 16).

Figure 16. Discussion of Tobacco Dangers by a Doctor or Dentist -- Tennessee Youth Tobacco Survey, 2004



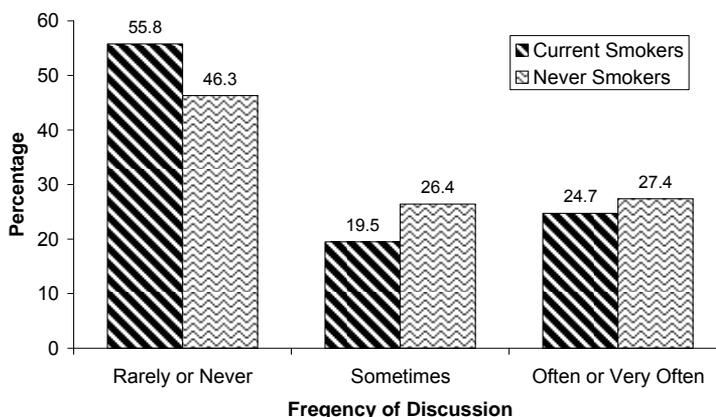
Knowledge and Attitudes

Parent or Guardian Discussed Dangers of Tobacco Use

When asked how often their parents or guardians had discussed the dangers of tobacco use with them during the past 12 months, 25.7% of students reported that such discussions had occurred often or very often, 25.2% reported that they had occurred sometimes, and 49.1% reported that their parents or guardians had rarely or never discussed the dangers of tobacco with them.

Current cigarette smokers were more likely than students who had never smoked to report that their parents or guardians had rarely or never discussed the dangers of tobacco with them during the past 12 months (Figure 17).

Figure 17. Discussion of Tobacco Dangers by a Parent or Guardian -- Tennessee Youth Tobacco Survey, 2004



Parental Influence and Adolescent Smoking

Parents often perceive that there is nothing they can do to prevent a child from smoking. Researchers may have contributed to this perception by emphasizing the effects of peer smoking and peer socialization on smoking initiation. In addition, many anti-tobacco efforts have focused on school-based programs and on larger community issues such as cigarette advertising and taxation. However, recent research has shown that parents *do* play an important role in preventing adolescent smoking, both through general parenting practices and specific antismoking socialization practices:

General Parenting Practices:

- Family closeness and connectedness
- Openness to communication
- Shared activities
- Parental monitoring
- Strictness
- Supportiveness
- Expectations of success

Parental Antismoking Socialization Practices:

- Making antismoking agreements with children
- Establishing rules against smoking in the home
- Enforcing punishments for smoking
- Warning against negative consequences of smoking
- Discussing smoking-related topics
- Choosing to sit in nonsmoking sections of restaurants
- Asking others not to smoke in their presence

Whether or not a parent smokes also influences adolescent smoking behavior. However, the effectiveness of antismoking messages remains strong even when parents smoke, and research suggests that parental expectations about smoking may be a more important predictor of what their children do than actual parental smoking behavior.

Sources:

Sargent JD and Dalton M. Does Parental Disapproval of Smoking Prevent Adolescents from Becoming Established Smokers? *Pediatrics* 2001; 108(6): 1256-1262.

Anderson MR, et al. Antismoking Parenting Practices are Associated with Reduced Rates of Adolescent Smoking. *Archives of Pediatrics and Adolescent Medicine* 2004; 158(4): 348-352.

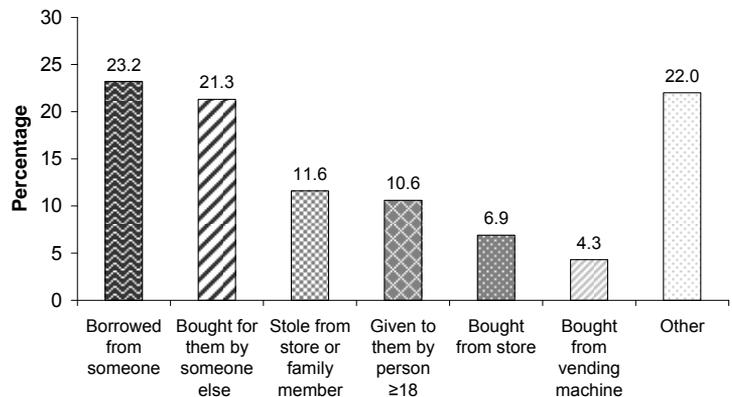
Harakeh Z, et al. Parental Rules and Communication: their Association with Adolescent Smoking. *Addiction* 2005; 100(6): 862-870.

Access and Enforcement

Usual Source of Cigarettes

Current cigarette smokers were asked how they *usually* got their own cigarettes during the past 30 days. Almost one-half of current smokers usually obtained their cigarettes by borrowing them from someone else (23.2%) or by giving someone else money to buy cigarettes for them (21.3%). In addition, 11.6% stole cigarettes from a store or family member, 10.6% were given cigarettes by someone 18 years or older, 6.9% purchased them from a store and 4.3% purchased them from a vending machine (Figure 18). Regional-level data on usual source of cigarettes are presented in Table D of the Appendix.

Figure 18. How Current Cigarette Smokers Usually Obtained Cigarettes -- Tennessee Youth Tobacco Survey, 2004

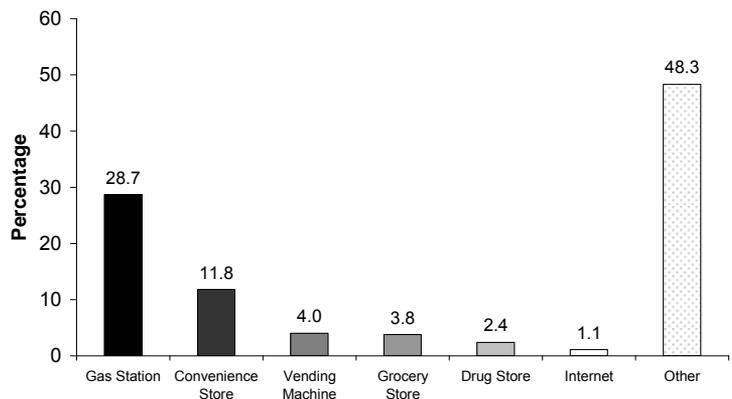


Location of Last Cigarette Pack Purchase

Among current cigarette smokers who purchased cigarettes during the past 30 days, 28.7% reported that the last pack of cigarettes they bought was purchased at a gas station. The next most common site of cigarette purchase was a convenience store (11.8%), followed by vending machine (4.0%), grocery store (3.8%), drug store (2.4%) and the internet (1.1%) (Figure 19).

[note: students who *usually* obtained cigarettes by methods other than purchase may still have attempted to buy cigarettes for themselves during the past 30 days]

Figure 19. Where Current Cigarette Smokers Bought Their Last Pack of Cigarettes -- Tennessee Youth Tobacco Survey, 2004



Knowledge of Places that Sell Single or Loose Cigarettes

When asked if they knew of places that sell single or loose cigarettes in the area where they live, 27.1% of students reported that they knew of such places. Current cigarette smokers (39.2%) were more likely than never smokers (22.2%) to know of places that sell single or loose cigarettes.

Access and Enforcement

Usual Source of Smokeless Tobacco

Current smokeless tobacco users were asked how they usually got their own smokeless tobacco during the past 30 days. The majority of current users usually obtained their smokeless tobacco by giving someone else money to buy it for them (24.9%) or by borrowing it from someone else (24.6%). In addition, 14.2% purchased it from a store, 10.5% were given smokeless tobacco by someone 18 years or older, and 7.8% stole it from a store or family member (Figure 20).

Usual Source of Cigars

Current cigar smokers were asked how they usually got their own cigars during the past 30 days. The majority of current smokers usually obtained their cigars by giving someone else money to buy cigars for them (26.4%) or by borrowing them from someone else (21.1%). In addition, 13.8% were given cigars by someone 18 years or older, 10.6% stole them from a store or family member, and 10.1% purchased them from a store (Figure 21).

Figure 20. How Current Smokeless Tobacco Users Usually Obtained Smokeless Tobacco -- Tennessee Youth Tobacco Survey, 2004

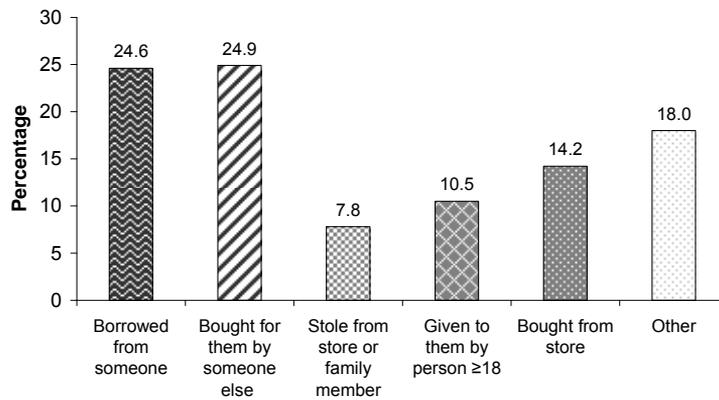
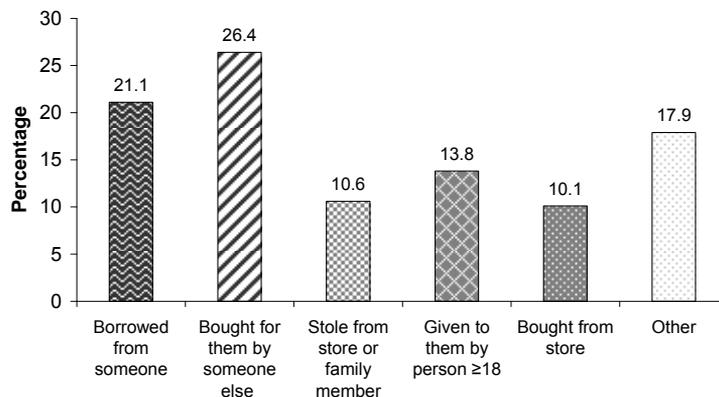


Figure 21. How Current Cigar Smokers Usually Obtained Cigars -- Tennessee Youth Tobacco Survey, 2004



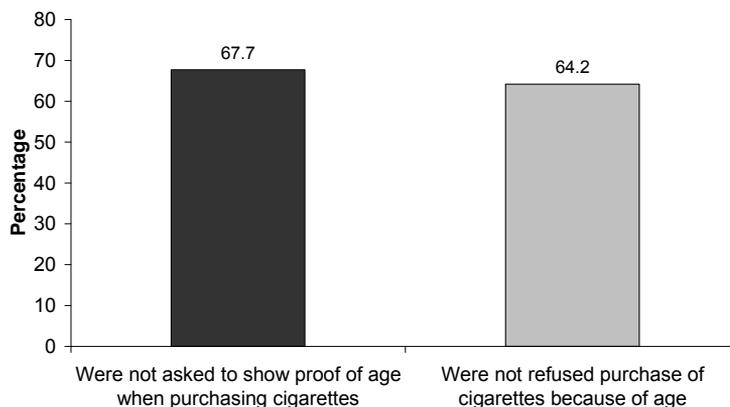
Access and Enforcement

Age and Access to Cigarettes

Among current cigarette smokers who purchased or attempted to purchase cigarettes in a store during the past 30 days, 67.7% were not asked to show proof of age and 64.2% were not refused purchase because of their age (Figure 22). Regional-level data on request for proof of age are presented in Table D of the Appendix.

The percentage of students not asked for proof of age when purchasing cigarettes increased with increasing grade level (6th grade 61.1%, 7th grade 63.8% and 8th grade 73.7%). There were no statistically significant gender or racial/ethnic differences in the percentage of students not asked for proof of age or refused purchase due to age. The percentage of students not asked for proof of age decreased from 84.5% in 1999 to 67.7% in 2004.

Figure 22. Students Not Asked for Proof of Age or Not Refused Purchase of Cigarettes Because of Age -- Tennessee Youth Tobacco Survey, 2004



Youth Tobacco Access Laws

Youth tobacco access laws are designed to limit the commercial availability of tobacco via mechanisms such as minimum purchase age, photo ID requirements, and vending machine bans. But have these laws been effective at limiting access and decreasing the prevalence of youth smoking? Many studies have been conducted in an attempt to answer this question. However, methodologies have differed and results have been mixed. Despite these mixed results, studies do suggest that tobacco sources among youth are affected by age and by stage of tobacco use, and that access laws may have more effect on younger experimenters than on older, established users.

Social sources of tobacco (family, friends, and strangers) are important at all ages. However, older teens are more likely to purchase tobacco. As teen smokers become more experienced they become more comfortable buying tobacco, may be more determined to do so because of their nicotine addiction, and may employ more sophisticated purchasing techniques (lying about their age, presenting valid underage ID, engaging sales clerks in conversation). Access laws may be less effective among this group, especially given that compliance among retailers is less than 100%. Even a small handful of noncompliant merchants can undermine the law since teens will quickly learn which shops are willing to sell tobacco to minors.

Although access laws may have a lesser impact on teens already addicted to nicotine, they may prevent younger teens from initiating smoking by limiting access, raising expectations that tobacco is difficult to obtain and strengthening social norms that discourage smoking. However, by themselves such laws are inadequate since they do not address social sources of tobacco. Commercial access laws are only part of the solution to preventing tobacco access and use among young people.

Sources:

Stead LF, Lancaster T. Interventions for Preventing Tobacco Sales to Minors. *Cochrane Database of Systematic Reviews* 2005; 1:CD001497.

Pokorny SB, Jason LA. The Relation of Retail Tobacco Availability to Initiation and Continued Smoking. *Journal of Clinical Child and Adolescent Psychology* 2003; 32(2):193-204.

Media and Advertising

Actors Using Tobacco on Television or in Movies

Students were considered exposed to actors using tobacco if they reported that they saw these images “most of the time” or “some of the time” when watching television or movies. Eighty-three percent of students reported that they had been exposed to actors using tobacco on television or in the movies.

There were no statistically significant gender or racial/ethnic differences in the percentage of students exposed to these images. Current tobacco users were more likely than never users to have been exposed to actors using tobacco on television or in the movies (Figure 23). The percentage of students exposed to actors using tobacco decreased from 88.5% in 1999 to 82.9% in 2004 (Figure 24). Regional-level data on exposure to actors using tobacco are presented in Table E of the Appendix.

Figure 23. Exposure to Tobacco and Anti-Tobacco Messages in the Media Among Middle School Students -- Tennessee Youth Tobacco Survey, 2004

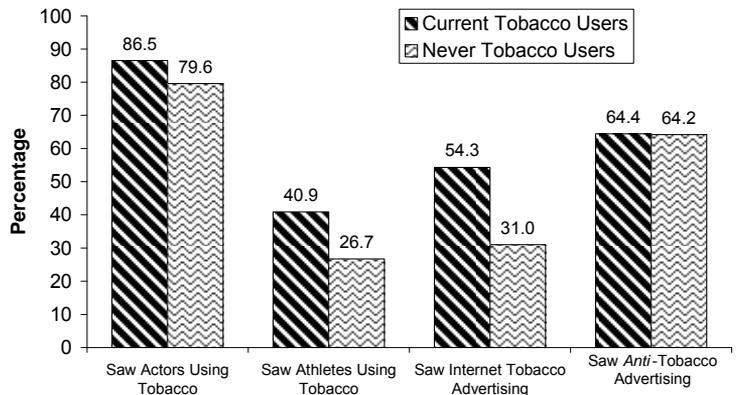
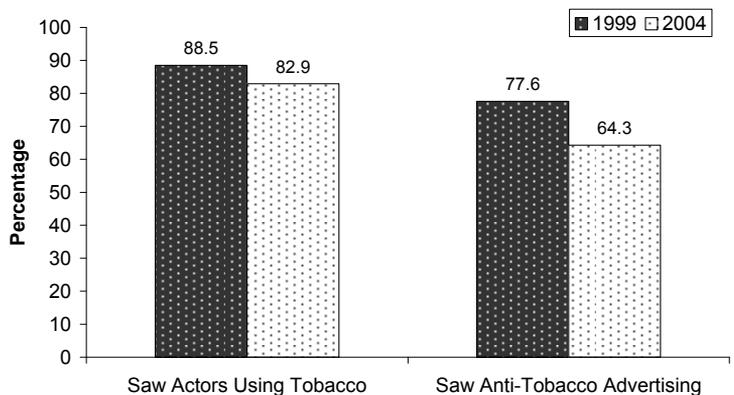


Figure 24. Exposure to Actors Using Tobacco and to Anti-Tobacco Advertisements -- Tennessee Youth Tobacco Survey, 1999 and 2004



Athletes Using Tobacco on Television

Students were considered exposed to athletes using tobacco if they reported that they saw these images “most of the time” or “some of the time” when watching television. Thirty percent of students reported that they had been exposed to athletes using tobacco on television. Male students (32.1%) were more likely than female students (27.5%) to have been exposed to these images. There were no statistically significant racial/ethnic differences in exposure. Current tobacco users were more likely than never users to have been exposed to athletes using tobacco on television (Figure 23).

Tobacco Advertisements on the Internet

Students were considered exposed to tobacco ads online if they reported that they saw these images “most of the time” or “some of the time” when using the internet. Thirty-eight percent of students reported that they had been exposed to tobacco advertisements on the internet. There were no statistically significant gender or racial/ethnic differences in the percentage of students exposed to these images online. Current tobacco users were more likely than never users to have been exposed to tobacco advertisements while using the internet (Figure 23).

Media and Advertising

Exposure to Antismoking Commercials

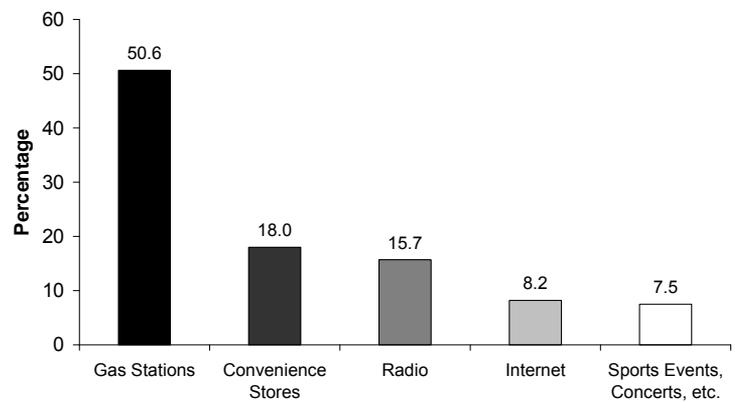
When asked how often they had seen or heard commercials on the television, internet or radio about the dangers of cigarette smoking, 64.3% of students said they had seen or heard such commercials at least once in the past 30 days. Female students (67.9%) were more likely than male students (60.9%) to have seen or heard such commercials. There were no statistically significant racial/ethnic differences *or* differences between current and never tobacco users in the percentage of students who had been exposed to antismoking advertising (Figure 23). The percentage of students exposed to anti-tobacco advertising decreased from 77.6% in 1999 to 64.3% in 2004 (Figure 24). Regional-level data on exposure to antismoking commercials are presented in Table E of the Appendix.

Most Common Place Tobacco Advertisements Seen or Heard

Students were asked where they saw or heard the most advertisements for tobacco products. The most common place identified was gas stations (50.6%), followed by convenience stores (18.0%), radio (15.7%), internet (8.2%) and sports events, fairs, concerts and/or community events (6.0%).

Gas stations were the most common site identified by all gender and racial/ethnic groups, as well as among both current and never tobacco users (Figure 25). Regional-level data on the most common place to see or hear tobacco ads are presented in Table E of the Appendix.

Figure 25. Place Most Tobacco Ads Seen or Heard by Middle School Students -- Tennessee Youth Tobacco Survey, 2004



Smoking in the Movies

Numerous studies provide evidence that smoking in the movies leads adolescents to hold more pro-tobacco attitudes and beliefs, which is consistent with the observed dose-response relationship between exposure to smoking in the movies and initiation of adolescent smoking. Movies teach children the same stereotypes (glamour, coolness, attractiveness, sexiness, rebelliousness) and adult motivations (stress relief, celebration, romance) for smoking that pervade tobacco company advertisements and help establish the perception that smoking is normal, prevalent and desirable in society. The images of smoking in movies both normalize the behavior and downplay negative health effects, encouraging more tolerant attitudes about smoking.

Despite prohibitions against direct and indirect cigarette advertising and paid product placements in movies that were implemented in the 1990s, smoking in movies has increased. As of 2005, greater than 80% of PG-13 and R-rated movies contained smoking. As the movie industry shifts a greater share of their movies from the R to the PG-13 category, the smoking depictions contained in these movies become accessible to more adolescent viewers. This shift reduces the effectiveness of parental R-rated movie restriction on adolescent smoking.

Source: Charlesworth A, Glantz SA. Smoking in the Movies Increases Adolescent Smoking: A Review. *Pediatrics* 2005; 116(6):1516-1528.

Media and Advertising

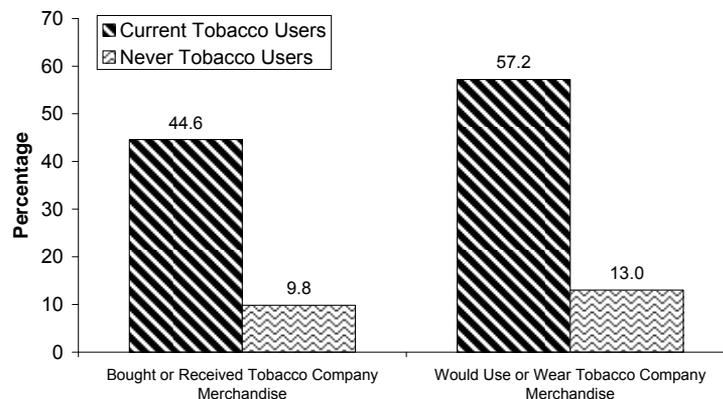
Misdirection by Tobacco Companies

Students were asked if they thought tobacco companies have tried to mislead young people to buy their products more than other companies. Seventy-seven percent of students believed that tobacco companies have tried to mislead young people. Female students (78.9%) were more likely than male students (74.8%) to believe this. White (79.0%) and Hispanic students (80.1%) were more likely than black students (70.2%) to believe this. Although over two-thirds of both current and never tobacco users believed that tobacco companies have tried to mislead young people, current users (68.6%) were still *less* likely to believe this than never users (79.0%).

Receptivity to Tobacco Company Merchandise

Students were asked if they had purchased or received anything with a tobacco company name or picture on it during the past 12 months. In response, 18.0% of students reported that they bought or received tobacco company merchandise. Male students (20.8%) were more likely than female students (15.1%) to have bought or received such items. White (19.4%) and Hispanic students (22.4%) were more likely than black students (13.2%) to have bought or received such items. Current tobacco users were over three times more likely than never users to have purchased or received tobacco company merchandise (Figure 26).

Figure 26. Receptivity of Middle School Students to Tobacco Company Merchandise -- Tennessee Youth Tobacco Survey, 2004



Students were also asked if they would ever use or wear something with a tobacco company name or picture on it, such as a lighter, t-shirt, or hat. Twenty-five percent of students said they would definitely or probably use or wear tobacco company merchandise. Male students (30.9%) were more likely than female students (19.4%) to say that they would use or wear such items. There were no statistically significant ethnic/racial differences in the percentage of students who said they would use or wear such items. Current tobacco users were over three times more likely than never users to say they would use or wear tobacco company merchandise (Figure 26).

Cessation

Desire to Quit and Cessation Attempts

Current cigarette smokers were asked if they wanted to stop smoking cigarettes and if they had tried to quit during the past 12 months. Forty-nine percent said they wanted to stop smoking, and 55.0% said they had tried to quit. In other words, over one-half of current cigarette smokers had been *unsuccessful* in their past attempts to quit (Figure 27). Regional-level data on desire to quit are presented in Table F of the Appendix.

Among smokers who had tried unsuccessfully to quit, 58.6% had tried three or more times to quit and 45.2% were unable to stay off cigarettes for more than a week during their last quit attempt (Figure 28).

Even though over one-half of current cigarette smokers had been unsuccessful in their attempts to quit smoking, 71.0% still believed that they would be able to quit smoking if they wanted to (Figure 28).

Figure 27. Cessation Attempts and Desire to Quit Among Current Cigarette Smokers -- Tennessee Youth Tobacco Survey, 2004

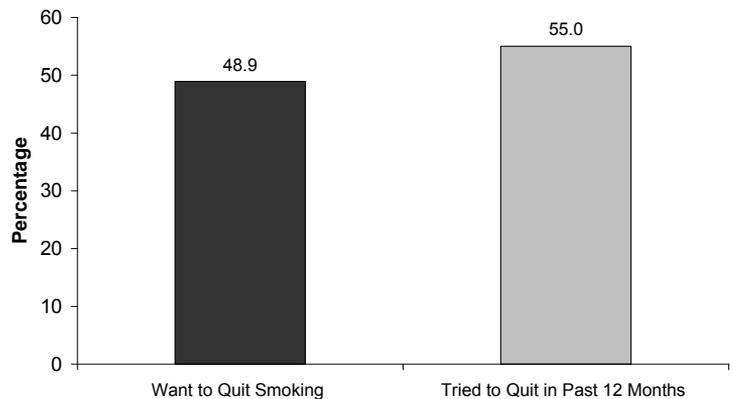
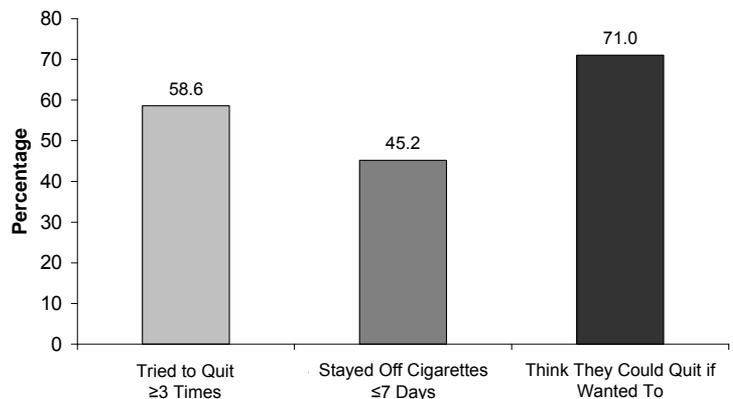


Figure 28. Cessation Among Current Cigarette Smokers Who Have Attempted to Quit -- Tennessee Youth Tobacco Survey, 2004



Tobacco Cessation Programs

Students were asked about their use and knowledge of tobacco cessation programs. Among students who had ever used tobacco, 18.9% had participated in a program to help them quit. Twenty-one percent said their school or community provides a cessation program specifically for youth, 19.1% said such a program was not available and 60.1% said they were not sure if such a program was available. Between 1999 and 2004 the percentage of students participating in a cessation program increased slightly from 15.7% to 18.9%, however this change was not statistically significant. Regional-level data on use and awareness of tobacco cessation programs are presented in Table F of the Appendix.

Tennessee Tobacco Quit Line

1-800-784-8669

The Tennessee Tobacco Quit Line provides free, confidential, one-on-one assistance to persons of all ages who wish to quit using tobacco. It is available to all Tennessee residents in English and in Spanish and to the hearing impaired.

Environmental Tobacco Exposure

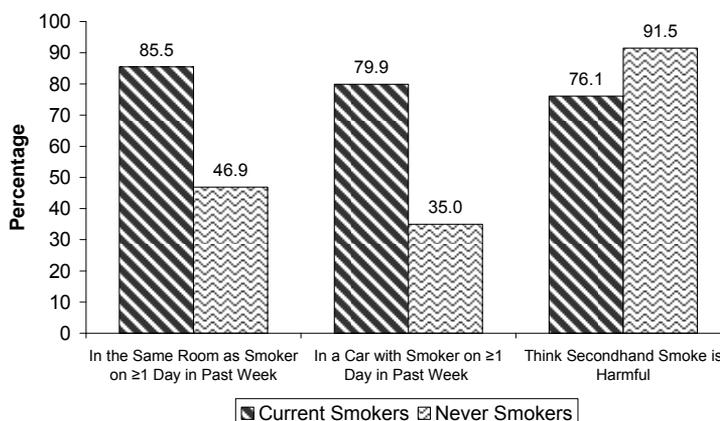
In the Same Room or in a Car with Someone Who Was Smoking

When asked how often they were in the same room as or in a car with someone who was smoking during the past week, 54.7% of students said they were in the same room as a smoker on 1 or more days and 44.7% said they were in a car with a smoker on 1 or more days. Approximately two-thirds of students were exposed to secondhand smoke at home and/or in a car during the past week. Current cigarette smokers were more likely than never smokers to have been in the same room as or in a car with a smoker (Figure 29). Regional-level data on secondhand smoke exposure are presented in Table G of the Appendix.

Think Secondhand Smoke is Harmful

Students were asked if they thought that smoke from other people's cigarettes was harmful to them. Eighty-nine percent of students said that secondhand smoke was definitely or probably harmful to them. Current cigarette smokers were *less* likely than never smokers to think that secondhand smoke was definitely or probably harmful to them (Figure 29).

Figure 29. Exposure to Secondhand Smoke Among Never and Current Cigarette Smokers -- Tennessee Youth Tobacco Survey, 2004



Secondhand Smoke

Secondhand smoke is a complex mixture of gases and particles that includes both smoke from burning cigarettes, cigars and pipes, as well as that exhaled by smokers. It contains at least 250 chemicals known to be toxic, including more than 50 that cause cancer.

Secondhand smoke causes respiratory symptoms in children and slows their lung growth. In addition, it causes sudden infant death syndrome, acute respiratory infections, ear problems and more frequent and severe asthma attacks in children. Approximately 25% of U.S. children aged 3-11 live with at least one smoker and almost 60% (about 22 million children) are exposed to secondhand smoke.

In addition to its effects in children, second hand smoke also causes heart disease and lung cancer in *nonsmoking* adults. It is estimated that secondhand smoke exposure is responsible for approximately 3,400 lung cancer deaths and 22,700-69,600 heart disease deaths annually among adult nonsmokers in the United States.

Source: Centers for Disease Control and Prevention. *Secondhand Smoke Fact Sheet*. Accessed 1 May 2007 at www.cdc.gov/tobacco.

Environmental Tobacco Exposure

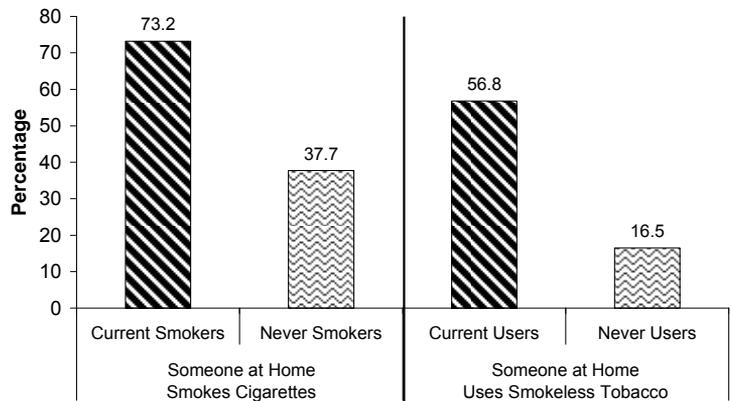
Exposure to Tobacco Use at Home

When asked if they live with anyone who smokes cigarettes or uses smokeless tobacco, 45.5% of students said they live with someone who smokes cigarettes and 20.5% said they live with someone who uses smokeless tobacco.

Current cigarette smokers were twice as likely as never smokers to live with someone who is a cigarette smoker (Figure 30).

Current smokeless tobacco users were three-and-a-half times as likely as never users to live with someone who is a smokeless tobacco user (Figure 30).

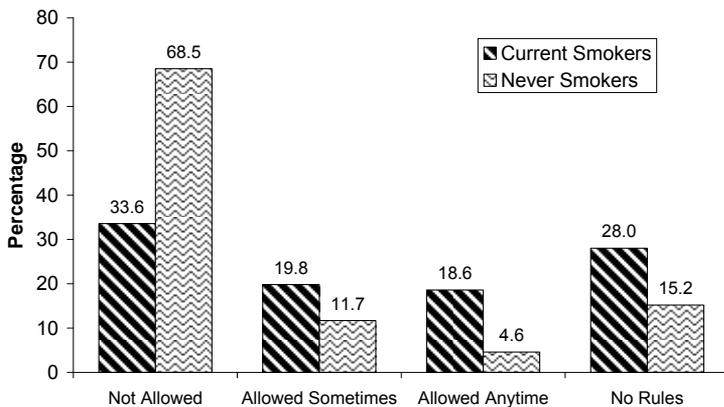
Figure 30. Middle School Students Exposed to Tobacco Use at Home -- Tennessee Youth Tobacco Survey, 2004



Rules about Smoking at Home

Students were asked to describe the rules about smoking inside their home. Approximately two-thirds (60.6%) of students said that smoking was not allowed anywhere inside their home. In addition, 13.7% said that smoking was allowed sometimes or in some places, 7.6% that smoking was allowed anytime and 18.0% that there were no rules about smoking inside their home.

Figure 31. Rules about Smoking at Home Among Current and Never Cigarette Smokers -- Tennessee Youth Tobacco Survey, 2004



Students who never smoked were more likely than current smokers to say that smoking was not allowed inside their home (Figure 31).

Current cigarette smokers were more likely than never smokers to say that smoking was allowed sometimes or anytime inside their home (Figure 31).

Tobacco Use and Education at School

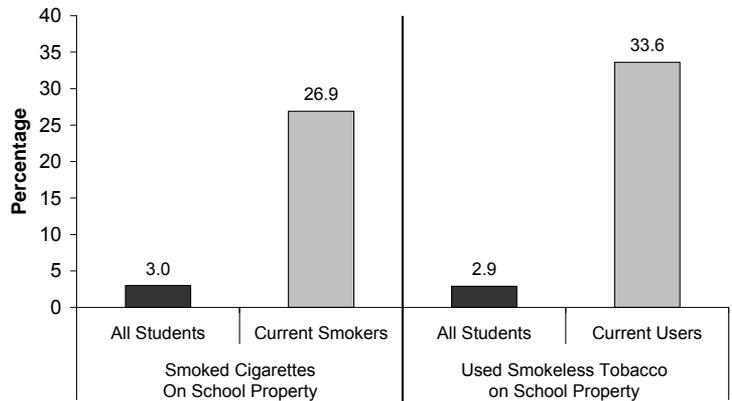
Tobacco Use on School Property

Among all students, 3.0% said that they had smoked cigarettes on school property during the past 30 days and 2.9% said that they had used smokeless tobacco (Figure 32).

Among current cigarette smokers, 26.9% said that they had smoked cigarettes on school property during the past 30 days. Among current smokeless tobacco users, 33.6% said that they had used smokeless tobacco on school property during the past 30 days (Figure 32).

Students were asked if any teachers or other school employees smoked on school property. Twenty-seven percent of students said yes, 29.1% said no and 43.5% said they were not sure if teachers or other school employees smoked on school property.

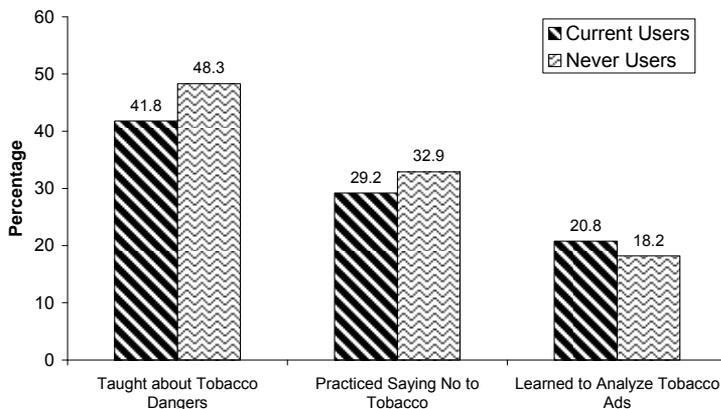
Figure 32. Use of Tobacco on School Property Among Middle School Students -- Tennessee Youth Tobacco Survey, 2004



Tobacco Education at School

Three questions were used to assess tobacco education at school: Were you taught about the dangers of tobacco use in any of your classes during this school year? Did you practice ways to say “no” to tobacco in any of your classes during this school year? Have you ever received information on how to analyze advertisements for tobacco products in any of your classes? Forty-six percent of students said they had been taught about the dangers of tobacco, 32.1% said they had practiced ways to say “no” to tobacco, and 18.7% said they had received information about analyzing tobacco advertisements.

Figure 33. Tobacco Awareness Education at School Among Current and Never Tobacco Users -- Tennessee Youth Tobacco Survey, 2004



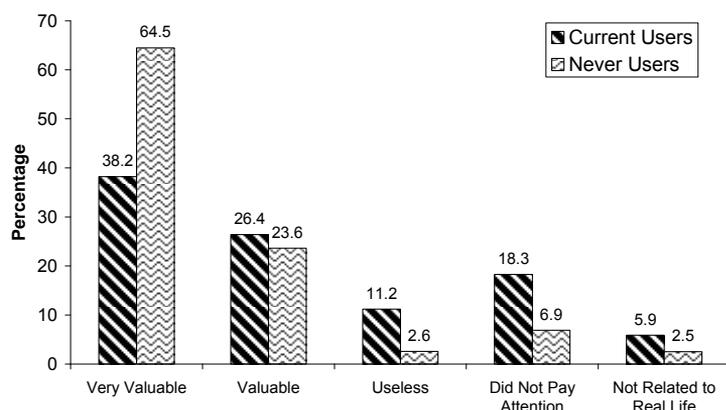
Although a higher percentage of never tobacco users than current users had been taught about the dangers of tobacco and had practiced saying “no” to tobacco, there were no statistically significant differences in the responses to these questions between never and current tobacco users (Figure 33). Among current users, the percentage of students who had practiced saying “no” decreased between 1999 and 2004, from 36.9% to 29.2%. Regional-level data on tobacco education at school are presented in Table H of the Appendix.

Tobacco Use and Education at School

Perceived Value of Tobacco Information Received at School

Students were asked how they felt about the tobacco information received in their classes. The majority of students (80.4%) said the information received was very valuable or valuable; however, 11.2% said they did not pay attention to the information received, 5.1% said it was useless and 3.3% said it was not related to real life.

Figure 34. Perceived Value of Tobacco Awareness Information Received at School -- Tennessee Youth Tobacco Survey, 2004



Students who had never used tobacco were more likely than current tobacco users to say that the tobacco information they received in their classes was very valuable (Figure 34).

Current tobacco users were more likely than never tobacco users to say that the information they received was useless (Figure 34).

Stages in the Development of Adolescent Smoking

Stage	Definition
1. Non-smoking, pre-contemplation	Consists of adolescents who have never smoked, have never thought about smoking and have no desire to start smoking.
2. Non-smoking, contemplation	Occurs when adolescents begin to think about smoking. They are forming and modifying their pre-smoking beliefs and attitudes about cigarettes. This stage includes the development of perceptions of what smoking involves, its potential functions, and an increasing awareness of social pressures to smoke.
3. Initiator	When adolescents try their first cigarettes. This stage is characterized by stronger peer influences than family influences. Improving one's self image is associated with initiation, and may be motivated by poor school performance, as well as by low approval from desired peer groups.
4. Experimenter	Characterized by a gradual increase in the frequency of smoking and an increase in the variety of situations in which cigarettes are used. Experimenters are learning how to handle a cigarette and how to inhale correctly, and are still trying to decide whether or not smoking is for them.
5. Regular smoker	In this stage adolescents have progressed beyond sporadic smoking to smoking on a regular, though still infrequent basis. They may smoke every weekend or most week days on the way to or from school, but are not smoking every day.
6. Established/daily smoker	Established smokers smoke daily or almost every day. Adolescents in this stage may experience dependence/addiction and find it difficult to quit smoking. They may develop cravings, heavy daily use of cigarettes and withdrawal symptoms. Both psychological and biological factors influence the maintenance of smoking behaviors.

Source: Mayhew KP, Flay BR and Mott JA. Stages in the Development of Adolescent Smoking. *Drug and Alcohol Dependence* 2000; 59(Supplement 1): 61-81.

Summary

The results of the 2004 Tennessee Youth Tobacco Survey show that, despite declines since 1999, tobacco use is still prevalent among public middle school students in the state – by 8th grade approximately one-half of students have tried one or more forms of tobacco – with prevalence higher among boys than among girls. There are a number of factors that influence the initiation and continued use of tobacco by young people and that provide opportunities for prevention and intervention. These include peers, parents/family, access to tobacco, pro- and anti-tobacco advertisements, and availability of cessation programs. Findings from the 2004 Tennessee Youth Tobacco Survey that support the role of these influences are as follows:

- Compared to students who have never smoked, current cigarette smokers were more likely to have close friends that smoke, to overestimate peer use of tobacco and to believe that smokers look cool and have more friends. Although peers are an important social influence, parents and family also have a role to play – students who had never smoked were more likely than current smokers to report that their parents or guardians had discussed the dangers of tobacco with them and they were less likely to live with someone who smokes cigarettes.
- Only a small percentage of students usually bought cigarettes for themselves – the majority either borrowed them or gave someone else money to purchase them. When students did buy cigarettes for themselves, many did so at gas stations and convenience stores and were often not asked for proof of age when making their purchases. Gas stations and convenience stores were also the most common places students said they saw or heard advertisements for tobacco.
- The three most popular cigarette brands smoked by students were also the three most heavily advertised brands. However, students were not only exposed to direct, brand-specific tobacco advertisements, but also to more indirect “advertisements,” such as smoking on television and in the movies. Current tobacco users were more likely than never users to say that they saw actors using tobacco on television and in the movies, and a higher percentage of students saw actors using tobacco than saw antismoking commercials.
- Approximately one-half of current smokers want to quit or have tried to quit in the past 12 months. However, despite one or more failed quit attempts most still think they can quit smoking if they want to. This belief in their personal ability to quit may help explain why students choose to smoke despite a high level of awareness about the addictiveness and adverse health consequences of smoking. In addition, the majority of students who had ever smoked said that there were no youth-oriented smoking cessation programs in their area, or that they were unaware of such programs.

As the above information highlights, there are many factors that influence the initiation and continued use of tobacco by young people. In order to realize continued declines in the prevalence of youth tobacco use, these multiple influences will need to be addressed – there is no single, magic bullet for preventing youth tobacco use. Given that nearly all first use of tobacco occurs before high school graduation, a continued focus on youth tobacco prevention is critical for reducing the morbidity and mortality associated with tobacco. This report provides important information for the critical and continued efforts of individuals and organizations interested in tobacco control and in the prevention of tobacco use by the young people of Tennessee.

Appendix*

Table A. Regional-level data on lifetime tobacco use – Tennessee Youth Tobacco Survey, 2004

	Any	Cigarette	Cigar	Smokeless Tobacco	Bidi	Kretek
	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)
Davidson	38.5 (± 6.3)	28.4 (± 6.8)	19.5 (± 5.5)	9.7 (± 2.3)	4.3 (± 1.8)	2.1 (± 1.6)
East	38.8 (± 5.8)	30.4 (± 6.5)	18.8 (± 5.0)	16.1 (± 2.9)	4.3 (± 1.0)	3.6 (± 1.3)
Hamilton	43.6 (± 6.4)	34.5 (± 8.0)	21.3 (± 3.6)	14.0 (± 1.9)	5.6 (± 0.8)	3.0 (± 1.5)
Knox	31.7 (± 5.3)	20.8 (± 6.3)	14.9 (± 3.0)	11.6 (± 0.5)	7.2 (± 2.4)	3.1 (± 1.7)
Madison	41.0 (± 4.8)	32.1 (± 4.8)	18.4 (± 3.7)	12.9 (± 2.7)	6.9 (± 2.6)	3.8 (± 1.5)
Mid Cumberland	29.4 (± 8.5)	19.4 (± 9.5)	13.4 (± 3.4)	10.2 (± 2.6)	5.6 (± 2.2)	3.1 (± 1.3)
Northeast	47.9 (± 7.4)	37.7 (± 10.8)	20.7 (± 4.0)	22.6 (± 3.1)	5.6 (± 1.6)	4.4 (± 1.2)
South Central	40.8 (± 16.6)	30.9 (± 19.5)	17.9 (± 9.3)	17.3 (± 8.2)	5.5 (± 4.6)	4.6 (± 2.5)
Upper Cumberland	40.5 (± 9.5)	31.3 (± 11.4)	20.7 (± 5.1)	19.4 (± 4.0)	5.5 (± 2.2)	4.0 (± 1.8)
West	45.6 (± 9.8)	35.6 (± 9.8)	20.2 (± 6.3)	18.3 (± 5.7)	9.3 (± 6.0)	3.0 (± 2.2)
Urban Regions	39.7 (± 3.0)	30.2 (± 2.8)	20.6 (± 2.4)	12.0 (± 2.0)	5.3 (± 1.2)	2.5 (± 1.0)
Rural Regions	39.4 (± 4.0)	29.6 (± 4.4)	18.7 (± 2.4)	16.7 (± 1.9)	6.5 (± 1.9)	4.3 (± 1.4)
State Total	39.6 (± 2.7)	29.9 (± 2.9)	19.4 (± 1.7)	14.8 (± 1.4)	6.1 (± 1.2)	3.6 (± 0.9)

*Overall participation in Shelby, Southeast and Sullivan was less than 60%. Data from these regions could not be weighted and are therefore not representative of each region but only of the students who participated in the survey. These data are therefore not presented in the tables included in the Appendix. However, students from these regions were included in state-level and urban vs. rural calculations.

Appendix

Table B. Regional-level data on current tobacco use – Tennessee Youth Tobacco Survey, 2004

	Any	Cigarette	Cigar	Smokeless Tobacco	Bidi	Pipe
	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)
Davidson	13.5 (± 3.5)	6.4 (± 2.6)	5.0 (± 2.4)	1.9 (± 1.6)	4.3 (± 1.0)	2.7 (± 1.6)
East	18.1 (± 5.7)	11.4 (± 4.3)	7.4 (± 2.3)	6.4 (± 2.0)	4.3 (± 2.2)	3.3 (± 1.8)
Hamilton	17.8 (± 4.5)	12.0 (± 4.4)	6.4 (± 2.6)	4.5 (± 2.7)	3.8 (± 1.2)	3.1 (± 1.3)
Knox	11.9 (± 3.4)	6.7 (± 3.0)	4.9 (± 2.1)	3.2 (± 1.0)	3.9 (± 2.2)	2.2 (± 0.7)
Madison	18.5 (± 3.7)	9.7 (± 2.4)	7.4 (± 1.9)	5.2 (± 2.2)	5.7 (± 2.1)	3.7 (± 1.4)
Mid Cumberland	10.5 (± 5.0)	6.4 (± 4.7)	4.5 (± 2.1)	3.2 (± 1.4)	3.7 (± 1.0)	2.4 (± 1.0)
Northeast	17.9 (± 4.8)	12.0 (± 4.0)	6.3 (± 1.8)	7.6 (± 1.8)	4.5 (± 0.9)	4.3 (± 0.9)
South Central	19.5 (± 10.9)	12.6 (± 10.5)	5.9 (± 4.7)	7.1 (± 3.4)	4.4 (± 3.3)	3.0 (± 3.1)
Upper Cumberland	18.4 (± 8.1)	12.1 (± 7.6)	6.6 (± 4.1)	7.5 (± 3.4)	4.8 (± 2.2)	3.6 (± 1.9)
West	23.2 (± 7.7)	13.6 (± 7.2)	8.0 (± 5.3)	8.5 (± 2.7)	8.1 (± 4.1)	4.8 (± 3.9)
Urban Regions	15.5 (± 2.3)	7.3 (± 1.5)	6.7 (± 1.8)	4.3 (± 1.3)	4.3 (± 0.6)	2.3 (± 0.7)
Rural Regions	18.1 (± 3.1)	11.2 (± 2.5)	6.9 (± 1.7)	7.0 (± 1.2)	5.2 (± 1.2)	4.3 (± 1.6)
State Total	17.1 (± 2.1)	9.7 (± 1.6)	6.8 (± 1.2)	5.9 (± 0.8)	4.9 (± 0.8)	3.5 (± 1.0)

Appendix

Table C. Regional-level data on knowledge and attitudes – Tennessee Youth Tobacco Survey, 2004

	Students with one or more friends who smoke cigarettes	Students who think cigarette smokers have more friends	Students susceptible to initiating cigarette smoking
	% (95% CI)	% (95% CI)	% (95% CI)
Davidson	26.5 (± 4.4)	27.1 (± 4.6)	22.4 (± 2.6)
East	28.8 (± 6.5)	19.9 (± 3.9)	21.4 (± 4.1)
Hamilton	32.6 (± 7.8)	25.5 (± 5.4)	22.0 (± 2.1)
Knox	21.2 (± 5.7)	14.8 (± 3.4)	18.1 (± 3.2)
Madison	28.4 (± 4.3)	31.0 (± 3.9)	20.1 (± 4.1)
Mid Cumberland	19.7 (± 10.2)	19.0 (± 5.2)	18.0 (± 3.8)
Northeast	31.2 (± 12.3)	20.3 (± 2.0)	16.0 (± 8.3)
South Central	22.0 (± 16.1)	20.6 (± 5.9)	19.5 (± 4.5)
Upper Cumberland	31.5 (± 9.5)	21.4 (± 6.2)	19.0 (± 5.2)
West	33.4 (± 9.8)	28.8 (± 9.4)	22.3 (± 5.1)
Urban Regions	27.1 (± 3.5)	27.1 (± 6.0)	21.1 (± 2.6)
Rural Regions	26.4 (± 4.5)	22.1 (± 2.8)	19.5 (± 2.0)
State Total	26.7 (± 3.1)	24.1 (± 2.9)	20.1 (± 1.6)

Appendix

Table D. Regional-level data on access and enforcement – Tennessee Youth Tobacco Survey, 2004

	Students who usually obtain cigarettes by borrowing or by having someone else purchase them	Students who purchased their last pack of cigarettes at a gas station or convenience store	Students not asked for proof of age when purchasing cigarettes
	% (95% CI)	% (95% CI)	% (95% CI)
Davidson	35.0 (± 21.3)	30.0 (± 28.5)	63.6 (± 31.7)
East	48.5 (± 14.1)	22.2 (± 9.1)	86.7 (± 12.3)
Hamilton	41.8 (± 10.0)	39.6 (± 15.5)	75.8 (± 11.8)
Knox	36.6 (± 27.6)	42.3 (± 13.7)	74.4 (± 40.0)
Madison	37.7 (± 9.7)	29.6 (± 13.6)	71.8 (± 22.1)
Mid Cumberland	34.9 (± 6.6)	48.2 (± 5.5)	56.0 (± 39.6)
Northeast	47.2 (± 2.4)	38.4 (± 2.7)	71.6 (± 22.0)
South Central	39.6 (± 9.8)	32.3 (± 14.0)	84.4 (± 12.5)
Upper Cumberland	47.6 (± 14.3)	43.3 (± 11.9)	54.9 (± 16.8)
West	44.8 (± 19.1)	45.9 (± 14.5)	52.4 (± 10.5)
Urban Regions	46.5 (± 9.2)	38.4 (± 10.5)	71.2 (± 9.3)
Rural Regions	43.7 (± 5.5)	41.4 (± 6.3)	66.2 (± 13.8)
State Total	44.5 (± 4.7)	40.5 (± 5.4)	67.7 (± 10.0)

Appendix

Table E. Regional-level data on media and advertising – Tennessee Youth Tobacco Survey, 2004

	Students exposed to actors using tobacco on TV and in the movies	Students exposed to antismoking commercials on TV, radio or the internet	Students who most commonly saw tobacco ads in gas stations and convenience stores
	% (95% CI)	% (95% CI)	% (95% CI)
Davidson	81.3 (± 3.9)	65.0 (± 4.4)	65.9 (± 6.7)
East	83.9 (± 1.5)	64.6 (± 4.0)	71.6 (± 6.1)
Hamilton	83.2 (± 1.8)	63.5 (± 5.8)	69.0 (± 1.3)
Knox	79.3 (± 2.6)	66.6 (± 1.9)	74.7 (± 5.8)
Madison	82.3 (± 3.2)	56.3 (± 3.5)	57.5 (± 5.4)
Mid Cumberland	82.5 (± 3.5)	60.1 (± 4.1)	75.7 (± 4.5)
Northeast	85.4 (± 2.5)	68.4 (± 4.4)	70.9 (± 4.3)
South Central	86.0 (± 2.0)	65.2 (± 5.9)	74.0 (± 4.3)
Upper Cumberland	82.1 (± 3.2)	60.0 (± 5.7)	68.9 (± 5.8)
West	80.1 (± 4.4)	62.3 (± 4.9)	61.2 (± 11.8)
Urban Regions	82.2 (± 3.4)	66.4 (± 2.4)	66.2 (± 3.7)
Rural Regions	83.4 (± 1.4)	63.0 (± 2.0)	70.1 (± 2.9)
State Total	82.9 (± 1.5)	64.3 (± 1.5)	68.6 (± 2.4)

Appendix

Table F. Regional-level data on cessation – Tennessee Youth Tobacco Survey, 2004

	Current Smokers who want to quit smoking	Ever tobacco users who have participated in a tobacco cessation program	Ever tobacco users who are unaware of tobacco cessation programs in their school/community
	% (95% CI)	% (95% CI)	% (95% CI)
Davidson	59.5 (± 16.7)	18.6 (± 9.5)	61.2 (± 7.1)
East	50.1 (± 9.0)	12.6 (± 5.0)	64.0 (± 5.7)
Hamilton	59.3 (± 9.0)	16.6 (± 1.6)	60.6 (± 6.9)
Knox	58.6 (± 11.2)	18.5 (± 8.7)	61.8 (± 5.1)
Madison	56.1 (± 11.5)	17.8 (± 4.9)	58.7 (± 7.3)
Mid Cumberland	45.2 (± 10.8)	17.7 (± 6.4)	62.5 (± 7.7)
Northeast	47.2 (± 7.0)	10.8 (± 3.4)	58.3 (± 23.8)
South Central	44.6 (± 8.7)	9.3 (± 2.6)	65.3 (± 9.0)
Upper Cumberland	51.4 (± 5.4)	19.2 (± 3.5)	59.5 (± 4.5)
West	41.1 (± 11.0)	13.1 (± 10.1)	57.3 (± 10.2)
Urban Regions	52.7 (± 12.4)	22.5 (± 9.4)	60.1 (± 5.5)
Rural Regions	47.3 (± 5.3)	16.4 (± 4.8)	60.0 (± 4.7)
State Total	48.9 (± 5.2)	18.9 (± 4.9)	60.1 (± 3.7)

Appendix

Table G. Regional-level data on environmental tobacco exposure – Tennessee Youth Tobacco Survey, 2004

	Students exposed to secondhand smoke at home	Students exposed to secondhand smoke in a car	Students who live with someone who smokes cigarettes
	% (95% CI)	% (95% CI)	% (95% CI)
Davidson	54.1 (± 4.0)	41.9 (± 8.1)	48.2 (± 9.2)
East	60.3 (± 6.4)	50.4 (± 8.5)	50.4 (± 9.0)
Hamilton	52.4 (± 4.5)	43.9 (± 7.5)	49.6 (± 8.4)
Knox	50.3 (± 7.4)	38.1 (± 12.4)	41.0 (± 14.8)
Madison	52.1 (± 4.2)	43.9 (± 4.9)	43.3 (± 5.3)
Mid Cumberland	45.8 (± 8.2)	32.9 (± 9.8)	35.4 (± 11.4)
Northeast	69.1 (± 6.0)	55.2 (± 9.9)	54.3 (± 9.0)
South Central	55.6 (± 3.9)	52.0 (± 5.5)	49.6 (± 8.4)
Upper Cumberland	62.8 (± 5.6)	54.0 (± 7.0)	49.6 (± 9.5)
West	58.5 (± 4.8)	54.0 (± 5.2)	55.9 (± 8.9)
Urban Regions	52.6 (± 5.4)	41.8 (± 4.1)	43.4 (± 4.7)
Rural Regions	56.0 (± 3.1)	46.5 (± 3.7)	46.9 (± 4.5)
State Total	54.7 (± 2.9)	44.7 (± 2.9)	45.5 (± 3.3)

Appendix

Table H. Regional-level data on tobacco education at school – Tennessee Youth Tobacco Survey, 2004

	Students taught about the dangers of tobacco	Students who practiced saying no to tobacco	Students who learned to analyze tobacco ads
	% (95% CI)	% (95% CI)	% (95% CI)
Davidson	26.2 (± 7.5)	23.8 (± 6.7)	13.9 (± 3.1)
East	35.9 (± 3.2)	27.1 (± 4.6)	18.2 (± 3.1)
Hamilton	47.0 (± 7.2)	33.1 (± 7.8)	22.0 (± 3.4)
Knox	63.8 (± 12.4)	47.6 (± 13.5)	35.1 (± 11.3)
Madison	40.2 (± 4.9)	27.2 (± 3.6)	17.8 (± 2.6)
Mid Cumberland	45.4 (± 7.6)	28.4 (± 10.4)	17.1 (± 5.5)
Northeast	40.3 (± 4.6)	24.9 (± 5.2)	21.2 (± 4.9)
South Central	39.8 (± 9.4)	30.1 (± 10.4)	19.7 (± 6.5)
Upper Cumberland	64.6 (± 4.6)	51.8 (± 5.3)	22.6 (± 7.5)
West	41.4 (± 13.5)	28.4 (± 6.9)	16.2 (± 7.9)
Urban Regions	48.9 (± 7.1)	33.5 (± 4.7)	18.8 (± 3.2)
Rural Regions	44.0 (± 3.5)	31.2 (± 3.7)	18.7 (± 2.5)
State Total	45.9 (± 3.7)	32.1 (± 2.9)	18.7 (± 2.0)

Technical Notes

Data presented in this report are based on the 2004 Tennessee Youth Tobacco Survey (TN YTS). The 2004 TN YTS collected self-reported data on tobacco use, attitudes and related behaviors among Tennessee public middle school students (grades 6 through 8). The YTS utilized a 2-stage cluster sampling design to produce a representative sample of public middle school students in Tennessee. In the first stage, schools were randomly selected with a probability proportional to enrollment size. In the second stage, classes were randomly selected from within the chosen schools and all students within the selected classes were surveyed. A total of 110 out of 126 selected schools (87% school response rate) and 9,454 out of 11,675 selected students (81% student response rate) participated in the survey. The overall response rate was 71%.

All data were calculated using sampling weights. Sampling weights adjust for any unequal probabilities of selection, non-response and disproportionate selection of different population groups, and make it possible to make inferences about public middle school students in Tennessee. Because overall participation in Shelby, Southeast and Sullivan was less than 60%, regional-level data from these areas could not be weighted. Because unweighted data are not representative of each region but only of the students who participated in the survey, regional-level data from these areas are not presented in this report. However, students from these regions were included in state-level and urban vs. rural calculations. “Urban” refers to six metropolitan regions: Shelby, Madison, Davidson, Knox, Hamilton and Sullivan. All other regions are categorized as “Rural.” Data were analyzed using SAS version 9.1. Variables were compared and tested for statistical significance using a chi-square test. For two-way comparisons (male vs. female, smoker vs. nonsmoker) a *p*-value of less than 0.05 was considered statistically significant. For three-way comparisons (black vs. white vs. Hispanic), a *p*-value of less than 0.017 was considered significant to ensure an overall type I error of ≤ 0.05 . Unless otherwise indicated, differences noted in the text are statistically significant.

The 2004 TN YTS has the following limitations: First, the data apply only to students who attend public middle schools. The survey did not include high school students, students in private or alternative schools, school drop-outs, home-schooled youth or those in juvenile correctional facilities or treatment centers. In addition, students who frequently miss school may not have been included in the survey. Second, the data are based on the self reports of students, who may over- or under-report their tobacco related behaviors. Finally, the survey does not include information on family socio-economic status or other social and cultural factors that may be linked to tobacco use.

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